

**Curtin Business School
School of Management**

**Information communication technology and endogenous community-
driven development: A remote Australian Aboriginal case study**

Guy Alexander Mackay Singleton

**This thesis is presented for the Degree of
Doctor of Philosophy
of
Curtin University**

August 2013

DECLARATION

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material, which has been accepted for the award of any other degree or diploma in any university.

Signature: 

Guy Singleton, BSc (Hon)

Date: 20/08/13

ABSTRACT

Aboriginal mobility within areas of social, cultural and economic activity is much lower than that of Australia's mainstream population. Australian Aboriginal disadvantage and marginalization is well documented, and Australia's first people share this development disparity with other Indigenous peoples of the world. In response to this, the disparity between the development mobility of Australian Aboriginals and the mainstream population has been popularised in the phrase 'The gap'. Australia government policy initiatives now target 'closing the gap' with the intent to statistically equalise Australian Aboriginals with mainstream Australians. During the 1990s, within the development field recognition of the importance of participation emerged as underpinned by growing academic (Nussbaum & Sen, 1993 Sen 1999) and institutional (UNDP 1990, 1993) concerns for alternative development pathways.

Since then, significant international development investment has been made to increase the mobility of marginalised and disadvantaged peoples through a normative 'best practice' participatory oriented equity approach, but with limited success. More recently, development theory acknowledged that deterministically the particular lived realities of peoples in specific geographic contexts matters (Rao & Walton 2004). A more people-centre approach emerged; one that acknowledges that the worldviews, values and practice of particular peoples, in particular settings are valuable assets and resources to drive locally determined community development approaches. Such an approach now underpins an adaptive 'best fit' (Chambers 2010) participatory approach to development agency.

Revolutionary developments in the early 2000s of information and communication technologies (ICTs) contributed to development practitioners identifying them as appropriate tools for marginalized peoples to increase participation, local ownership and decision-making during development related initiatives. Organizations, such as the United Nations, began to explore understanding the role ICT may play within development, particularly development of the marginalized and

disadvantaged. Subsequently, the notion of ICT for Development (ICT4Dev) emerged as a potentially powerful participatory tool to facilitate locally determined development. These ICT4Dev ideas offer potential insights into how Australia's Aboriginal population may increase their development agency and mobility.

This thesis aims to contribute to discussions on overcoming Aboriginal disadvantage through research into the role ICTs play in facilitating locally determined, driven and hence, meaningful development (endogenous) for remotely located Australian Aboriginal communities. A substantial analysis and critique of the normative effects of policy and dominant development discourse set the theoretical framework for the Aboriginal ICT development imperative. The project was physically based in four Australian Aboriginal communities, three of which classified as remote; which in an Australian geo-regional and Aboriginal context, assumes lower access to government resources and support, and higher levels of sociocultural dysfunction and marginalisation than more centralised and mainstream localities. Participant observations were carried out in primary Ngalia community case study over six years. This community was characterized by its Aboriginality, remoteness, degree of systemic disadvantage, and a demonstrated history of community-driven development action.

Three minor cases were included for comparative data involving communities with similar characteristics, though much shorter contact periods (two weeks to two years). The qualitative data collection methods employed included participant-observation, and interviews to capture local specificities, participant' trust, and engagement within ICT-interaction and related development initiatives. The endogenous community driven and participatory actioned nature of project initiatives served as a vehicle for iterative experimentation and generative learning, i.e., reflexive inquiry.

The researcher participated in a wide range of ICT-related development initiatives within each case study, allowing the researcher and participants to share the reflexive learning journey together.

Within this reflexive participant-observation process elemental patterns emerged, i.e., participants involved, ICT-used, participatory approach, community development themes and development outcomes, capturing themes, such as advocacy, cultural maintenance, strengthening and economy. Together these patterns and themes contributed to a conceptual framework – the agency elements of ICT-interaction for Endogenous Community Driven Development or ‘EnCDD’. Using this framework to interpret the data enabled assessment of the meaningful role of ICTs as tools within the case-based Aboriginal EnCDD. The findings offer insights for further research into the role of ICTs in Aboriginal EnCDD and community adoption; this study concludes that there may be a diverse and complex yet interlinking set of drivers for Aboriginal people to engage ICT for community development. Some ICT applications are particularly well suited to facilitating community driven development. To take advantage of the full range of ICT opportunities, groups must contain a certain level of internal understanding or reasoned agency of the opportunities and applications that exist for their given circumstances and needs.

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ACKNOWLEDGMENTS

I would firstly like to thank my supervisor, Associate Professor Dr Fay Rola-Rubzen, who took me on as a student when the project lost its way in its second year. I am forever grateful for her ongoing support, trust and defence of what has been a somewhat non-conformist research project.

I am indebted to Dr Louis Evans who provided me with the initial chance to enrol in a PhD of this nature and assisted in the fundamental development of this research project. I thank Dr Evans for her visions and for taking on a fresh biological science graduate and presenting the opportunity to engage in the world of Aboriginality.

It is difficult to overstate my heartfelt thanks and appreciation to the Ngalia participants who contributed so openly and fundamentally to this research project. I will be forever inspired by your stoic fortitude and contagious ability to triumph in the face of adversity. I applaud and thank you all. This thesis would not have been possible without you, and I will be forever at your side in return.

To the participants from Ceduna, Titjikala and Collie, many of whom have since passed-away, I sincerely thank you for your trust. Indebted to your cause, I hope any humble findings derived from this project can contribute to the empowerment of subsequent generations.

Throughout this project I received invaluable academic mentoring from two inspirational individuals who deserve a special mention: Dr Michael LaFlamme (then CSIRO, Alice Springs) and Dr Helen Singleton (Adjunct Associate Professor Curtin University). Over the years there were many periods of self-doubt and critical project reflection. I would like to thank Dr LaFlamme for his guidance on this project as an experienced livelihoods researcher, who was always willing to take my call and reflect on his practice with participants at Lajamanu and Yuendumu communities. Dr Singleton advised me on many aspects of my research methodology and enabled my transformation from a quantitative biological science graduate into a published and cited qualitative PhD candidate within the field of participatory methodology and Aboriginal ICT interaction. Your enduring support and guidance goes unmatched.

I thank Curtin University and the (then) Desert Knowledge Cooperative Research Centre (now the Centre for Remote Economic Participation) for both having me enrolled as a research student and for providing me with academic scholarships. Similarly, the Government of Australia for awarding me with an Australian Postgraduate Award, which made a great portion of my project practically achievable.

I could not leave out Assistant Professor, Dr Jon Corbett from the University of British Columbia and Dr Mary Stockdale, who I had the privilege to work with during this project's inception on several highly influential and collaborative projects in Australia, Canada and Italy. I thank Dr Corbett for his collaboration in the PLA journal article and Rome FAO conference presentation.

Towards the end of this project, Associate Professor, Dr Roy Murray-Prior agreed to join my supervisory panel as a co-supervisor. Your efforts were greatly appreciated in the final reviews of this thesis.

I thank Dr Ross Lantzke formerly of Murdoch University for providing eleventh hour formatting assistance: your knowledge of MS Word is second to none. I appreciate the opportunity provided by Dr E-J Milne from the University of Stirling to co-author a book chapter in *The Handbook of Participatory Video* (2012).

To all my friends who encouraged and supported me during this long journey I thank you. A special mention goes to John Abordi, Stefan Bergen and the Campbell's. I am also thankful of the lifelong support unquestionably provided by family and in-law's; Mum, Dad, Eugenie, Roderick, Eugene, Caroline, Noyna, David, Kim and Christine.

Above all I thank my wife Katrina for enduring what was at times was an arduous journey and always making me feel like I was capable of getting to the end: you felt much of the pain, yet receive little of the accolade. Thank you.

Lastly, I thank my daughter Harriet, who arrived 16 months ago and unknowingly provided much of the catalyst for completing this project.

Chapter 1

Introduction

1.1 Aboriginal disadvantage and development theory

Australian Aboriginal peoples are globally acknowledged to experience varying and substantial degrees of social, cultural, and economic marginalisation (Dodson & Smith 2003; Steering Committee for the Review of Government Service Provision (SCRGSP) 2009; Pink & Allbon 2008; Altman 2009a). This situation is apparent when Aboriginal mobility within these key categories is compared at a national statistical level to Australia's non-Indigenous population (SCRGSP 2009). SCRGSP (2009) uses the term 'mobility' to describe the ability of Aboriginals to address their marginalised circumstances across social, cultural and economic areas of society. The disparity between the development mobility of the Aboriginal population and the mainstream Australian population is reflected through the popularised phrase 'The Gap' (Altman 2009a). Subsequently, recent attention from government policy and mainstream advocacy has targeted 'closing of the gap' (SCRGSP 2009). The desire to statistically equalise Aboriginals with mainstream Australians has been questioned with regard to just who this approach actually seeks to appease (Altman 2009a), and because the logic of closing the gap as a single development target fails to recognise the varying differences between mainstream and Aboriginal development realities and imperatives. Within this debate, along with the normative statistical equalising approach, an alternative approach that valorises particularist Aboriginal community cultural characteristics has taken traction on the assumption that reconciling pluralistic Aboriginal and mainstream values and practice may result in more meaningful outcomes for Aboriginal peoples. These debated development positions can be characterised as the universalist conceived 'best practice' assumptions underscoring a normative equity approach, and the particularist 'best fit' assumptions alternatively underscoring an adaptive-pluralist approach.

This assumption dichotomy articulates the evolution in thinking within the international development field over the last fifty years and is encapsulated by

concerns for mainstream singularly targeted economic mobility to more pluralistic socio-cultural ideas of what might constitute more 'meaningful' notions of human agency. In recognition of the multifaceted character of development, the United Nations Development Program (UNDP 1993) *Human Development Report* focused on the degree to which people participate in the decisions and actions that shape their lives as a key determinant of development outcomes. 'Agency', generally understood as one's ability to act, has subsequently become increasingly recognised as a fundamental target of people-centred development. Reviewing the international development literature indicates that since then researchers and practitioners have variously invested in exploration of participatory approaches and tools as conceived to address the agency needs and performance of the peoples of developing nations and communities, but with only limited success (see Ferguson 1990, Sirolli 1995; Easterley 2006).

Some development theorists and practitioners emphasise that the nature of agency and the resources employed for development differ between individuals and groups (see Escobar 2006; Chambers 2008, 2010). They point to the disparity between the lived and situated development realities of communities and, the normative Western 'best practice' assumptions and methods conceived to increase participatory agency, as employed across a wide range of development projects and in diverse contexts. They argue that this conceptual disparity accounts for the variable and short-term effects of 'best practice' outcomes. Critical and alternative views emphasise the impact of the 'situationality' and 'positionality' (Sumner & Tribe 2008) of agents. They postulate that participatory agency informed by the worldviews, values and practices of particular peoples living in particular settings could more effectively drive a locally determined development approach, i.e., a 'best fit' agency approach.

Encapsulated as an 'adaptive pluralist' approach, Chambers (2010) assumes that development initiatives that value diversity and difference can generate higher levels of participatory agency through the engagement of local worldviews, values and practices for the determination of a development action that accounts for local

realities, and hence, is locally meaningful. The assertion is that people must possess the freedom to actively participate in all areas of their development, providing experience, viewpoint, knowledge and decision making to identify and drive *their* development.

Therefore, tools are needed to allow people to overcome their marginalisation and disadvantage, reduce their reliance on exogenous experts and facilitators, and bring the peoples' formative history, resources and needs to the centre of the development agency and objectives.

1.2 Development and ICTs

Around the time participation became central to human development theory and practice, ICTs began to play a utilitarian role in development theory and practice. This relationship was mobilised by the increasing economic integration processes of globalisation in the early 1990s (Akhtar & Laviolette 1996; Hall 1998; UNDP 2001; Colecchia & Schreyer 2002; USAID 2004; Labelle 2005; Kyem & LeMaire 2006; Langmia 2006; Gray et al. 2006; Marshall & Taylor 2007) and the growing connectivity brought about by the revolutionary development of ICTs (Castells & Cardoso 2005). During this period, ICTs were credited as being instrumental in facilitating many of the changes brought about by globalisation (Unwin 2009).

Prior to this period, ICT access and use was largely controlled by the rich and powerful (Unwin 2009). As the information age evolved, communication technology began to variously impact the ways in which societies, their economies and cultures were shaped and functioned (Castells 2000, cited in Unwin 2009). The facilitative role of ICT to access or disseminate information and knowledge began to affect people's lives for better or worse, with transformative implications for the lives of the disadvantaged and marginalised.

However, the transformative implications of ICT applications and their effects cannot be easily predicted, nor accurately identified, as ICT interaction and

innovation is a process deeply influenced by the formative conditions of a particular organisational or social context (Avgerou 2003).

In 2001, a multi-stakeholder initiative – the United Nations Information Communication Technology Task Force (UNICTTF) – was established in recognition of the need to better understand the link between development and ICTs from a global perspective. Subsequently, international development agencies adopted the anagram ‘ICT4D’ (ICT for development) to categorise rising institutional interest to explore applications and effects from adopting ICTs to development tasks (UNICTTF 2001). This institutional initiative formalised a connection between ICT and development, and highlighted the contention that through participation as the model for development, ICT can have a role in delivering effective development practice (Unwin 2009). As the ICT sector shifts from serving to increase the efficiency of mainstream capitalist economic objectives to encompass more social aspects of knowledge production and management, the relevance of this technology is becoming increasingly of interest to marginalised and disadvantaged groups (see Ashley et al. 2009). ‘Improved access to telephones, the Internet and ICT services have the potential to mitigate the negative effects of the geographic and social isolation experienced by communities’ (Bandias 2010, p. 47). As ICT adoptive applications cannot be easily predicted, there is a real need for studies that investigate how these technologies are being utilised by marginalised and disadvantaged peoples. Bandias (2010, p. 47) asserted that ‘the role of ICT in building the social capital of Indigenous communities is an area that needs further research’.

This research aims to contribute to this undersubscribed but vital research area. Unpacking how the environmental conditions of participatory processes, as related to ICT4D adoption, contribute to development outcomes should be of great concern at local, national and international societal levels. Hence, this research’s objective to unpack this process would be of relevance to development practitioners, ICT architects and marginalised and disadvantaged peoples.

1.3 The research project

This study sought to observe how a wide range of ICTs was being used for development agency by marginalised Australian Aboriginal peoples in remote localities. It also takes into account the participatory processes that facilitate both the participant ICT interaction and the historical context of the participants' environment in which the observations were made.

To maintain the integrity of the targeted observations, this research project focussed on endogenous community-driven ICT interactions, and minimised out-of-context researcher/institution-initiated ICT projects.

The aim was to observe participant-led ICT4D interaction and outcomes that intrinsically harmonise with their development realities and aspirations. With this in mind, the researcher invested significant time to engage with and understand the marginalisation context and development objectives of the participants, and win their trust to support and facilitate ICT interactions that harmonised with their prior community experiences and past project initiatives.

ICT encompasses a wide range of rapidly evolving tools and technologies, and subsequently, this research project documented interaction experiences with a wide range of ICT applications. The approach of targeting wide-ranging ICT applications is unique, as most research projects target a single ICT in detail.

This thesis contends that the endogenous community-driven and approach of wide ranging ICT applications offer multifaceted insights into the interconnectedness of holistic ICT adoption for development agency by Aboriginal peoples, including mobile phones, participatory video, Web2fordev, and digital data-basing.

The project was structured through four case studies. A primary case study provides the bulk of the research data. Three minor cases complement this primary data set. Three of the cases classify as remote or very remote (including the primary), while one is rural (the degree to which an Aboriginal community is classified as remote,

often denotes a correlation to disadvantage and marginalisation in comparison from urban settlements and mainstream populations). All participants involved in this research project, except one primary case participant, self identify as Australian Aboriginals. Engagement of over the six years of researcher-participant contact with the primary case study afforded the researcher in-depth knowledge to understand the complexities experienced by the primary case study community. The Ngalia people of Leonora, the primary case study, are a sub-group from within the broader Wongai people of the Northern Goldfields Region of Western Australia. They were some of the last people to be exposed to colonial culture, and to this day maintain a strong cultural heritage. A number of the Ngalia people experience severe disadvantage and marginalisation. During the six years of contact, the researcher made over 30 visits to the community, lasting up to 17 days at a time. Prior to the research, key Ngalia informants had a strong track record of technology adoption for development purposes, and the researcher was able to engage with their continuing experimentation with new ICT4D projects. High levels of trust and quality relationships developed during this time frame. This formed the basis for much of the privileged access to research data and content. The three minor cases were short-term, and hence, significantly less intensive, with one lasting only 10 days. However, they provide valuable observations for comparative analysis and reflection contributing to the overall reliability of the research output.

1.4 The Research Questions

Case study inquiry is typically organised around ‘a topical issue’ and a ‘thematic concern’ (Stake 2000; 2005). The topical issue driving this research articulates the development imperative of remotely located Australian Aboriginals with thematic focus on questioning the role of ICTs in Aboriginal endogenous community driven development. Thus, the following four questions articulate to this general development oriented thematic focus:

1. Was there a role for ICT within Aboriginal EnCDD activities?
2. What key development themes were identified within Aboriginal EnCDD involving ICT interaction?
3. What factors contributed to meaningful ICT participation and interaction?

4. Which ICTs present the greatest development opportunities for Aboriginal peoples?

Typically in case-based research, issue-related observations and emergent patterns identified within the data foreshadow more complex issues that articulate to the thematic concern. In this research, a pattern emerged from the data to inform a conceptual schema – the agency elements of ICT-interaction for EnCDD – to probe deeper into the thematic concern. Each of the five thematic agency elements associated with the development processes and outcomes of ICT-interaction foreshadowed the following pertinent issues and related questions:

- The participants – *who was involved?*
- The ICT used – *what technology was chosen and why?*
- The participatory approach – *what modes of community direction, decision and action were employed?*
- Development themes – *where the projects advocacy, cultural maintenance, strengthening or economic in development agency orientation?*
- Outcomes – *what outcomes/lessons learnt resulted for the community?*

This research assumes that focus on unpacking these issues and related questions will inform deeper insights to respond to the five questions above. The research assumes that insights drawn from this specific remote Aboriginal community case research may contribute to wider understandings on the role that ICT-interactions have on EnCDD for Aboriginal communities.

1.5 The thesis structure

Chapters 2, 3 and 4 review relevant literature to inform the theoretical and practical assumptions that underpin the research. Firstly, Chapter 2 engages with discourse to contextualise the subject of Australian Aboriginal marginalisation and disadvantage. The chapter focuses on the particular circumstances faced by remote Aboriginal communities. It highlights the contentious nature of theory and practice as incorporated in recent debates and policy initiatives conceived as a means to address this national dilemma.

Chapter 3 explores the international development literature for theoretical and practical insights into the shifting assumptions underpinning the evolving character of development discourse. Chapter 4 reviews the literature concerning the development and rapid evolution of ICTS, exploring the discourse on how ICTs can act as an interactive tool to facilitate participatory development agency with reference to an Australian Aboriginal context. The final section of Chapter 4 draws on insights derived from this multidisciplinary review to propose a conceptual and applied EnCDD framework to interpret the diverse Aboriginal community ICT-interaction case study experiences.

Chapter 5 presents the research methodology used in this project. Firstly, the formational background to the research is presented to explain how this frames and justifies the methodological strategies employed. Exposition on the ontological, epistemological and critical research assumptions is discussed to give credibility to the EnCDD framing of the research and the methods chosen, with particular concern for the critical issues associated with research involving Indigenous peoples. The choice of a case-based method (Stake 2005) is explained along with discussion on the multifaceted participant-observer role of the researcher as 'bricoleur' (Kincheloe 2001; Denzin & Lincoln 2008a), and how the research aligns with the assumptions of 'action research' (Stringer 2007). Together, these discussions aim to justify and give credibility to the research's qualitative methodology design. More specifically, the choice of the data collection, organisation and reporting methods as applied to interpretations of participant observation, semi-structured interviews, and informal and formal community meetings are outlined. Finally, the interpretive framework for data analysis of the role of ICT-interaction in Aboriginal EnCDD is discussed. From a critical-development perspective, the material included in this chapter aims to 'give-life' to Aboriginal experiences, to raise empathy for the participant experiences, and to build credibility and authenticity (Guba & Lincoln 2008) for the research.

The case study involves three chapters. Chapter 6 adopts a 'desk top' secondary source data and primary source data from key informants to contextualise the

remote and regional development of the Goldfields of Western Australia, the location of the primary case community, and from both normative and particularist indigenous development positions. These plural contextualising positions into the local development reality and the formative historical background of the primary case community explain the assumptions driving the community's EnCDD approach. Chapter 7 chronologically narrates the primary case encapsulating the unfolding story of the participatory agency and ICT-interaction experiences from the multiple views of participant observation. Each of the seven ICT-interaction phases are summarised in terms of the key agency elements of the ICT-interaction for EnCDD framework. Chapter 8 briefly contextualises and presents the minor case experiences. The various development agency ICT-interaction activities and participant observations made at the three minor case research sites are discussed.

Chapter 9 draws together the seven phases of ICT interaction of the primary case through analysis, synthesis and reflection of the five key thematic agency elements identified in the ICT-interaction for EnCDD framework. Where appropriate, comparisons are drawn from the minor case experiences. The implications of the case-based research findings are summarised in table form. Drawing on the findings of the case-based experiences responses to the five research questions are presented. Finally, extrapolating insights from the case study findings, Chapter 10 reflects on the more general relevance of the case research findings of the role of ICT interaction for Aboriginal EnCDD.

Through its observations and subsequent analysis, this thesis contends that the multifaceted, emergent and evolving nature of case-based insights drawn from the various agency elements included in the ICT4EnCDD framework indicate the utilitarian value of the applied model for researchers and development practitioners concerned to understand how the participatory quality of ICT-interaction can work to leverage more meaningful participatory EnCDD agency and outcomes for remote Aboriginal communities. Given the increasing participatory nature of ICT, and subsequent potential for marginalised groups to engage agency,

through use of the ICT4EnCDD framework the thesis found that within remote Aboriginal Australia there are direct and tangible effects.

Chapter 2

The imperative to understand Australian Aboriginal disadvantage and pathways forward

2.1 Introduction

This literature review draws on a broad range of multidisciplinary fields deemed relevant to develop a multifaceted conceptual framework to address the particular Aboriginal community development focus of the research. The various fields included in the literature review offer evolving and diverse insights into the multifaceted complexities associated with the specific development realities of Australian Aboriginals. More specifically, they guide the investigation into the proposition of ICTs as appropriate participatory technology to address areas within this specific development imperative. Thus, the literature review is divided into three distinct, but interrelated disciplinary chapters.

With the development concern of this thesis focused on remote Aboriginal communities, Chapter 2 explores the disadvantaged character of contemporary Aboriginal development realities. Section 2.2 introduces key international institutional understandings on the development imperative of the Indigenous peoples of the world. Section 2.3 identifies key population features of the Australian Aboriginal population. The issue of Aboriginal disadvantage is contextualised in Section 2.4 through discussion a range of evolving socio-geographical factors and governance policy actions that frame the disadvantaged character of contemporary Aboriginal lived realities. Together, the material sets this thesis' premise that the field of international development offers theoretical and practical insights into the complex character of challenges associated with the development of marginalised and disadvantaged Aboriginal peoples. In imagining a more meaningful and robust 'way forward' to address the development imperative of remote Australian Aboriginals, this thesis contends that recognition of the impact of past policies and actions on Aboriginal communities is a vital first step.

2.2 The development imperative of the Indigenous peoples of the world

According to the United Nations Permanent Forum on Indigenous Issues (<http://www.un.org/esa/socdev/unpfii/en/declaration.html>) Indigenous peoples number about 370 million and are found in some 90 countries. In general, the Indigenous Peoples of the world share a common reality of development disadvantage: 'Compared to the general population of their countries, they have higher rates of infant and maternal mortality, less access to education and limited participation in the government and social systems that affect their lives' (United Nations Food & Population Association n.d).

2.2.1 International definitions of Indigenous

According to the United Nations Development Group (2008), the international community has not adopted a consensual definition of Indigenous people: 'The prevailing view today is that no formal universal definition is necessary for the recognition and protection of their rights' (p. 8). Albeit, there are a numbers of ways in which Indigenous peoples have been characterized, which are now discussed. Characteristically, Indigenous peoples are commonly regarded as those people who inhabit a geographical region to which they hold the earliest known physical connection (United Nations Development Group 2008). Further refining and standardizing a definition has proved difficult, and hence, is commonly avoided due to the tremendous diversity in cultures, histories and current circumstances of such peoples (Asian Development Bank 1998). The UN considers elements of self-identification, historical continuity with pre-colonial societies, strong links to territories and natural resources, distinct social economic or political systems, distinct language, culture and beliefs, and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities as key characteristics of Indigenous identity (United Nations Permanent Forum on Indigenous Issues 2008).

The United Nations Development Group promotes the ‘working definition’ presented in the *Martinez Cobo Study*:

Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems (Martinez-Cobo 1986/7, cited in United Nations Development Group 2008, p. 9).

This definition underscores the shared pre-invasion character and subsequent colonial impact that underpins the contemporary disadvantaged and marginalized character of Indigenous communities and peoples.

Indigenous peoples are often excluded from political participation; are both socially and economically marginalized and represented disproportionately among victims of human rights abuse (United Nations Development Group 2008, p. 10). They are ‘often denied their right to control their development, despite having a diverse concept of development, based on their values, visions, needs and priorities’ (p. 10). Indeed, Indigenous peoples globally suffer the desecration of their sovereign right to control their lives, to live according to their own laws, to determine their own futures, and control their own identity (Dodson 1994, p. 5).

Indigenous peoples suffer from a history of discrimination and exclusion that has left them on the margins of the larger societies in which they exist. For this reason they face great difficulties in maintaining and developing their own model of development and wellbeing and are consequently disproportionately affected by poverty and exclusion (Martinez-Cobo, cited in United Nations Development Group 2008, p. 1).

Australian Aboriginals share these Indigenous peoples histories and contemporary realities. These views alert to the shared impediment of the Indigenous peoples of the world for self-determined development agency.

The shared historical, geographic, cultural and socio-political circumstances framing the characteristic disadvantage and marginalisation of Indigenous peoples mean that they are often the recipients of development assistance. This development assistance encompasses various interpretations on how to reduce their marginalization and disadvantage, and increase opportunity and autonomy. The significant global institutional and community concern for the shared marginalization and disadvantage of Indigenous peoples justifies the review of the international development literature, as explored in Chapter 3, for insights into this thesis' particular focus on the development realities of remote Australian Aboriginals. The next section explores the characteristic development notions of disadvantage and marginalization in the socio-political context of the Australian Aboriginal population.

2.3 Australian Aboriginal population characteristics

The Aboriginal and Torres Strait Islander peoples are the two main groups of peoples in Australia that self-identify as being 'Indigenous'. From the 1980's, the Australian government has used a definition that stipulates Aboriginal and Torres-Strait Islander people are people of this descent, who identify as such and are accepted as such by the community in which he or she lives (Dodson 1994, p. 6). While there are no accurate estimates of the indigenous population of Australian before European settlement, historical estimates vary from a minimal figure of 300,000 to others over 1 million, suggesting that a population of 750 000 could have been sustained (ABS 2002).

According to the preliminary and adjusted estimated 2006 national census data, Australia's Indigenous population is estimated to be 517,174 individuals, or 2.5 per cent of the Australian population (ABS 2010d; SCRGSP 2009). The SCRGSP (2009) notes that of the Indigenous population, 90 per cent identify as of Aboriginal origin. The geographic location of Australia's Indigenous population is noteworthy. Of this population figure, around 43 per cent of people live in regional and outer-regional Australia, while 24 per cent of the population live in remote or very remote locations (ABS 2006a). A greater proportion of the Aboriginal population is located

in outer regional and remote areas compared to the non-indigenous population (SCRGSP 2009). Under the Australian Geographical Classification Remoteness Structure (AGCRS) a significant number of Aboriginal communities are located in remote and very-remote localities (ABS 2007), which denotes with its assumptions of increased disadvantage in correlation with distance from urban populations. Hence by and large the Australian Aboriginal population is a geo-regional population. This research focuses on the specific development issues of several groups of people located in regional Australia, who identify as Aboriginal, including, for example, the Tjupan and Ngalia people from within the Wongatha (Wongai) group. The Wongatha people are located within the north east of central Western Australia. According to the AGCRS, these particular community groups are located in very-remote regions (ABS 2007a).

2.3.1 Introducing Indigenous disadvantage

The usage of the characteristic term 'disadvantage', as applied to Indigenous peoples infers unfavourable conditions or circumstances likely to reduce the chance of success or effectiveness (Willis & Moore 2008). Disadvantage is relative to the range of varying social, cultural, economic and political contexts underlying the exclusion of people from such aspects of society (Narayan 2002). The term disadvantage shares connections with the concepts of 'marginalization' and 'disempowerment'. This connection relates to the fact that disadvantaged peoples generally endure political and economic marginalization, resulting in their disempowerment within a range of societal sectors, limiting their ability to accumulate assets and enact capabilities (Narayan 2002).

In keeping with the international understandings of Indigenous marginalisation and disadvantage in Section 2.2, the impact of mainstream Australian culture and numerous government policies, be it unintentional or otherwise, has unquestionably contributed to the erosion of many foundations of Aboriginal ways, undermined Aboriginal norms, and reduced the autonomy of Aboriginal people in contemporary Australian society. The resulting cause and effect impacts of history and policy have been: broad-scale land alienation, successive assimilation

strategies, and a subsequent drastic reduction in the ability of Aboriginal people to maintain effective and independent cultural activity, causing increased dependence on government support and welfare (Altman & Nieuwenhuysen 1979; Westerman 1997). Under this premise, Australian Aboriginals, while acknowledging exceptions, have endured the deep impact of multi-generational disadvantage.

The reluctance of mainstream and dominant Australian society to grant meaningful levels of independence to Aboriginal people has been identified as a contributor of Aboriginal disadvantage. Noteworthy Aboriginal spokesperson, Michael Dodson's echoes this underlying reluctance in his well-cited 'Wentworth Lecture':

We are constantly defined as 'other', but we are never permitted to be generally independent, generally different. In fact, far from being recognized in our difference, in our own terms, we are always defined in the terms of the colonising or defining culture.... Our difference and our independence would threaten the boundaries of identity, knowledge and absolute truth, which give the subject a sense of power and control.... Aboriginality is defined in terms of how it compares with the dominant culture (Dodson 1994, pp. 8-9).

Australian Aboriginals endure a high degree of social, cultural, economic and political disadvantage when compared to the nations non-indigenous population (see SCRGSP 2009). They experience the highest rates of poverty, unemployment, early mortality, and the lowest education rates within the country (Dodson & Smith 2003). Among all OECD countries, Australia rates last within Indigenous health and well-being rankings (de Leeuw 2007). The most poignant indicator of Aboriginal disadvantage is Australia's 17-year gap in overall life expectancy between Aboriginal and non-indigenous peoples (Pink & Allbon 2008; Altman 2009a). This 17-year figure has increased between 1967 and 2004, despite overall life expectancy increasing for both Indigenous and non-indigenous peoples (SCRGSP 2009).

Indigenous disadvantage is commonly referred to and quantified as 'the gap'. The gap refers to the statistical variance between mainstream socioeconomic indicators of Indigenous and non-indigenous Australia (Altman 2009a). Data is sourced from government census held every five years, with the Indigenous population first

included in 1971. Aside from the Australian Bureau of Statistics census-based data, the Australian Federal government's bi-annual 'Overcoming Indigenous Disadvantage' reports (see SCRGSP 2003, 2005, 2007, 2009) seek to evaluate policy programs within this area and provide clarity on the state of Aboriginal disadvantage within Australian society.

Political rhetoric currently rests on an agenda of 'closing the gap', focused particularly through the aim to bridge the health status and life expectancy for Aboriginal Australia as equal to that of mainstream Australia (SCRGSP 2007; Pholi, Black, & Richards 2009). Gap indicators target aspects of Aboriginal unemployment and labour force participation, income, household size and home ownership, education, life expectancy and health (see Altman, Biddle & Hunt 2008; Altman 2009a). The majority of these disadvantage indicator categories are of prevailing societal origin and assumptions in that they reflect the dominant society's social norms and values. This dominant approach leaves questions unanswered of whether, once statistical equality has been reached and the gap closed, will the outcome be the assimilation of Aboriginal people into the mainstream society? Moreover, how might Australian Aboriginals rank themselves with regard to self-categorization of cultural identity, a key Human Rights characteristic of the United Nations Declaration on the Rights of Indigenous Peoples (United Nations Development Group 2008)?

Albeit, recent political rhetoric that employs a dualist approach, one that valorises both particularist cultural characteristics and mainstream norms, indicates a trend to value diversity and difference over statistical equality (Altman 2009a). Such progressive dualistic efforts to overcome Indigenous disadvantage have focused on early childhood development, education and training, healthy lives, economic participation, home environment, safe and supportive communities, governance and leadership (SCRGSP 2009). As policy is shaped around the acceptance that Aboriginal disadvantage is holistic in character, a holistic policy approach must be applied to render it. Despite these noteworthy changes, disadvantage indicators may still fail to capture alternative concepts of Indigenous 'advantage' (Taylor

2008), where resources available and valued for sustaining the well-being of the Indigenous population, such as subsistence hunting, are not recognized by mainstream Australia (Altman, Buchanan & Biddle 2006; Biddle 2009).

2.3.2 Disadvantage in remote Aboriginal Australia

Both socio-economic and environmental factors to regional Aboriginal disadvantage have been identified (see Altman & Sanders 1991; Pearson 2000; Quiggin 2001; SCRGSP 2003; 2005; 2007; 2009; Biddle, Taylor & Yap 2008; Pink & Allbon 2008; Altman 2009a). These multifaceted factors include employment, housing, education and learning, and health (mental and physical). Using socio-economic status, a key statistical determinant of 'the gap' to exemplify Aboriginal disadvantage within mainstream Australian society, this section briefly discusses the current state of disadvantage within regional and remote Aboriginal Australia, and the historical underpinnings to these circumstances.

Aborigines in remote localities generally experience greater levels of socio-economic disadvantage than those living in urban areas (see Biddle 2009). Employment rates are lower in remote areas, despite the often-high levels of employment within non-indigenous populations of the same area (Biddle, Taylor & Yap 2008). While indigenous employment rates by locality appear multi-dimensional (i.e., there are varying trends against the norm), the common pattern is for unemployment to increase with distance from urban areas (Biddle, Taylor & Yap 2008).

Overcrowding in housing is more frequent in remote areas and can have negative effects on health, family relationships and children's education (SCRGSP 2009). Overcrowding has also been linked with increased domestic tensions, insufficient sleep rates, an inability to achieve basic level environmental health, and the spread of diseases (SCRGSP 2009), and in some instances correlates to an increase in substance abuse (Legislative Assembly of the Northern Territory 2004). Overcrowding in remote Aboriginal communities is partially influenced by cultural and social factors, and the tendency for Aboriginal people to house extended and

often travelling kinship networks (see SCRGSP 2009). These socio-cultural factors exemplify the interpretive significance of the 'local' context of disadvantage and alert to not relying on normative assumptions to 'solve' the problem. Overcrowding may also be due to inadequate, inappropriate and poorly serviced housing (Department of Health and Aged Care 1999).

Aboriginal education statistics also exemplify chronic disadvantage, despite the statutory responsibility for governments (state or territory) to support the formulation of policy and funding ensuring the effective delivery of schooling. Education enrolment and attendance rates are lower for Aboriginal children than non-Indigenous children (SCRGSP 2009). Zubrick et al. (2005) posit that a direct relationship between attendance and academic performance exacerbates this situation and they contend that improving rates of participation and attainment of Aboriginal peoples within the educational system to be key strategies to improve their socio-economic and health outcomes.

The gap in learning outcomes between Indigenous and non-Indigenous students increases as the degree of remoteness increases (SCRGSP 2009). Within remote areas, factors contributing towards low educational participation include: difficulties accessing schools, inability to afford education, cultural characteristics that do not harmonize with mainstream education, a lack of parental support enforcing attendance or assisting with homework, low teacher quality in hard to staff schools (SCRGSP 2009), and bullying and teasing (UNICEF 2004; SCRGSP 2009). Anecdotal evidence suggests the involvement of Aboriginal parents in their child's education is linked to past experience, demonstrating the multi-generational nature of such issues (Zubrick et al. 2005). This resulting systematic exclusion of Aboriginal people from mainstream education (and society) has created a crippling legacy for many Aboriginal communities, contributing to the highly unsatisfactory state of Aboriginal education evident today (Zubrick et al. 2005).

Australian Aboriginal peoples experience very high rates of numerous physical and mental illness, resulting in lower life quality and higher mortality rates (SCRGSP

2009, p. 410). Health outcomes including life expectancy, infant mortality, disability and chronic disease directly affect the quality of peoples' lives (SCRGSP 2009, p. 410). In almost every instance, Aboriginal people rank lower in health status (see ABS 2006a; Pink & Allbon 2008) than Australia's non-Indigenous population. The five leading causes of death for Indigenous people are: diseases of the circulatory system; injury; cancers; endocrine, metabolic and nutritional disorders; and respiratory diseases (see Pink & Allbon 2008).

Aboriginal adults were twice as likely as non-aboriginal adults to report their health as poor, twice as likely to report high levels of psychological distress, hospitalized at 14 times the rate of non-indigenous people, and hospitalized for potentially preventable conditions at five times the rate of the non-Indigenous population (Pink & Allbon 2008). Over half of Indigenous adults were regular smokers (2004-2005), more than half of Indigenous adults aged 15 years and over were overweight, or obese. Combined mortality rates for Indigenous males and females in Queensland, Western Australia, South Australia and the Northern Territory are three times that of the non-indigenous population (Pink & Allbon 2008). Life expectancy for Indigenous peoples, while greater for females than males, is around 17 years lower than the non-indigenous life expectancy (Pink & Allbon 2008).

However, it is noteworthy that within an alternative national Aboriginal health survey, Indigenous peoples in remote areas were more likely than Indigenous peoples living in non-remote areas to report: feelings of happiness and high energy levels; being calm, peaceful and full of life all or most of the time; and having a lot of energy (ABS 2006a, p. 3). This reported difference in self-perception of wellbeing, as associated with increased remoteness, might illustrate the relatedness of cultural wellbeing and Aboriginal connectedness to country, and more mainstream measures of health.

Associated with this nexus of historical and socioeconomic factors underscoring Aboriginal disadvantage is a raft of policy initiatives and instruments, which have had additional and continuing impact on their welfare. The literature on Aboriginal

disadvantage indicates that the additional impact of key policy responses must also be underscored prior to any theoretical or practical notions to resolve this issue. Section 2.3 identifies past government policies, which centred on assimilation, cultural extinguishment, land alienation and welfare dependence, and indicates their advertent or inadvertent contributory role to the present day level of disadvantage for Aboriginal people.

2.4 Tracing the causes of Aboriginal disadvantage

This section accounts for the advertent or inadvertent impact of key policy periods, generally cited as contributors towards contemporary Aboriginal disadvantage. An exhaustive review of policy is not within the scope of this thesis. Rather, this brief account aims to acknowledge the key policy initiatives relevant to understanding to today's assessments of Aboriginal disadvantage. The key assimilation and self-determinist contradictions that frame past government policy initiatives variously impact on Aboriginal peoples. The following discussion indicates how this contradiction links to the Aboriginal issues of land alienation and the partial resolve of this through Native Title, and the government welfare system, as related to the community development employment program (CDEP) initiative.

2.4.1 Evolving government policy approaches – assimilation and self-determination.

Armitage (1995) divides Australian policy towards Aboriginal people into four principle periods: (1) initial contact, 1788-1930; (2) protected status, 1860 -1930; (3) assimilation, 1930-1970; and (4) integration and self-management 1967 to present. Assimilation was seen as a means to remove the cultural aspects of difference held by Aboriginal people, so they might be embedded within mainstream Australian society and be more readily able to contribute towards the nation's development aspirations:

[A]ssimilation means in the view of all Australian governments that all Aborigines and part-Aborigines are expected eventually to attain the same manner of living as other Australians and to live as members of a single Australian community enjoying the same rights and privileges, accepting the same responsibilities, observing the

same customs and influenced by the same beliefs, hopes and loyalties as other Australians (Hasluck 1961, p. 1).

Assimilation was first formally identified as government policy in the 1930's for 'part Aborigines', and later in the 1950's for all others (Altman & Sanders 1991; Hyndman 1995 p. 307). Aboriginal groups argue the process of assimilation started when Europeans first settled on the continent, and as they remain the dominant society, is endured through to the present day (see Rowse 2005).

Essentially, the Australian government's assimilation policy sought to extinguish the very concept of Aboriginality, placing Aboriginal people in a grey area between mainstream society and their 40,000-year Aboriginal past. Specifically, assimilation policy encouraged a non-nomadic lifestyle, enforced a Western belief and education system, provided financial welfare to Aboriginal people, while discouraging the use of Aboriginal language, law and custom (see Hasluck 1961). Post the 1967 federal referendum, when Aboriginals were first granted voting rights and citizenship, amendments to Section 51 and 127 enabled the Australian government to pass laws specifically designed to assist Aboriginal peoples during this period of assimilation, and gain Aboriginal specific statistics to monitor the policy progress (see Gardiner-Garden 1997).

Assimilation strategies were embodied within the forcible separation of Indigenous children and parents. According to the Human Rights and Equal Opportunity Commission (2005, p. 4), 'The laws, policies and practices which separated Indigenous children from their families have contributed directly to the alienation of Indigenous societies today'. Subsequently, in the 1970s when formal assimilation strategies became regarded as paternalistic and arrogant, the government focus shifted towards a more pluralistic societal goal of integration (Hyndman 1995, p. 307). This era marked a radical change in Federal Government approaches to Aboriginal peoples (Altman & Sanders 1991, p. 5).

In 1972, a policy of 'self-determination' was introduced to replace assimilation (see Cowlshaw 1998). The policy sought to return the lost powers of Aboriginal people

to determine their own futures and ways of life (Whitlam 1973), to give Aboriginals the right to make decisions about matters affecting their lives. As Dodson (1994, p. 5) states, 'self-determination in this context provides people with the right to determine their political status, and pursue their own economic, social, and cultural development'. This early self-determination policy held the utopian view that Aboriginal people would use this newfound autonomy to adopt strategies themselves, which would bring them into the nation (Cowlshaw 1998). However, in the 1980's the government shifted back to a more conservative policy view of self-management (Altman & Sanders 1991). Policy shifts within this period meant Australian Aboriginals were included, as an integrationist strategy, within mainstream Australia's welfare state; including social security payments, unemployment benefits and specialized Aboriginal assistance programs (Altman & Sanders 1991).

Continuing on the self-management policy direction, in 1990, the Aboriginal and Torres Strait Islander Commission (ATSIC) was established as the government body through which Aboriginal and Torres Strait Islanders were provided some degree of political autonomy. However, in 2004, ATSIC was abolished after increasing doubts over its effectiveness and a range of corruption investigations. Commenting on ATSIC's demise, Sanders (2004) notes that, while there was little support for ATSIC's level of performance, there was support for a national body representative of Indigenous peoples interests. Sanders adds that ATSIC was successful in achieving: the political participation of Indigenous people, a national Indigenous voice increasingly independent of government, distinctive and appropriate programs, regionalism, working with States and Territories, and a distinctive Torres Strait arrangement. Presently, no single government body exists managed by Aboriginal and Torres Strait Islander peoples, or representing Aboriginal and Torres Strait Islanders. The management of Indigenous policy issues, programs and services is divided between the Federal Department of Families, Housing, Community Services and Indigenous Affairs (FHCSIA) and a range of federal and state government departments.

The Australian National University's Centre for Aboriginal Economic Policy Research (CAEPR) has long grappled with this contested space as a core focus of its research objectives through a series of research papers, working papers, discussion papers and research monographs. Reviewing the significant CAERP literature indicates that since the 1930's, and most notably with the 1972 self-determination policy, there has been a positive shift in the degree to which Aboriginal people are permitted to 'participate' in their own 'self-management'. There has been an increase in the valorisation of Aboriginality, i.e., self-identification with Aboriginal cultural characteristics, and acknowledgement that Aboriginal normative values are of equal value to the mainstream.

The notion that Aboriginal people were allowed to be a little more Aboriginal was implicit with each government policy change. However, while their levels of autonomous power increased through participation in government decision-making processes, as demonstrated through the formation of ATSIC, they were severely reduced through its closure.

Despite the contradictory assimilation and self-determinist policy approach to participation and self-management, arguably the present level of Aboriginal political autonomy is negligible.

The issue of governance also preoccupies Indigenous communities, organisations and leaders who have been bitterly disappointed with the political rhetoric and institutional failures of the Australian state over many decades. Indigenous groups are increasingly considering whether governance offers them an avenue to greater self-determination, when the official policy by that name did not, and while many remain so dependent on the state (Hunt, Smith, Garling & Sanders 2008, p. 5).

Their meaningful participation in political decision making essentially rests only at consultation, lobbying and policy commentary levels. This limited active and meaningful participation inevitably impacts negatively on the ability of Aboriginal people to advance as an autonomous and culturally distinct group of peoples among mainstream Australia. 'The cost in accepting the 'help' offered by governments, particularly in terms of loss of autonomy and pressure for particular

outcomes, is for many starting to outweigh the benefits' (Hunt et al. 2008, p. 348). This lack of autonomy and self-determination contributes further to the current level of disadvantage presently experienced by many Aboriginal people.

2.4.2 Land access: Mabo and the Native Title era

Access to land and welfare remain two key areas for Aboriginal autonomy and self-determination. Aboriginal wellbeing, and thus disadvantage in many instances correlates with land access and living or working on 'country' (see Dodson 1996; Ganesharajah 2009). 'Country' refers to the lands with which Indigenous people have a traditional attachment or relationship (Garnett & Sithole 2007). 'Land and water are the basis of Indigenous spirituality, law, culture, and economics' (Australian Human Rights Commission 2004, p. 11). In this regard, concepts, such as Native Title, are of relevance when reviewing the status of Aboriginal disadvantage (see Australian Human Rights Commission 2004). The United Nations Declaration on the Rights of Indigenous Peoples, as belatedly signed by the Australian federal government in 2009, states (Articles 25-32) the right for Indigenous peoples to maintain traditional connections to lands and territories (United Nations 2008). The Declaration further promotes that Indigenous peoples have the right to:

- Ownership of traditional lands and protection of such lands by the government.
- The establishment of protective systems to recognize indigenous lands.
- Conservation and protection of their environment.
- Measures relating to the storage of hazardous waste and military activities on Indigenous lands.
- Protection of traditional knowledge, cultural heritage and expression and intellectual property.
- Processes for development on Indigenous land (see United Nations 2008, pp. 10-12).

A variety of Australian policies grapple with emergent approaches to Aboriginal rights to land. For example, the *Native Title Act 1993* was born of the impact of past political flashpoints, including the Aboriginal Land Rights Act 1976 and the 1992 High Court of Australian Mabo decision. The 1992 Mabo decision essentially gave the Indigenous peoples of Australia the right to negotiate with the Crown, their rights and interests towards traditional lands based on the extinguishment of the concept 'terra nullius' (see Dodson 1996; Smith 1996). The legal right to negotiate, via the Native Title Act, offers Aboriginal people to be granted a specific set of rights and interests in relation to lands or waters. Subsequently, Indigenous Australians are able to pursue several other land-rights based agreements including (but not limited to) Indigenous Land Use Agreements (ILUA) (see The Conservation and Management Act (1984); and the Joint Management Agreement of the National Native Title Tribunal (2010)), and Indigenous Protected Areas (IPA) (see <http://www.environment.gov.au/indigenous/ipa/background.html>). The extent of these rights and interests is dependent upon the customary laws of the claimants prior to colonisation. It does not grant Aboriginal peoples with ownership of lands. However, as a listed Native Title Group, claimants can apply for an Indigenous Land Use Agreement (ILUA) under the Native Title Act 1993. ILUA's can provide Indigenous groups with some increase in autonomy over their traditional lands, though again – no level of outright ownership or control is given to claimants.

There are criticisms of the Native Title concept, stating that in its current form, it offers insufficient opportunities for Indigenous groups to expand their economic, social and cultural values and assets (see Pearson 2003; Australian Human Rights Commission 2004). There are concerns over its alternative ability to extinguish native title; resulting in the loss of recognition of traditional lands should a claimant group be unsuccessful (see Dodson 1997). Hence, other than mainstream pathways, the only way Australia's Indigenous people may legally gain ownership of traditional lands is through successful engagement with the Indigenous Land Corporation (ILC). Set up under the Aboriginal and Torres Strait Islanders Act 2005, the ILC facilitates Indigenous groups to acquire and manage land to achieve their economic, environmental and socio-cultural outcomes (see Indigenous Lands Council 2007).

There is little doubt traditional land access and ownership impact on the well being of Indigenous peoples, and therefore there is a relationship between its withdrawal and restrictions and the promotion of disadvantage (see Ganesharajah 2009). In light of the key component of land ownership and the more multifaceted implications of this issue in the UN Declaration on the Rights of Indigenous Peoples, it appears that the Australian policy for landownership and self-management currently falls short of this global agency's international policy guideline parameters. This constrained Australian land rights policy has significant 'best practice' implications for any 'way forward' interpretations conceived to address Aboriginal development disadvantage.

2.4.3 Community development employment program (CDEP)

Welfare is often regarded as a right of citizenship, where the government or state provides baseline financial income to those unable to support themselves (Kalisch 2000). In Australia, just prior to the instigation of the Aboriginal welfare state, in 1977 the government developed the CDEP scheme (see Altman, Gray & Levitus 2005), seen as a policy reaction to the prospects of the payment of large-scale unemployment benefit in regional Aboriginal communities (Altman & Sanders 1991). Due to a very limited labour market in remote Aboriginal communities, as compounded by the collapse of the remote and extensive pastoralists sector, CDEP was seen as a way to provide subsistence welfare to Aboriginal people, yet offer some of the benefits of employed occupation within their community (see Altman, Gray & Levitus 2005).

Altman and Sanders (1991) note that many Aboriginal people have remained outside the mainstream Australian economy, particularly in remote locations, i.e., remote from labour markets, where a disproportionate number of Aboriginal peoples live. CDEP, in this instance, transforms unemployment benefit entitlements into a grant to community councils for the purpose to carry out 'community works'. Community members are essentially employed by their council's to work for their unemployment benefits. CDEP was offered to communities in need of labour

stimulus. Those people not located near an active CDEP initiative would receive the more passive welfare payment of unemployment benefits.

By 2002, the CDEP scheme represented over one-quarter of the total number of Aboriginals in employment, and accounted for 13 per cent of the Indigenous working age population (Altman, Gray & Levitus 2005). The classification of CDEP as valid employment has a significant impact on Aboriginal unemployment rates, i.e., 23 per cent as apposed to 43 per cent should CDEP be considered welfare (Altman, Gray, & Levitus 2005). Similarly, this hypothetical figure would become more politically alarming as settlement remoteness increases, with unemployment rates increasing from 7.0 per cent to 75.7 per cent in very remote areas.

After numerous reviewing, the CDEP scheme is regarded on-balance as a successful initiative (Altman, Gray & Levitus 2005). This is because it aims to provide employment, training and enterprise support for Indigenous Australians. It seeks to build and maintain a strong, functional and sustainable socio-cultural and economic base for individuals and communities; and increase individual access to, and participation in, the mainstream labour market (Altman, Gray & Levitu 2005). CDEP reportedly generates positive social benefits for participants, including increasing individual, family and community well being, and aiding community development (Misko 2004; Altman, Gray & Levitus 2005). However, CDEP has been questioned for its tendency to enlist community responsibility for tasks otherwise maintained by local council, including housing maintenance, waste removal and other similar services (Altman, Gray & Levitus 2005).

Despite over 32 years of CDEP, Australia has established a highly centralized, single national welfare system, maintained outside Indigenous jurisdiction (Daly & Smith 2002, p. 9). According to Daly and Smith (2002), in 1974, as the seeds of Aboriginal welfare policy began to sprout, the Indigenous poverty rate was reported to be at 48 per cent. In the mid 1990's, it was estimated 55 per cent of Indigenous peoples received welfare payments as their main source of income. In 2001, 19.7 per cent of the Indigenous labour force was unemployed, with this figure reduced to 15.5 per

cent in 2006 (Biddle, Taylor & Yap 2008). While statistics vary regionally relative to variable levels of remoteness, in essence this brief welfare comparison reveals the apparent lack of positive impact CDEP has had on the overall level of Aboriginal welfare dependency. However, CDEP has had a greater impact elsewhere, and its 'facilitory' role in supporting EnCDD activities is noted within subsequent thesis chapters.

2.5 The pathway forward

The significant dependency on economic welfare (especially within remote regions) of Aboriginal people reaffirms the socio-economic notion of Aboriginal disadvantage. It highlights their reliance on government financial assistance for subsistence, which denotes structural disempowerment. Any attempt to improve Aboriginal socio-economic standards must acknowledge welfare reduction strategies, where Aboriginal people can (1) gain economic independence, and (2) do so with autonomy and self-determinism.

In 2009, Australia joined a pre-existing 143 national signatories giving overwhelming international support to the UN 'Declaration on the Right of Indigenous Peoples' as an overarching universal human rights instrument aiming to address the dire development realities of Indigenous people (see www.hreoc.gov.au/Social_Justice/declaration/declaration_QA_2009.html). In light of this international policy direction, the continuing high and often crisis level of Aboriginal community disadvantage suggest there is much to learn in Australia. Reflection throws light on how past policy worked to compound the assimilation, integration and welfare dependency characteristics of Aboriginal disadvantage.

A new Australian development policy direction that incorporates international understandings of the shared social, cultural economic and political characteristics of the Indigenous peoples of the world would be timely. Australia's ratification of the UN Human Rights of indigenous Peoples charter suggests any new policy initiatives, must engage with Aboriginal peoples' desire to maintain land ownership and access, and employ self-deterministic approaches to respond to the dire

development imperatives of particular Aboriginal communities located in the remote regions of Australia.

Chapter 3

Theorizing development: from economic growth to meaningful change

3.1 Introduction

The international development field provides multidisciplinary views to understand how contemporary Australian Aboriginal disadvantage and development imperatives sit within broader theoretical and applied discourse on development. Working in the field and engaged with the lived complexities faced by a particular disadvantaged community necessitates the review of a broad portfolio of ideas to understand and interpret the 'problem' of development. As a biological science graduate engaged in natural resource source enterprise initiatives and coming to the community development field in a practitioner role, the candidate recognised that engagement with the broad, specialist and evolving theory and practice of development was a necessary step to undertake this research. Engaging broadly with the literature emphasised the disparate nature of discursive power given to concepts from particular and privileged sub-fields within the field. This review chapter is divided into two main sections to capture evolving normative views on international development, and evolving critical and alternative post development views on endogenous community-driven development. This broad approach clarified the dilemmas the candidate experienced when situated between contrasting academic institutional and Aboriginal community views, practices and performance positions on development.

Section 3.2 traces the evolving and contentious nature of the field shifting from development narrowly envisaged through economic growth models to more multifaceted and complex models, and more recently inclusive and participatory approaches in pursuit of meaningful, grounded and sustainable development. Evolving and plural interpretations of the substantive development theory of Amartya Sen are core to this discursive shift. Normative discourse focuses on the prescriptive and 'one-size-fits-all' character of pervasive economic development visions with an 'exogenous' focus on the 'catch-up' challenge faced by the

developing nations. Exogenously determined prescriptions on key ideas, such as 'agency', 'capability', 'empowerment' and 'capacity' dominate normative discourse. Countervailing critical and post-colonial views highlight the limited historical success of normative views. They posit an alternative 'endogenous' focus to bring forth local socio-cultural and environmental specificities. Section 3.3 engages with alternative discourse on endogenous approaches, which argue for locally situated, self-directed and inclusive participatory means for the marginalized or disadvantaged to address the particular specificities of *their* development realities. Section 3.4 explores the relatedness of post development thinking on 'endogeneity' to Aboriginal disadvantage, and Section 3.5 concludes as to why an inclusive and participatory endogenous approach is conceived as the 'best fit' keystone to drive meaningful community development articulated through local interpretations of requisite individual and collective 'agency' and 'capability', 'empowerment' and 'capacity'.

3.2 Evolving exogenous views on international development

The complexities and frustrations of development have generated a voluminous literature, along with numerous institutions and organizations suggesting change and new directions (Fukuda-Parr, Lopes & Malik 2002). Sen (1999) explains that central to the exercise of development is overcoming many deprivations, destitution and oppression problems, including the persistence of poverty and unfulfilled elementary needs, the worsening threats to our environment, and to the sustainability of our economic and social lives. He notes that many deprivations can be observed in one form or another, in rich countries, as well as poor.

The richer countries too, often have deeply disadvantaged people, who lack basic opportunities of health care, or functional education, or gainful employment, or economic and social security. Even within very rich countries, sometimes the longevity of substantial groups is no higher than that in poor economies of the so-called third world (Sen, 1999, p. 15).

The veracity of this is all too evident in considering Australian Aboriginal disadvantage. Sen's holistic view affirms the value of international development to conceptualize and engage with Australian Aboriginal disadvantage and

development imperatives. After significant reluctance, Australia's signing in 2009 the UNDP's *Indigenous People's Human Rights Charter* was symbolic of national commitment to the development needs of this highly disadvantaged community. The public commitment has implications for assessments on the 'way forward' for national policy and the realisation of Aboriginal community aspirations and actions. This section clarifies how the legacy of past Australian policy strategies, as historically applied to address the national problem of Aboriginal development, link to key theoretical and practical assumptions driving the evolving 'meta-narrative' (Sumner & Tribe 2008) of international development.

The multifaceted concepts in *Development as Freedom* (Sen 1999) argue for the broadening of debate on theoretical, applied and critical understandings of the more complex nature of the individual and societal challenges for development. Sen's (1980, 1984, 1985, 1987, 1992, 1999) 'capability approach' emerged as the leading alternative to standard economic frameworks for thinking about poverty, inequality and human development (Clark 2005). Sen (1999) argues that 'individual agency' is ultimately central to these deprivations, but that individuals are inescapably qualified *and* constrained by the social, political and economic opportunities that are available. 'There is a deep complementarity between individual agency and social arrangements' (1999, p. xii). Hence, for Sen, 'development consists of the removal of various types of unfreedoms that leave people with little choice and little opportunity of exercising their reasoned agency' (p. xii). Sen's views resonate with the 'unfreedoms' and 'disempowerment' associated with the constrained agency and social, political and economic opportunities of contemporary Australian Aboriginal realities. Section 3.2 explains how prevailing historical approaches may have inadvertently contributed to the various 'unfreedoms', or disempowerment that left Aboriginal people with little choice and little opportunity to exercise *their* reasoned agency. The impact of this legacy makes this development challenge everyone's problem, not just the disadvantaged.

3.2.1 Unpacking the concept of development

The Aboriginal community realities discussed in Chapter 2 alludes to why the term 'development' and its conceptualization are recognised to have complex meanings, that are 'contested' and 'ambiguous' (Thomas 2004), and why it is now considered that the term has long suffered from 'over-simplification' of both the problem and prescription (Black 2007). Development, in its broadest context, describes the process of 'change' within certain environments, be they social, political, cultural, or economic (Sumner & Tribe 2008). The inference is 'good change' (Chambers 2004 cited in Sumner & Tribe 2008). However, defining what is 'good' over 'bad' change sparks further debate (Thomas 2004). Essentially, change is characterized as involving 'transmission' or 'transformation' processes in individuals, communities and nations.

Aspects of development change may encompass diverse societal dimensions including; economic, social, political, legal, institutionally structural, technological, environmental, religious, and cultural forms (Sumner & Tribe 2008). Sen (1999, pp. 4-10) alerts to how the mutually reinforcing interconnections between economic opportunities, political liberties, social powers, and the enabling conditions of good health, and basic education work to enable 'free' and 'sustainable agency'. Yet, social change theorist Wallerstein (1991) bemoans, 'Most often the processes of economic, political and socio-cultural development are discussed separately and studied in mutual isolation by different researchers, enhancing the illusion that there are three trajectories of change' (p. 264). Focusing on the shifts in development theory since the 1950s, Sumner and Tribe (2008, pp. 83-84) cite Willis's (2005) analytical work, which identifies the main focus of theory to encapsulate the key change ideas of: 'modernization', 'structural analysis', 'dependency theory', 'basic needs', 'neo-liberalism', and 'post development'. With the exception of post-development theory, all these key ideas emphasise the power attributed to the sub-field of economics.

Sumner and Tribe (2008, p. 84) note theories, such as structuralism, dependency and modernization, seek to be 'universal' and based on the idea of progress and

long-term processes. They note that alternative approaches, which relate to broader, grounded and applied aspects of development from the practitioner 'development community', have not been regarded as 'theories'. This hierarchy points to a Eurocentric and academic asymmetric power relationship. 'The gap between the two perspectives (that is, between an exclusive concentration on economic wealth and a broader focus in the lives we can lead) is a major issue in conceptualizing development' (Sen 1999, p. 14). Citing Sillitoe (1998), Rao and Walton (2004) argue thinking has arrived at an interesting crossroads: 'economists are grappling with models of how social and cultural factors shape human behaviour, and academic anthropologists, having grappled with these questions for a long time, are seeing the need to move beyond critique towards a more "facilitory" anthropology' (p. 3). The following discussions explore the background to these disparate positions.

Sumner and Tribes (2008, pp. 11-16) propose three working definitions related to evolving theory and instrumental focus, and the qualities and context of development change:

- I. A long-term process of structural and societal transformation.
- II. A short-to-medium term outcome of desirable targets (e.g., development policy, such as the UN *Millennium Development Goals* (see <http://www.un.org/millenniumgoals/>)).
- III. A dominant discourse of Western modernity.

The definitions articulate to the highly contested and evolving nature of knowledge as well as development positions, i.e., whose knowledge counts and in what context. Such ethical concerns emphasise the key issue of 'positionality' or 'situationality' (Sumner & Tribe 2008, p. 4) in framing particular assumptions.

'The notion of positionality implies that 'where we are located in the social structures as a whole and which institution we are in ... have effects on how we understand the world' (Hartsock 1987, p. 188). Situationality emphasizes the dialectic of 'emic' (insider) or 'etic' (outsider) positions on the realities in particular societies and places. Articulated to this positionality and situationality is Sen's

(1999) political idea: 'The valuing of freedom is not confined to one culture only, and the Western traditions are not the only one that prepare us for a freedom-based approach to social understanding' (p. 240). Sen's views articulates to emergent recognition of the role of culture in reproducing or alleviating poverty; as a shift from an individually oriented concept based on the universal principle of 'equality of opportunity' to a group oriented and grounded principle of 'equality of agency' (Rao & Walton 2004). However, the ramifications of this emergent and often politicised view of culture are weighed down by the legacy of past thinking.

3.2.2 International development: Evolving exogenous 'transmission-to-transformation' assumptions

Sen (1999, p. 122) asserts, 'it is the struggle to help remove these [unfreedom] barriers that is central to human development. But to be pursuing such a cause, it is necessary to question the systems, processes and instruments that have guided the development practice'. Hence, to understand development is to unpack how theoretical arguments articulate the shift from 'transmission' or 'transformation' assumptions (Fukuda-Par et al. 2002) about the character and quality of change.

A key point in development discourse began post World War II with a divisional taxonomy for nations as either 'developed' or 'underdeveloped' (Alacevich 2007). A tripartite taxonomy was applied to distinguish the new and recently independent postcolonial 'Third World' nations from the Western 'First World' and the 'Second World' Communist or Soviet nations (Alacevich 2007). There was considerable pressure to renew the economies of the Western-aligned First and Third World nations 'many of which were already on the path to decolonization' (Arizpe 2004, p. 166) and to politically strengthen the Western Alliance to countervail against the destabilizing political forces of the Communist Soviet Empire. The developing country research of Lewis (1955) laid the key theory for the pursuit of economic growth, employment, and a capital-intensive and productivity orientation (Arizpe 2004) with economic wealth creation as the core basis for development.

However, intrinsic in this economic model was the implicit assumption that that the cultural assumptions of Western European societies in terms of values, ethical and political checks and balances, symbolic representations, and civil society traditional organizations could be found elsewhere and would arise mechanically through the application of economic policies (Arizpe 2004, p. 166).

This Western economic development strategy was exemplified in a number of international organizations, such as United Nations in 1945 (formerly the League of Nations 1919 – 1943), the International Monetary Fund (IMF) and The World Bank. The ‘growth economics and wealth creation’ meta-narrative was theorized through ‘a range of path-dependent, long-term and structural and societal interventions conceived to promote economic growth and wealth creation’ (Sumner & Tribe 2008, p. 12) in which “‘backward’ countries would ‘catch-up’ with the industrialized world courtesy of aid and assistance’ (Black, 2007, p. 10). This logic exemplified a ‘transmission’ approach and an ‘exogenous motivation’ for change (Hirschman 1971 cited in Malik 2002, p. 56), as captured in Sumner and Tribe’s first long-term and structural oriented working definition for development.

Subsequent thinking began to recognize weaknesses in the transmission model: that analytic focus on crude and narrow economic determinants of development measures, such as ‘gross domestic product’ or ‘gross national product’, may hide more valuable information than they actually provide; and that patterns of capital accumulation were variable for each country reinforcing the need to adapt economic patterns for development on a case-by-case basis (Alacevich 2007). Resistance to the transmission approach encountered in the field raised the issue of ‘cultural readjustment’ (Arizpe 2004) as a real issue, helping to situate the individual in his social context. But under the logic of universalism, ‘economic and technical changes represent no more than one particular aspect of the general theme of cultural readjustment’ (Meynaud 1963 cited in Arizpe 2004, p. 171). Yet, complex political and economic institutional and societal factors, and rising levels of poverty thwarted the early successes of transmission-based development.

The optimism and intellectual excitement of the 1950s and 1960s was on the wane. The modest rates of growth achieved were being swallowed up by increases in population. The Limits to Growth (Meadows et al. 1972) had added to the gathering gloom by warning that the world risked running out of resources (Yusuf 2008, p. 17).

Despite recognition of the impact of socio-political complexity, rising levels of poverty and environmental concerns, the ongoing *'flight from culture* to theorize development was driven by 'the scientific desire to deal with hard, quantifiable "structural data"' (Arizpe 2004, p. 171). As a result, the development enterprise began to drift, and with this a hunger arose for practical solutions that the somewhat sterile and increasingly formal literature on economic growth was unable to satisfy (Yusuf 2008). 'A new generation of intellectuals in developing nations examining the failures and uneven effects of foreign-assisted modernization turned to the issue of culture as a way to emphasize 'endogenous' development' (Arizpe 2004, p. 171). Hence, agency concerns for a more 'instrumental' and 'situational approach' emerged (Sumner & Tribe 2008, p. 12).

The first *World Development Report* (World Bank 1978) was released, but 'its offerings were relatively meagre because the shelf of economic knowledge was not well stocked' (Yusuf 2008, p. 18). Hence, an army of country specific and comparative analytic expertise mobilized to search for 'practical solutions' and 'a situated focus' to more 'efficiently' address the economic issue of poverty (Yusuf 2008), assuming that quantified country-specific data gathering 'thickened the empirical content of development economics' (Yusuf 2008, p. 20). This shift articulates to the more focused 'short-to-medium term' and 'targeted poverty alleviation' characteristics of Sumner and Tribe's (2008) second working definition.

Raising economic growth rates and enhancing the 'capabilities' (Sen 1984) of the poor became the new primary 'welfare objectives' of the field of development economics (Yusuf 2008, p. 19). Wider economic measurements and 'quality of life' (Sen 1987; Dreze & Sen 1989; Nussbaum & Sen 1993) standards in a specific

economy were deemed to more *efficiently* address poverty and equity issues. This broader and prescriptive welfare and situational focus supported a targeted ‘basic needs approach’ (BNA) (Streeten et al. 1981). ‘[A]long with advances in theory and measurement of human capital, the concept of basic need mobilized strong support for education and health as ways of enhancing living conditions and improving earning capacity of the poor’ (Ranis 2004b, cited in Yusuf 2008, p. 22). For Yusuf (2008) embedding poverty was an important conceptual shift, which added both urgency and a moral ‘equity’ imperative – ‘growth acquired a human face’ (p. 21), but opinion began to move against a passive approach that assumes as long as there is growth, it will eventually ‘trickledown’ development benefits to the poor. Woolcock (2007) explains this welfare position and situational focus contributed to the binary division: academic theoreticians and non-academic ‘practical thinkers’ and ‘reflective doers’, which now characterises the twin streams of the field. The targeted, but humanist focus on poverty indicates the shift of goals away from pure analytic focus on economic growth and capital accumulation (Alacevich 2007) and attempts to capture cross-disciplinary views, such as, the fields of agriculture and anthropology and the applied views of practitioners (Sumner & Tribe 2008).

Dramatic international changes in the early 1990s framed a broader ‘human development’ concept. These changes included: the collapse of the Soviet Empire, and a subsequent more simplified ‘developed’ and ‘undeveloped’ framework for the diverse nations of the world; a rapidly expanding global economic market system (Stiglitz 2002; 2006); a rising wave of democratization and critical social movements promoting people-centred approaches (Korten 1980, 1984; UNDP 1990; Eade 1997); growing evidence of the multifaceted failings of the prevailing growth model; and rising civil society concern for societal and environmental ills (Hawken, Lovins & Hunter Lovins 1999; Korten 1999; Soberbaum 2000).

From a global institutional perspective, as of 1990, the human development concept was applied to a systematic study of global themes published in the *Human Development Reports* (HRD) (<<http://hrd.unpd.org>>). The idea of ‘empowerment’ was introduced in recognition that development is rarely a linear transition process,

but strategies must aim to facilitate transformation of society by identifying barriers and catalysts for change (Fukuda-Parr et al. 2002). The emergent 'transformation' aim was to advance the richness of human lives rather than the richness of the economy in which human beings live. The concern became acknowledging ways to enlarge people's choices over time within particular countries framed around key themes, i.e., social progress; economics, efficiency; equity; participation and freedom; sustainability; and human security. Subsequently, the HRD (UNDP 1993) was dedicated to the theme of 'participation' recognizing this 'as an essential element of human development' (p. 21).

This broadening of thinking led to an increase in international development organizations. Their pluralistic national political and economic development agendas meant they variously sought to facilitate global economic development, social progress, and human-rights equity through international and national development policy in diverse developing nation contexts. The UNDP *Millennium Development Goals* (MDGs) emerged as the advocacy and targeted approach, the second standpoint of the 'human development' meta-narrative. This interwoven political and economic development agenda is exemplified in the emergence of national agencies, such as, UK Department for International Development (DFID), Aus Aid, Asian Development Bank, Canadian International Development Agency, US Aid, African Development Bank, and NZAid. As a result, a conglomerate of organizations forms the 'international aid system' (Tvedt 2007), in which the social and human attributes, environmental, democratic and human rights' attributes become recognized in development (Black 2007).

Despite this broadening, rising critical and alternative views often derived from 'on-the-ground' practitioner experiences, support Sumner and Tribe's (2008) assertion of the contentious and ambiguous nature of the term 'development'. These views emphasise the need to address the specific positionality and situationality of particular peoples; that people living in particular geo-political circumstances have concerns for how this shapes their everyday lived realities; and hence, that their views matter. Such positions highlight Sumner and Tribe's third standpoint on

development, as essentially a Western and modernist theoretical discourse. Section 3.3 briefly engages with ideas that affirm the need to leverage endogenous and community-driven views in development agency.

3.3 Critical and post development theory

3.3.1 Leveraging endogenous and community-driven views

The discursive power of economic theory to frame the dominant and evolving thinking on economic, social and human attributes, environmental, and democratic and human rights in development theory and practice is noteworthy. Parallel to the evolution of this narrow approach, a number of critical and multidisciplinary positions have made contributions to the field. These critical and alternative positions articulate to Sumner and Tribe's (2008) third working definition of development as the dominant 'discourse' of Western modernity.

'Post-development' discourse further articulates to Sumner and Tribe's (2008) 'contextualising' notion of positionality and situationality, identifying this as the key challenge for the development field. Critical and multidisciplinary thinking drawn from postcolonial, postmodern and poststructuralist theory explores the notion that if development infers 'change', the assumption is that not all change is good, and moreover, 'bad' change and 'bad' outcomes can arise through the ethnocentric imposition of Western ideas of development upon the 'Third World'. Black (2007) notes that 'the 'benefits' that the 'Western world' passed-on through development often turn into false economies, largely because development, at a semantic level, is an artificial construct' (p. 8).

Johnson et al. (2000), note Hethne's (1985; 1990) *Three Worlds of Development* as pivotal in 'post-development' reactions heralding a call for egalitarian, participatory, ecological, self-reliant, and ethno-development strategies to address the failures of modernization and the imperial Western, or Eurocentric positions dominating the normative development model. Within 'the polyphony of voices' in this post-development community, writers such as Shiva (1988, 1991, 1992), Sachs (1992),

Escobar (1995) and Nandy (1998) are cited by Johnson et al. (2000) as key contributors from pluralistic intellectual and political positions noting that: 'it is striking how intellectuals, activists, practitioners and academics participated in a global debate' (p. 170).

From a post-development position, the early post-war development approaches to structural and societal transformation worked to establish a Western institutional, systemic and normative 'mode of thinking' and 'sources of practice':

The poor countries became the target of an endless number of programs and intervention that seemed inescapable and that ensured their control. Everything that was important in the social and economic life ... (their population, processes of capital accumulation, natural resources, agriculture, trade, administration, and cultural values, etc) became the object of explicit calculation by experts formed in new sciences developed for that purpose, and the subject of interventions designed by a vast array of newly formed institutions (Escobar 1998, p. 430).

Thus, critical and post-development work seeks to interrogate the power and authority of the normative political and economic assumptions of the Western capitalist industrial system, while promoting social justice and alternative social structures and practices (Johnson et al. 2000). The categorization of the 'Third World' as in need of 'Western'-style development implies this power disparity (Hobart 1993; Escobar 1995). Sardar (1999) explores how the tendency to promote 'Eurocentrism', shows how the power disparity power between 'the West' (i.e., the Anglo-Celtic countries, e.g., USA, UK, Canada, Australia and Western Europe) and 'the Rest' (Said 1978, 1993) is privileged. With recognition of this disparity means that a Western progress-oriented working definition becomes highly contested, problematic and understood as a political concept.

The need or desire to 'develop' infers an incomplete-state, or that something is in need of acquisition, and hence, the notion of 'underdevelopment' (Griffith 1969, cited in Johnson et al. 2000). This binary view infers a 'deficit' category for a society, and assumes a 'dependent' or paternalistic relationship between developed and developing nations. 'Dependency does not ... necessarily refer only to material

inequalities of power, but is framed by the prevailing discourses through which the global economic geography is understood and directed' (Johnson et al. 2000, p. 163). Burnell and Randall (2008, p. 29) cite Pieterse's (2000) imperialist idea that the dominant Western view of development 'is not just an elite preoccupation, but a universal aspiration'.

Post-development theory alerts to the notion that there may be merit in acknowledging 'difference' between societies, as opposed to 'underdevelopment'. Sadar (1999) notes, the absence of Westernized technology is often measured as 'underdevelopment', as opposed to 'difference'. Ferguson (1990) challenges Western-style development, e.g., the World Bank's failure to embrace the Lesotho's 'aboriginal' economy, and instead, disciplining it into a more Westernised economy (i.e., investing in roads, financing rural cattle markets) resulted in many of the development projects failure to achieve stated objectives. Despite these failings, by defining the country as underdeveloped, the bank's involvement is deemed as warranted. Institutional self-interest, according to Ferguson (1990), meant the Lesotho economy was viewed in a particular way, and particular action taken because of the specific self-interested framework within which they operate. Similarly focusing on African examples, writers, such as Sirolli (1995) and Easterly (2001, 2006) critically analyse the failings and limitations of Western political and economic self-interested and interventionist ideas.

Post-development discourse argues that an assumed Western and hierarchical order for development change infers the superiority of one group over another. Those who construct this 'progressive' Western discourse of development are driven by the codifying elements of an 'inferiority-superiority dichotomy' (Sumner & Tribe 2008, p. 15), in which 'modernity' from the North is aligned with 'superiority', which is imposed on the 'inferior' South. The logic of this inferior-superior dichotomy derives from placing values on particular assets, which the South does not have, using the socially constructed discourse from the north. This ethnocentric logic infers the South to be inferior, despite having many 'traditional' or non-modern/Western approaches to society (e.g., medicine and farming practices)

(Sumner & Tribe 2008) that historically served them well. However, critiques of post development theory claim it celebrates severe deprivation, romances over 'noble savages' and assumes all Southern social movements are 'emancipatory' (Pieterse 2000; Sumner & Tribe 2008). These critical views on the ethnocentric and political nature of codifying 'north-south', 'inferior-superior', 'developed and undeveloped' rhetoric have relevance for the rhetorical codifying of sub-national groups within nations, i.e., the Indigenous peoples in both developed and developing nation contexts.

Referring to the economic growth assumptions of normative development discourse as the 'conventional wisdom', Korten (2005a, 2000b) notes emergent recognition of a parallel 'alternative wisdom', which he traces back to the Club of Rome's *Limits to Growth* (Meadows et al. 1972) and the ecological economic works (Daly 1973, 1977) that challenge economic growth theory as *the* model for development. Korten (2005) assert conventional wisdom represents an ideology, not a science with regard to its theorizing of issues, such as sustainable lifestyles, poverty, environmental problems, population, economic management, employment, trade, and markets and governments: 'Indeed, the conventional wisdom maybe the greatest barrier we face to progress towards sustainability' (p. 69). Similarly, citing Gailbraith's (1997) rhetoric, Marglin (2009) argues for economics to be recognized as cultural theory. Noting the contradictory nature of discursive positions, Marglin asserts that 'Sen (2005) favours cultural diversity for the enrichment it offers, but only to the extent that it is freely chosen as possible by the persons involved' (see Sen 2005, p. 150), while at the same time: 'Sen argues for a very specific language of intervention in the guiding of universal principles', and that the principles default to the Western privilege of individual over community freedom' (Marglin 2009, p. 296).

The critical concern to leverage culture links to Rao & Walton's (2004) notion that development thinking is at an interesting crossroads between: the visions of economists, who are grappling with normative models of how social and cultural factors shape human behaviour; and anthropologists, who having grappled with

these questions for a long time see the need to move beyond critique towards a more inclusive and participatory approach to facilitate the deliberative struggle for meaningful and situated ideas about development. The assumptions of cultural pluralism of alternate wisdom articulate to Rao and Walton's (2004) realisation of the pivotal role of culture to reproduce or alleviate poverty link to a shift from an individually based and universal principle of 'equality of opportunity' to a group-based diversity principle of 'equality of agency'. These critical and alternative views and shifts alert to the privileged Western, universalist, and economic cultural assumptions of normative international development. They point to emergent recognition that for development to be 'meaningful' the determination of this lies within the specific value positions and situated realities of those seeking or needing development change.

The notion of meaningful with development links to the idea of 'social capital', which Grootaert (1998) argues is the glue that holds societies together and without which there can be no economic growth, or human well-being. The OECD (2002) defines social capital as the norms and social relations embedded in the social structures of societies that enables people to co-ordinate action to achieve desired goals. The idea of embedded character of social capital in a society alerts to the potentially 'meaningless' and 'placeless' nature of exogenously determined development.

Although the notion of social capital at a community level may share elements with what may be considered cultural aspects of a community, it is distinct in that it seeks to capture types of social investment. Nonetheless, social capital may provide a slant to the understanding of communities that overlaps with the notion of culture (Mignone & Henley 2009, p. 128).

These views affirm the interrelated and overlapping relationship between culture and social capital in a society. Levels of social capital are reflected in 'the levels of trust, informal social contracts, and community and political participation' (OECD 2002, p. 6). They begin to account for the high level of failure of exogenously determined development. Thus OECD (2002) acknowledges social capital has policy

implications across key governance areas, such as health, education, local economic development, immigration, crime prevention and many other social policy fields.

The interwoven issues of trust, participation, reciprocity and shared values and practices underscore the 'meaningful' character of social relations in a community, and hence, the overlapping and interactive relationship between social and cultural investment and capital. Pertinent to the Australian Aboriginal focus of this thesis, the Australian Bureau of Statistics (2004) contends that social capital may help to mitigate the effects of social and economic disadvantage. The assumption is that social capital enables people to co-ordinate action to achieve desired goals. Dahal and Adhikari (2008) alert to how the bonding, bridging and linking aspects of social capital articulate to community action for development and call for greater acknowledgment of the multi-faceted aspects of social capital.

This review identifies how the contentious and ambiguous character of development discourse articulates to evolving normative, and critical and alternative accounts for the 'positional' and 'situational' development realities of peoples, national and sub-national. The diverse views variously account for the plural positions on the political, economic and socio-cultural dimensions to particular development imperatives and agency prescriptions. They indicate: growing support to leverage human capabilities, as mobilized through inclusion and participation in the process of development, the need to account for the positionality and situationality of communities, and recognition that development objectives cannot be established from the outside. Section 3.3 considers the implications of these views for the development imperatives of Australian Aboriginals

3.4 Post development's relatedness to Aboriginal disadvantage

Recognition of the failings of Western narrowly framed, short-term, targeted and modernist approaches is significant for thinking about Australian Aboriginal development imperatives and ways to address these. Despite this recognition and the broadening and evolving character of theory, the investment, often

enforcement of normative and paternalist governance and prescriptive interventions means that Australian Aboriginals by-and-large continue to endure a disadvantaged socio-political environment. Despite the intellectual forging of an alternative body of knowledge and pathways to actualise meaningful development change for communities, developed countries, such as Australia, still struggle to grasp with the sub-national issue of addressing Indigenous disadvantage in a more equitable manner.

The asymmetry of political power given to exogenous, prescriptive and enforced determinations of the agency needed to address sub-national development imperatives is no more evident than through observation of the 2007 Northern Territory National Emergency Response (aka 'the intervention'). As an attempt to address child sexual abuse claims within regional Aboriginal communities throughout the Northern territory (see BIPACSA 2007), the Australian Federal Government utilized 600 soldiers and members of the Australian defence-force to enforce changes to legislation regarding welfare, law enforcement, and land tenure. Despite BIPACSA (2007) making a broad range of recommendations to tackle the issue of child abuse, including its emphasis on participation and equitable means of engagement (see BIPACSA, 2007, pp. 50-56), the 'Intervention' implemented a minimal number of recommendations (2 out of 97). The nine measures undertaken within the Northern Territory National Emergency Response Act 2007 (see Altman & Hinkson 2007) included:

- Deployment of additional police into communities
- Restrict alcohol access
- Filter pornography
- Amend the Native Title Act 1993 – compulsory acquisitions of townships currently under the titles provisions
- Inject Commonwealth funding for provisions of community services
- Remove customary law and cultural practice considerations from bail applications

- Suspend the permit system – removal of the communities’ control over who may enter their country
- Quarantining portions welfare benefits of individuals within the target communities, and all benefits of those found guilty of child neglect
- Abolition of the CDEP (welfare program).

The authority of the Intervention believed the affluence of mainstream Australia can be replicated for remote Aboriginal Australia, a radical plan to fundamentally transform kin-based societies to a market-based orientation (Altman & Hinkson 2007). This assimilation privileges the narrow cultural assumptions of neo-liberal economics and adopts a ‘transmission’ development model for agency to implement the requisite change. Influenced by highly contentious notions (as driven by dominant and powerful policy circles), the Intervention assumes that the last three decades of citizenship entitlements of Aboriginal people has resulted in ‘detrimental impacts’, that group ownership of land inhibits individual incentive to be entrepreneurial, and aspirations to material accumulation and home ownership (Altman & Hinkson 2007).

Such is the degree to which these actions contradict the lessons of the last two decades and recommendations within the international development field, it is as if the comprehensive works of Sen et al. and diverse ‘on-the-ground’ experiences of development practitioners might not actually exist. Further, the observations of a senior UN Special Rapporteur on Indigenous Rights, the United Nations found the government Intervention measures ‘discriminatory’ and reflected the ‘entrenched racism in Australia’ (Anaya 2009). As a signatory of the *UN Rights of Indigenous Peoples Charter*, Australia acknowledges its human rights obligations. However, to address issues of extreme Indigenous disadvantage, Australia must do so with respect to the right to self-determination and be free from elements of racism and indignity (Anaya 2009). National Indigenous development policy and practice must acknowledge the situational and positional dimensions to the disadvantage. ‘These measures overtly discriminate against Aboriginal peoples, infringe their right of self-determination and stigmatize already stigmatized communities’ (Anaya 2009, p. 1).

Ironically, the very report that influenced the formulation of the government's 'intervention', the *Little Children Are Sacred Report* (BIPACSA 2007) clearly advises against forceful intervention and seeks radical change in the way government and non-government organizations consult, engage with and support Aboriginal people (BIPACSA 2007, p. 50). Among its rules of engagement, the report highlights nine key principles for this change:

1. Improve government service provision to Aboriginal people
2. Take language and cultural 'world view' seriously
3. Effective and ongoing consultation and engagement
4. Local focus and recognition of diversity
5. Community-based and community-owned initiatives
6. Recognition and respect of Aboriginal law and empowerment and respect of Aboriginal people
7. Balanced gender and family, social or skin group representation
8. Adequate and ongoing support and resources
9. Ongoing monitoring and evaluation (BIPACSA 2007, pp. 50-56).

Despite the considerable body of knowledge on development, the continuing reluctance of external agencies to fully adopt alternative development pathways when interacting with Aboriginal groups reinforces the need to review and account for the theory underpinning alternative self-development strategies. The hypothesis of self-development theory is that the targeted goal of development achievable through 'transformational' change is likely to contribute to more meaningful outcomes than the change enacted through paternalistic and superimposed transmission strategies.

3.5 Evolving views on endogenous community driven development

3.5.1 An alternative and meaningful concept of development

Fuelled by deeper understanding of the issue of the situationality and positionality of the individuals or collectives seeking to engage *their* 'reasoned agency', there is a clear need to explore the logic of alternative development conceptual frameworks

and agency strategies, especially within the context of Aboriginal disadvantage in remote Western Australia. The interrelated theories of 'meaningful development', and indeed, 'endogenous development' and 'community driven development' posit that the wants, desires and capability of the actor(s) should drive the development process and outcomes, which are directly shaped by the situational and positional factors of their existence and surrounding environment(s).

The notion of 'meaningful' within the alternative framework derives from the view that the processes driving key development objectives be locally shaped and targeted, making the outcomes of direct value to the actor(s) involved, not shaped and targeted according to exogenous socio-cultural norms, or political pressures. The qualifying 'meaningful' notion shifts focus to the 'endogenous' cultural character of development. The literature affirms the value to explore Sen's (1999) vital idea of an actor's 'reasoned agency', and individual and collective aspirations (wants, desires and capability) from an endogenous point of view. The next section dissects the core development concepts that make the pursuit of meaningful development from an endogenous perspective the salient issue.

3.5.2 An endogenous approach to development

Inferring the value of local specificity, 'endogeneity' refers to the property that a variable is determined within a model or geographical system (Johnston & Gregory 2009, p. 192). It is highly related to the philosophy of 'local knowledge', where knowledge is geographically and historically bound through the local conditions of its manufacture (see Geertz 1983). The combination of local knowledge, ideology and the influencing environment form the basis of the 'endogenous' viewpoint. Hence, endogenous development seeks to utilize local human agency, capability and resources to interpret and drive the development processes. Endogenous development is idealized as locally determined, producing high levels of retained benefits within local economies, respectful of local values.

Alternatively, exogenous development is transplanted into particular localities and externally determined, exports the process of development from the region, and

'tramples' over local values' (Slee 1993, p. 1). The practice of endogenous development transforms culture (and local knowledge) into an 'asset' (Arizpe 2004, p. 171), using local cultural values to subjectively drive determined outputs. Endogenous development inadvertently facilitates aspects of ethnodevelopment, or 'internal colonialism' (Azripe 2004). Arizpe adds that disadvantaged groups, while using characteristically localized culture to drive development processes, may also choose to incorporate foreign, or 'new', socio-cultural traits into their lives under their own terms, i.e., selectively engage in economic capitalist values and activities whilst maintaining select and local socio-culture and environmental values and practices.

This endogenous focus to utilize local assets, wants, desires, and capability to drive and direct the development process seeks to reduce a disempowering reliance on exogenous experts. Experts are part of the failure of many development initiatives, as internal knowledge that allows people to design, implement and evaluate is devalued with privileged focus given to 'expert' knowledge (Laurie, Andolina & Radcliffe 2005). Edwards' (1989) review of the 'expert driven donor assistance' paradigm voices concern for the privileging of exogenous expert knowledge: 'a system of education and training, which relies on experts will never be able to deliver change ... because the attitudes of the expert prevent people from thinking for themselves' (p. 119). This concern necessitate reflection on why thinking for one's self is core to the individual and collective agency and capability component to human development.

Endogenous development was acknowledged in the 'peoples participation' thematic focus within the United Nations 1993 *Human Development Report* (<<http://hdr.undp.org/en/reports/global/hdr1993/>>). Central to the report's debate was the examination of the degree to which people participate in the events and processes that shape their lives. The report sought to promote the means of participation through strategies such as: people-friendly markets, decentralized governance and community organizations, and policy suggestions to address increasing global unemployment rates. The report clarifies participation as a

process, fuelled by (access to) decision-making power, undertaken by individuals or collectives, demanding increased control, influence and empowerment; in economic, social and political terms (UNDP 1993).

The 'agency' aspect of participation supports an endogenous theory through the inclusion of 'personal fulfilment' (UNDP 1993, p. 22) as a primary motivation; where active participation that allows people to realize their full potential and contribute to society is a key objective. The report highlights the significant role of social and cultural participation, stating that all peoples and all communities have the right to evolve their culture as they see fit; essentially, leveraging the endogenous viewpoint. '[I]t is only in a democratic environment that people can derive full satisfaction from work and from the perception that they are making a valuable contribution to development' (UNDP 1993, p. 22). However, an all-too-often exogenous, paternalistic and intervention tendency towards cultural and linguistic homogenization, and clashes with inflexible systems mean that development initiatives often house 'the reality of continuing exclusion' (UNDP 1993, p. 1). This alerts to the prevailing exclusionary and interventionist approaches of Australian national governance policies towards Australian Aboriginals, past and present.

Sen (2009, p. 249) asserts that ideally 'development is fundamentally an empowering process'. Through the enactment of endogenous participatory and community driven agency, the aim is to empower individuals and collectives, and to increase their range of life choices (UNDP 1993), or their agency freedoms and opportunities. This empowering choice and action strategy targets investment in human agency and capability (Sen & Nussbaum 1993; Sen 1999), but endogenous development goes further to utilize internal community/individual capability over external expert human capital. Sen (2009) warns, 'the capability approach is a general approach, focusing on information on individual advantages, judged in terms of opportunity, rather than a specific 'design' for how a society should be organized' (p. 232). He affirms that the capability perspective is inescapably concerned with the plurality of different features of our lives and concerns, that the various attainments in human functioning that we may value are very diverse,

varying from being well nourished, or avoiding premature mortality, to taking part in the life of the community, and developing the skill to pursue plans and ambitions: 'Indeed, it proposes a serious departure from concentrating on the *means* of living to the *actual opportunities* of living' (Sen 2009, p. 233). In the case of remotely located Aboriginals communities, shifting capability to the actual opportunities of living emphasizes the situated and positional character of what a particular actor(s) value and desire, and local evaluations of their capability to do the things he or she has reason to value.

3.5.3 The development concept of agency

For renown social cognitive theoretician, Bandura (2005) 'human agency' has several core features: intentionality, which includes action plans and strategies for realizing them; forethought, which involves the temporal extension of agency including not just future-directed plans, but also the setting of goals and the anticipation of likely outcomes of prospective actions to guide and motivate their efforts. Bandura's (2005) notion of agency emphasises that 'Visualized futures serve as current guides and motivators of behaviour' (p. 10). He notes that agents are also self-regulators:

They adopt personal standards, and monitor and regulate their actions by self-reactive influence. They do things that give them satisfaction and a sense of self worth and refrain from actions that bring self-censure. People are not only agents of action. They are self-examiners of their own functioning. Through functional self-awareness they reflect on their personal efficacy, the soundness of their thoughts and actions, the meaning of their pursuits, and make corrective adjustment if necessary (p. 10).

For Bandura (2005), human functioning is rooted in social systems and so personal agency operates within a broad network of socio-structural influences. 'In these agentic transactions, people create social systems to organize, guide and regulate human activities. The practices of social systems, in turn, impose constraints and provide resources and opportunity structures for personal development and functioning' (p. 10).

Bandura's views affirm the saliency of local social and cultural capital to drive an endogenous approach to development. 'The capacity to act as an agent implies that the actor is able to envisage alternative paths of action, decide among them, and take action to advance the chosen path as an individual or collectively with others' (Petesch, Smulovitz & Walton 2005, p. 42). Discussing the relevance of agency from an endogenous view, Rao and Walton (2004, p. 1) argue that 'equality of agency' is of greater benefit than 'equality of opportunity'. Affirming the vital role of local culture in shaping local agency, they explain that equality of opportunity acts to promote a homogenized view of agency, whereas equality of agency leverages pluralist views. Sen (2009) concurs with this argument. The implication is that the localized resources available to the local actor are valuable so leveraging endogenous agency has greater meaningful and motivational potential for individual and collective actors over equal (and identical), but exogenously determined, and hence, too-often meaningless range of resources and opportunities.

Differentiating between 'equality of agency' and 'equality of opportunity' is pertinent to assessments of the Australian government's exogenously conceived desire to 'close the gap' and reach a demographic point of statistical equality for mainstream and Indigenous Australians alike. Similar mainstream equity of opportunity assumptions apply to Federal government support for mining magnate Andrew Forrest's Covenant to create mining sector employment of 50,000 jobs for Aboriginals within two years (Shanahan 2008). These ideas caution against determinist views of Indigenous development as simply involving the pursuit of equality of opportunity, and instead warrant initiatives to increase the opportunity and freedom of agency of all Indigenous Australians. While the Australian government's desire to improve the fundamental health and living standards for Aboriginal people is commendable, writers, such as Altman (2009) critique the goal of statistical equality and call for local ideology (wants, desires and capability) to influence and drive development initiatives for Aboriginal people. These critical and alternative views on human agency and capability, coupled with the high cost of

investment lessons from the international field, indicate that endogeneity in agency an appropriate method to engage with Aboriginal development.

These ideas affirm Sen's (1999) view of agency as freedom, and that development seeks to reduce unfreedoms and replace them with economic, social and political freedoms. The exercise of freedom is mediated by values, and these values are influenced by 'public discussions, social interactions, and overall participatory freedoms' (p. 9). Through an endogenous deliberation process, freedoms emerge to become particular individual and collective 'reasoned freedoms', where local situational and positional forces drive the value subsets used to shape freedoms. This deliberative and generative reasoning process translates to endogenous driven reasoned agency. Thus, for theoreticians, such as Sen (1999, 2004), Appadurai (2004), Arizpe (2004), and Escobar (1995, 2000, 2006, 2008), expanding and leveraging the reasoned agency of the marginalized should be the core focus for development practitioners.

This literature review affirms endogenous notions of development vital to leverage equity of agency within a holistically conceived sphere of Aboriginal development. The power disparities between exogenous and endogenous views have implications for the 'freedom' and 'unfreedom' issues of the 'enabling environment' for development in a specific remote geographic Aboriginal community. Exogenous approaches to the 'enabling environment' prioritise normative views on administrative, technological, political, economic, socio-cultural and stakeholder factors (Lusthaus, Anderson & Murphy 1995) as *the* means to effectively and efficiently support groups and individuals. Alternatively arguing for 'indigeneity' as a socio-cultural, political and economic tool for development, Andreasson (2007, p. 1) states: 'Moving beyond the confines of orthodox development requires a genuinely communal effort to re-imagine and reinvent goals and aspirations for a better future'. Andreasson's South African case study posits the merits of an inclusive and pluralist 'community-driven' approach to mobilise an endogenous development paradigm direction. For Andreasson, Indigeneity shifts focus to a particular community's self-identification of the agency, freedom opportunities and its

constraints, and hence, shifts primary emphasis to the views of local individuals and groups to conceptualize the local enabling environment, its values, knowledge, resources and capabilities. Similarly with regard for Australian Aboriginal community development, Hunt (2005) draws attention to the embedded and systemic nature of the local enabling environment calling for increased recognition of the impact of local socio-cultural factors, the 'soft' side of the local enabling environment.

3.5.4 Endogenous facilitated community driven development

The ability for individuals and communities to exercise control over decision-making activities and governance is vital to the endogenous character of participatory processes. Once a subjectively-desirable degree of individual reasoned agency has been acquired, people must be able to act as a collective, using their individual agency to influence community level development initiatives, classified as at the micro 'enabling environment' level. This micro-level of individual agency translates to collective governance and the decision-making around such issues that shape peoples' day-to-day lives. For Aboriginal communities, collective governance and decision-making issues may include aspects of native title, housing, culturally appropriate education, and employment, albeit these community agency issues also articulate to the exogenous instigated factors, such as policy, legislation and finance, which make up the meso- and macro-level enabling environments. The term 'community-driven development' (CDD) best describes the variable internal processes where collective reasoned agency is exercised.

The World Bank has invested heavily in institutionally facilitated CDD as a means to empower local community groups, by giving direct control to the community of planning decisions and investment resources, through highly participatory methodologies (World Bank 2006; Helling, Serrano & Warren 2005; Mansuri & Rao 2004). CDD is increasingly used to help 'build bridges between the state and its citizens', and 'to strengthen social cohesion between varying social groups' (World Bank 2006, p. 6). Here CDD is stated as a framework for embedding local empowerment initiatives within broader processes of change by integrating local

investment programs with policy and institutional reform. This focus on endogenous management within CDD initiatives signifies a shift in power arrangements, increasing the 'voice' and 'autonomy' of the marginalized (World Bank 2006).

The decentralized decision-making and governance assumptions of CDD are of direct relevance to Australian Aboriginals, particularly those located in regional and remote locations, as they are grossly under represented in the political decision-making processes that shape and determine their agency freedoms and opportunities. Conventionally, the power disparity of exogenous development policy and decision-making constrains community driven deliberation of culturally appropriate and meaningful development agency. The centralized and interventionist character of exogenous political decision making for Aboriginal people is cited as a major contributor of the characteristic 'failed state' of remote Aboriginal Australia (Chaney 2009). CDD can engage community members in decision-making, set precedents for participatory decision-making, and subsequently increase community participation in their governance (World Bank 2006). It can support and be supported by decentralization, increasing the demand for effective decentralization through the strengthening of local capacities (World Bank 2006). The core capability assumption of CDD is that the marginalized, disadvantaged and disempowered need to simply 'get on with it' and not rely on centralized policy decisions to support their locally specific endogenous, situational and positional development needs wants and desires.

Distinct from 'institutionally facilitated' CDD (see Helling, Serrano & Warren 2005), a 'grass roots' or 'bottom up' notion of CDD is planned, designed, facilitated and evaluated by the community, with no formal (relationship) reliance on exogenous resources (Escobar 2006), actors engage their reasoned agency and initiate endogenous development initiatives. Such CDD examples may be smaller components of an exogenous development initiative that contribute towards its goals, or an endogenous development initiative that stands alone from any externally facilitated initiatives. Support for the notion of 'endogenously facilitated

CDD' (EnCDD) does not infer superiority over exogenously facilitated CDD. Rather it acknowledges that there may be a development process and outcome difference depending on who is fundamentally driving the initiative. Escobar (2006) states that a plurality of development styles, driven by social groups and communities are beneficial to address the impositions of enforced cultural norms and inequalities of social power. Calling for the acceptance of 'politically enriched difference' and 'Otherness', Escobar (2006, p. 11) argues that increasingly, more people are demanding the right to their own cultures, ecologies and economies, that this can no longer be denied as part of our modern social world, nor easily accommodated into standard liberal or neo-liberal principles. EnCDD seeks to leverage 'Otherness' and politically enriched difference.

Powell (2006) links a locally applied notion of EnCDD to the desire of Indigenous social movements to influence the process of decentralization and gain control over various aspects of governance, economic growth, cultural projects, and natural resources. This 'experiment with alternative strategies' seeks to restructure the production of power to advance democracy and sovereignty for Indigenous groups, creating new modes of economic, ecological and cultural development (Powell 2006). Sen's (1999, 2006, 2009) evolving ideas of reasoned agency and the human capability approach concurs with the central human rights-based arguments for an Indigenous EnCDD movement. The movement articulates to Escobar's (2006) desire to leverage politically enriched difference, and Powell's (2006) assertion of how grass-roots social movements might fill some of the voids created by an externally centralized governance system, affirming the local, self-determined and rights-based components of an EnCDD strategy. The other key factor, i.e., the 'empowerment' of the participants and building internal individual and collective capacities, work to drive the deliberation and action agency processes to meaningfully determine the character and direction for community development.

3.5.5 The development concept of empowerment

'Empowerment' is a widely used term within many strands of science (Thomas & Velthouse 1990), and with its ubiquitous use has developed an associated

vagueness in meaning (Pettersen & Solbakken 1998). This 'ubiquitous application' means the term has become deflated in value and means almost nothing (Corbett & Keller 2005). Research on the topic largely developed from the realms of participatory research, more commonly implemented throughout the Third World (Pettersen & Solbakken 1998). Conger and Kanungo (1988) recommended the use of 'empowerment' to describe a process, specifically a motivational process. They were interested to research the input and output effects of interventionist processes, assuming this would allow studying the empowering effects of different interventions to explicitly identify what those effects are. Thomas and Velthouse (1990) theorized the outcomes of the empowerment process, or the connection between the action (empowerment) and the reaction (effects of empowerment). If empowerment is the process, then an increase in effort-performance expectancies (Conger & Kanungo 1988), or feelings of 'self-efficacy' (Bandura 1977) results.

Moving beyond empowerment as a 'transmission' process (Ergeneli, Ari & Metin 2007), a cognitive view emphasizes the role of open communication, emotional support to decrease stress and anxiety, and shifts concerns to how these factors inspire goals to increase loyalty and participation. In this communication and relationship view, empowerment aims to increase the subjects' feelings of self-efficacy (Hardy & O'Sullivan 1998). The term is used to describe the process and outcome of enhancing the capacity of either an individual or collective to make choices, and transform those choices into desired actions and outcomes (Giddens 1984; Alsop & Heinsohn 2005). Hence, the term refers broadly to the expansion of freedom of choice and action (Narayan 2002).

The idea of empowerment as the aim to influence the actions of others is of relevance to the endogenous and advocacy focus of this research, as those who possess power may have the ability to keep certain issues from surfacing in the political agenda (Pettersen & Solbakken 1998). An 'experimental' endogenous approach to Indigenous empowerment involves a shift in the powerless becoming more powerful, allowing them to bring certain issues to the surface, to 'give voice' to their political, social and cultural reasoned agency agenda. Mobilising this type

power shift is a vital issue for leveraging equity of agency for the marginalised and disadvantaged. For Mohan and Stokke (2000), the focus on empowerment within development institutions stems from a shift away from 'holistic theorization' towards more 'empirically informed' and 'inductive' and grounded approaches' to research and practice. This shift moves focus from development theory to development studies with emphasis on the 'local' level of empowerment, and hence, a further concern for the issue of 'local knowledge' (Mohan & Stokke 2000).

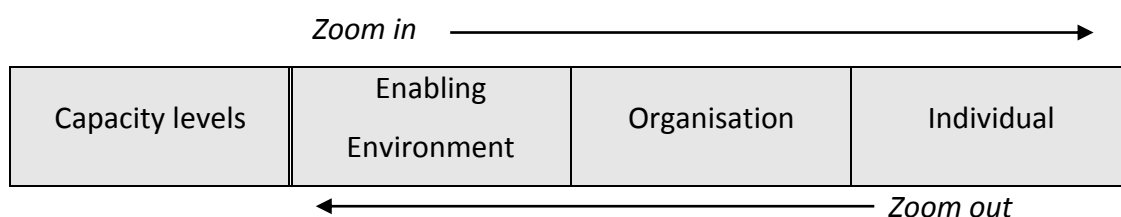
Empowerment can reflect a positive shift in consciousness involving a movement towards individual and collective control, self-confidence and the right to make decisions and determine choice (Morgan 1997): the 'capacity to aspire' (Appadurai 2004). This idea is exemplified in Holte-McKenzie, Forde and Theobald's (2006) Kenyan youth study describing the process to develop a participatory monitoring and evaluation strategy. Through providing culturally, disempowered girls with the opportunity to participate in reflective self-evaluation the process was deemed as 'empowering' as it increased their levels of participation through associated capacity building activities. The participation process housed elements of self-determination, governance and overall self-assertion; all identified as key elements of the empowerment process. Similarly, in a study assessing the relationship between female empowerment and household nutritional status, Godoy et al. 2006 refers to empowerment as an expansion of choice and the ability to shape ones' life. Additional complexities and influential process factors are involved in increasing empowerment beyond simple notions of freedom of choice, or the transmission of power from powerful to powerless.

This review affirms the need to recognize and incorporate multifaceted empowerment processes within a participatory EnCDD framework: as people become increasingly involved in shaping their own lives the empowerment goal is to shift power to some degree from the powerful to the powerless; to 'give voice' to the particularities of local and situated human agency; to deliberate and identify the capability opportunity and freedom of individuals and collectives to make choices and carry out actions that ultimately affect their lives, in the present and

the future. Similarly, more complex and multifaceted ideas about human agency, motivation and social change, highlight the more complex nature of 'self-efficacy' and indicates that varying expectations of personal efficacy will determine whether coping behaviour will be initiated, how much effort will be expended, and for how long. These ideas underscore an endogenous notion of the capacity for development.

3.5.6 The capacity for development

The United Nations Development Program promoted 'capacity development' as the key to poverty alleviation (Fukuda-Parr, Lopes & Malik 2002). Capacity development through knowledge sharing and a reappraisal of technical cooperation were envisaged to offer 'new solutions to old problems' to address poverty in developing nation contexts. For the World Bank, 'capacity' relates to the ability of individuals, communities, societies and organizations to define and solve problems, make informed choices, order their priorities and plan their futures, as well as implement programs and projects that sustain them (Nair 2003). The United Nations Development Program (2008, p. 2) recognizes that capacity resides on three levels – 'the enabling environment', 'the organization' and 'the individual', but specifically tailors its 'capacity assessment framework' (UNDP 2008, p. 8) to the enabling environment and the organizational level. The UNDP note that 'Since the levels of capacity are interdependent and complementary, it is rarely... sufficient to explore capacity assets and needs at only one level' (p. 10), and so advocates 'zooming in and zooming out principles' (see Figure 3.1) for capacity assessments across core issues of institutional arrangements; leadership; knowledge and accountability. The additional comment that 'In some cases, this "zooming in" also needs to extend to the individual level' (UNDP 2008, p. 10) is noteworthy. However, an institutional focus on the national, sub-national enabling environment factors privileges the external, interventionist and expert observations and evaluations of capability.



Source: UNDP 2008, p. 10.

Figure 3.1 The 'zooming in and zooming out' principle

Hunt (2005) discusses the pertinence to build capacity, to increase or broaden one's 'capability set', when promoting local ownership of development initiatives. However, the exogenous assumptions on the degree to which the required development capacities exist within developing communities are taken from a Westernized viewpoint often mistaking difference for 'deficit'. This view affirms that the developing must transform their capability set to resemble the developers through 'technical cooperation' (Fukuda-Parr, Lopes & Malik 2002; Denning 2002). Moving beyond a binary – Western asset, 'Other' deficit – assessment view suggests that: 'What people know underpins their capacities and hence capacity development. Knowledge needs can be addressed at different levels ... and through different means (formal education, technical training, knowledge networks and informal learning)' (UNDP 2008, p. 13).

From institutional to an endogenous perspective, assessments need to address the need to respect local value systems, shift power, challenge mindsets, and build on existing capabilities as targeted and grounded within the local cultural context. 'This is not to reify *culture* as cultural practices can change, and cultural identities are complex, but to recognize the inherent in much development work are ideas which are embed in Western cultures and which may not transfer easily to other contexts' (Hunt 2005, p. 15). Hunt (2005) focuses on the useful distinction between 'hard' and 'soft' capacities, noting that 'soft' elements are 'less easily definable and quantifiable factors' (p. 5). She cites Land (2000, p. 3) to explain that these are often related to so-called 'incentive' motivational and demand factors, of a material, cultural, or social nature.

Capacity development is a two way learning process that aims to avoid the vicious cycle of disempowerment (see Lopes & Theisohn 2003, p. 42), where due to the development facilitator mindsets, implicit inequalities and attitudes of superiority are conveyed over the 'recipients', decreasing their desire (freedom) to actively participate in their own agency. Hunt (2005, p. 10) 'sees echoes of this cycle in government relations with Indigenous Australia'. Alternatively, an 'asset-based community development approach involves participative processes to identify, link together and mobilize existing community assets to build a visions and plan and leverage external support (Hunt 2005, citing Foster & Mathie 2001; Mathie & Cunningham 2003).

The following statement summarizes the dichotomy between exogenous and endogenous standpoints on capacity development:

[It] starts from the principle that people are best empowered to realize their full potential when the means of development are sustainable – home-grown, long-term, and generated and managed collectively by those who stand to benefit... Confusion around the term seems to have grown along with its popularity. For some, capacity development can be any effort to teach someone to do something, or to do it better. For others, it may be about creating new institutions or strengthening old ones. Some see capacity development as a focus on education and training, while others take a broad view of it as improving individual rights, access or freedom (UNDP 2009, p. 5).

There is considerable investment in exogenous interpretations of capacity development, with limited investment in initiatives built on the fundamental freedom principle of empowerment though 'giving voice' and agency to local knowledge, values and capabilities understood as assets rather than deficits.

3.6 Conclusion

3.6.1 An endogenous driven and facilitated model for meaningful Aboriginal community development

In summarizing, the international development identifies two distinct approaches to development: exogenous (targeting equality of opportunity) and endogenous

(targeting equality of agency). There is consensus that the former relies on external (Universal/Western) ideological (knowledge, values, capabilities and context) assumptions, which lead to many failed development initiatives. Alternatively, the endogenous approach aims to address such decontextualised failings through increasing the influence and input of the actor's positionality and situationality within the development agency process. Through internally conceived and driven agency, empowerment and capacity building processes, the assumptions of an EnCDD approach is that those seeking to develop can best address *their* 'unfreedoms', and expand and exercise *their* 'reasoned agency' for a more *meaningful* approach and development outcomes.

This review indicates that applying an EnCDD approach to address the Australian Aboriginal disadvantage and development imperative is salient. However, the evolving nature of understandings, significant power invested in normative and institutionalised assumptions, and the continuing high cost of past failures indicates there is still much for practitioners to learn. It cogently argues for the distinction to be made between externally and internally facilitated development in the pursuit of meaningful development objectives and actions. The conclusion can be made that only by leveraging the endogenous views and actions of specific community actors can 'meaningful' outcomes be created.

The model in Figure 3.2 summarises the contrasting 'asset' and 'deficit' assumptions underpinning exogenous and endogenous theory and action principles. The model differentiates between normative and alternative development approaches to interpret Aboriginal community realities. Exogenous approaches apply the principals of 'equity of opportunity' as the motivational development driver, while endogenous approaches apply the principal of 'equity of agency' as the motivational development driver. As depicted in Figure 3.2, the arguments encapsulated in the alternative endogenous model emphasise that local 'asset' knowledge, values and capabilities and lived realities house valuable resources and skills that through participatory agency communities can identify and drive locally

meaningful economic, social, environmental and cultural development goals and outcomes.

In light of the material on Aboriginal disadvantage in Chapter 2, the normative and alternative views of development, affirm the value to leverage and investigate the reasoned agency processes of the marginalised and disadvantaged Aboriginal peoples through EnCDD. This chapter emphasises the need to acknowledge the distinction between Westernised and exogenous assumptions of development, as an often enforced artificial construct of exogenous or universal 'best practice'

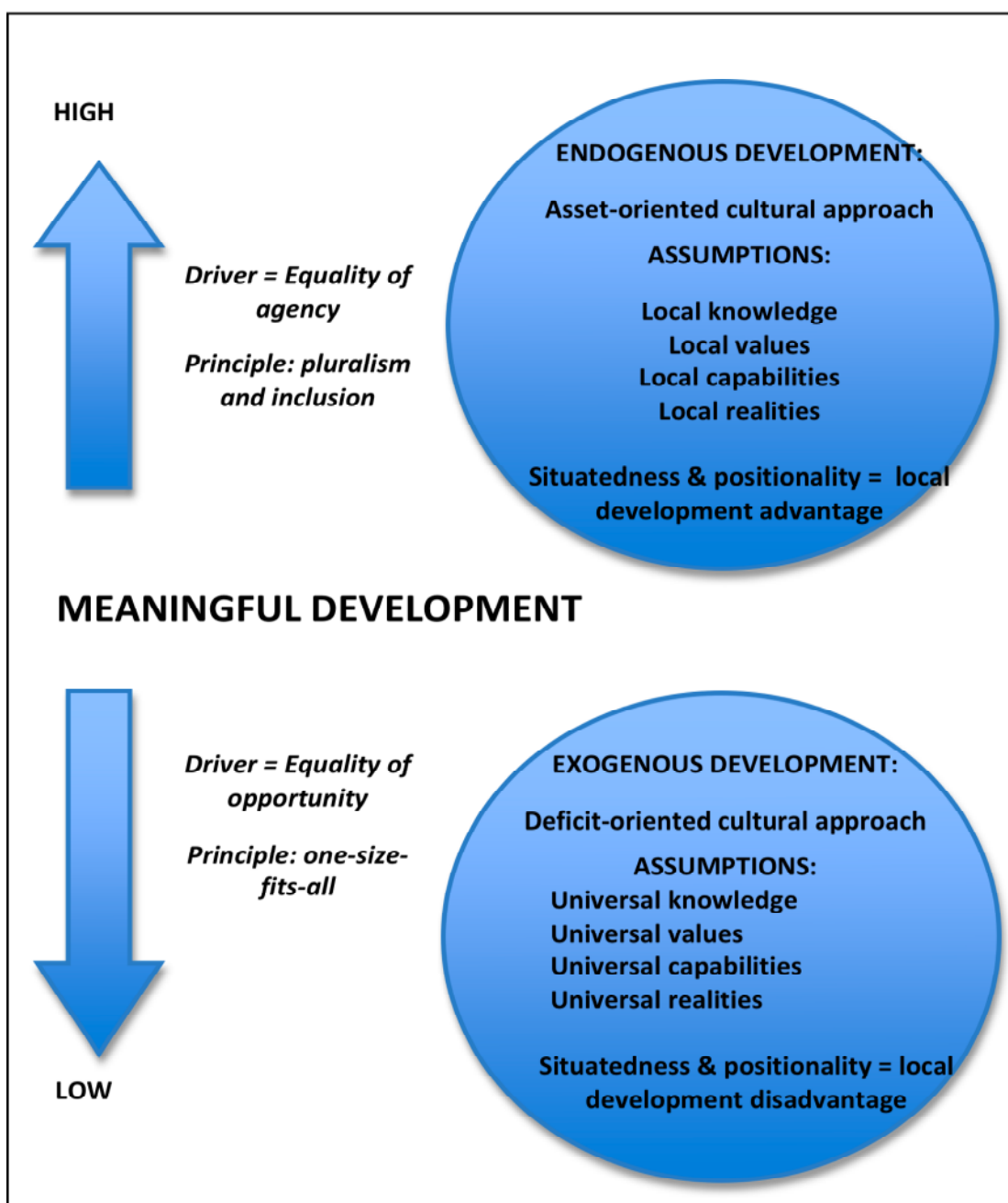


Figure 3.2: Contrasted endogenous asset-based and exogenous deficit-based development approach to interpret Aboriginal community development.

values, and the particularist ‘best fit’ (Chambers 2010) of local value assumptions. Using a pluralist and inclusive EnCDD approach, the latter model draws on the situationality and positionality of local human agency to leverage the reasoned agency of the disadvantaged. EnCDD is not proposed to replace universalist

development frameworks. Rather, it is complimentary and experimental practice that could be pivotal in reducing the level of disadvantage experienced by Indigenous peoples the world over. Locating tools and practical frameworks that may empower the disadvantaged to increase their ability to meaningfully enact EnCDD initiatives are deemed vital part of lessons still to be learnt on the soft socio-cultural elements of the enabling environment. The next chapter reviews the informational communication technology (ICT) literature for insights into how these technologies may act to interactive tools to facilitate meaningful EnCDD outcomes.

Chapter 4

Theorizing information and communication technology (ICT) and development

4.1 ICTS and development

Chapter 4 engages with literature from the field of ICT to explore the relationship between revolutionary developments in ICTs and evolving theoretical and practitioner discourse postulating the role of ICTs as key tools for development. More specifically, the chapter explores its potential within EnCDD practices to understand why ICTs are proposed as tools to facilitate participatory methodologies and community driven development (CDD). The review identifies why ICTs are conceived to offer opportunities to employ grounded, self-directed and, participatory approaches in pursuit of meaningful community development. The review identifies why ICTs maybe of particular relevance for remote Aboriginal community development. Finally, the chapter synthesizes the key concepts explored in the three literature sections to propose an overarching interdisciplinary conceptual framework to address the multifaceted aspects of the research questions posed within this case-based research.

4.1.1 The logic underpinning ICT and mainstream development synergies

Information and communication technology (ICT) is transforming interactions between people, governments, and firms worldwide. In developing countries, farmers receive updated crop prices and public health officials monitor medical inventories by text message. Women are empowered to make decisions and access new opportunities through online information. Entrepreneurs obtain business licenses in a fraction of the standard time by applying for them through municipal government Web sites. And in an increasingly integrated global economy, ICT enables people to access and share knowledge and services around the world (Sierra 2009, p. xi).

For some time, ICT has now been acknowledged as a broadly penetrating pro-development tool, especially since periods of increasing globalisation of the late 1990s, and within areas of economic development (Akhtar & Laviolette 1996; Hall

1998; UNDP 2001; Colecchia & Schreyer 2002; USAID 2004; Labelle 2005; Kyem & LeMaire 2006; Langmia 2006; Gray, Magpantay et al., 2006; Marshall & Taylor 2007; Chambers 2010). ICTs are seen as providing a central role in any national development strategy, especially with regard to economic development and sustainable growth (Khalil 2009).

Western notions of development have long targeted progress and growth, primarily derived from post-Enlightenment understandings and the targeted pursuit of these have attained global prominence of what is defined as 'development' (Shiva 1988; Galtung 1996; Pieterse 2001; Unwin 2009). During the rapid and expansionist periods of globalization, the era in which ICT prominently feature within development discourse, development is described as a coalescence of specific economic, social, cultural and political interests. These coalescing factors have led to an increasing inter-connectedness of human activity across the world (Unwin 2009). Unwin (2009) states that ICT have been instrumental in facilitating many of the changes brought on through globalization. ICT became increasingly available tools for everyday information interaction across all spheres of human activity. Table 4.1 illustrates the four distinct yet interrelated economic, social, cultural and political spheres of human activity through globalization as a coalescing process of transformation, including examples.

Table 4.1 The coalescing and multifaceted spheres of globalization trends

SPHERES OF HUMAN ACTIVITY	COALESCING SPHERES OF GLOBALIZATION
ECONOMIC GLOBALIZATION	<ul style="list-style-type: none"> ○ Rapid increase in international trade ○ Integration of global financial systems ○ Changing systems of industrial production involving increased amounts of outsourcing
SOCIAL GLOBALIZATION	<ul style="list-style-type: none"> ○ Increased migration and travel ○ New means of social communication such as instant messaging & mobile telephony ○ Increasingly complex patterns of human relationships across the world
CULTURAL GLOBALIZATION	<ul style="list-style-type: none"> ○ Increased intermixing and hybridization ○ Creation of global fashions, trends and crazes ○ The rise of global media organizations ○ Increasing acceptance of a global set of human values, i.e., UN Declaration of Human Rights ○ A tendency for the artefacts of a few dominant cultures to be disseminated much more widely across the world
POLITICAL GLOBALIZATION	<ul style="list-style-type: none"> ○ Expansion of global justice movements i.e. creation of the 'International Criminal Court' in 2002 ○ The growth of political alliances ○ Increasing significance of 'international terrorism' ○ Advancement of the global environmental movement ○ The dominant military role of the USA as a global political force ○ The existence of a worldwide anti-globalization movement

Source: Adapted from Unwin 2009, pp. 15-16.

Fundamentally, the formative interactive role of ICT enabled economies to acquire and share information, expertise, services, and technologies locally, regionally, and across the world – increasing the integration of the global economies (Khalil, Dongier et al. 2009). Essentially, a core aspect of globalization in an enterprise context is that ICT allowed corporations to move information and products, and to reach markets faster and more cost-efficiently, making it cheaper to operate and a wider market reach. Because of the profound adaptability of ICT to service economic efficiency and innovation, control has been sustained through exogenous and proprietary means; essentially, by those who advocate the need for the rich to remain competitive in the global knowledge economy govern ICT (Unwin 2009). There is little doubt whether ICT contributes to development through economic

growth. However, of interest to this thesis is how such a valuable commodity as ICT can be used to help transform the lives of the poor and marginalised?

Avgerou (2003) cautions, the potential 'effects' of ICT in future locations cannot be identified nor predicted accurately. ICT innovation is a process deeply influenced by the 'formative conditions' of a given social or organizational context. Avgerou further states that the 'tool and effect' link between ICT and economic development is based on a narrow economic perspective of human action, which ignores many aspects of the socio-economic theory of development. Woolcock (1998) describes these wider socio-economic aspects as 'social capital', being the information, trust, and norms of reciprocity inherent in ones social networks. Yet, the wider 'bonding', 'bridging' and 'linking' socio-economic aspects inherent in social capital suggest the potential for the 'tool and effect' link between ICTs and economic development. ICTs have increasingly been viewed as potentially a positive tool for marginalized individuals and collectives to strategically manage and interact with information – albeit originally targeting core economic outcomes. DICTA (2005), Bandias (2009, 2010) and Mignone and Henley (2009) contend ICTs have a significant positive potential on the economic development agency of Indigenous communities in both Australia and Canada.

Historically, a large portion of ICT – Indigenous related research in an Australian context has been framed around the relationship between 'new' media (medium) and 'old' cultures, often in an anthropological cultural-impact context. Deger (2006) follows on from the seminal works of Michaels (1994) to research the sociological impact of new media on Aboriginal tradition. Ginsburg (1991, 1993, 1994a, 1994b, 1994c, 1995a, 1995b, 2000, 2002) researched the ethnography of Aboriginal media as a social anthropologist. This largely anthropological body of knowledge while invaluable and insightful, is deemed outside of the direct scope of this research project and so is subsequently only referred to in limited terms where deemed relevant to the development narrative of this project.

Of relevance to this project is the emergent body of development focussed ICT for

Development themed literature that arose around the time of this research project, with a number of more recent papers citing publications resulting from this research project. Guenther and Williams et al. (2012) propose that ICTs such as e – learning can support more meaningful vocation in remote communities when applied in a local context that accommodates Aboriginal ontology, epistemology, axiology and cosmology. Horner (2011) positions the mobile Internet as a tool for advancing human rights and capacities with direct mention of Australian case-examples generated from this research project. Turk and Hilliard (2012) present a collaborative project between an Aboriginal community, Native Title representative body and extractive industries that used educational DVDs to generate capacity development outcomes for Martu participants in the Western Desert Region of Western Australia. Kral (2011) bridges ethnographic inquiry with accounts of Aboriginal ICT interactions that promoted agentic participation and youth engagement. What these papers highlight is the emergent nature of this body of knowledge, and one that largely did not exist in an Australian context until the completion of this research project.

The subsequent sections engage with the positive development potential of ICTs through discourse on the concept of ICTs, information, interaction barriers, and how such technology may offer opportunity for the marginalized to overcome their disadvantage through endogenous approaches to development.

4.1.2 ICTs in historical context: What are they and what do they do?

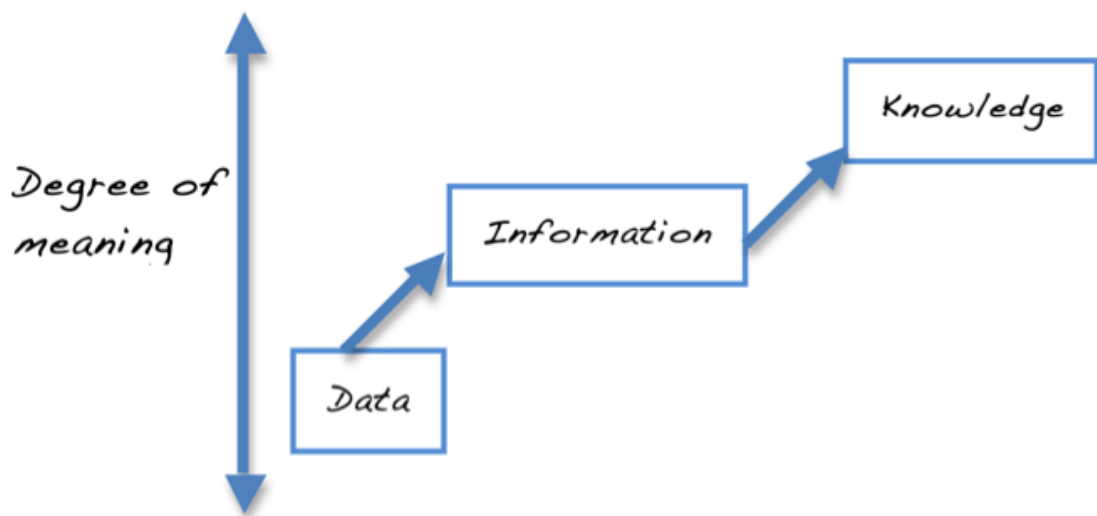
There is only one time in the history of each planet when it's inhabitants' first wire up its innumerable parts to make one large Machine... Confucius, Zoroaster, Buddha and the latter Jewish patriarchs lived in the same historical era, the axial age of religion... I believe that our ancient time, here at the cusp of the third millennium, will be seen as another such era... Animating inert objects with tiny slivers of intelligence, connecting them into a global field, and linking their own minds into a single thing (Kelly 2005, p. 5).

Kelly's 'wide-eyed' rhetoric alerts to the epoch-making potential of the multi-spherical impact of ICTS. ICTs' relatedness to development links to the evolutionary

societal notion of the 'information age' (Toffler 1980), and the idea that communication technology impacts on the ways in which societies, economies and cultures are shaped and function (Castells 2000, cited in Unwin 2009). These interrelated and revolutionary ideas about technology and development imply that the facilitator role of communication technology through access to, or dissemination of, information and knowledge can greatly affect people's lives, for better or worse.

Information is both a polymorphic phenomenon and polysemantic concept, and can be associated with a range of definitions and explanations (Floridi 2005).

Information can be described as a tripartite of interrelated 'conditions': the information consists of one or more 'data'; the data within the information are 'well-formed'; and the well-formed data within the information are 'meaningful' (see Floridi 2005). Knowledge relates to the last condition and is understood to require higher order human processing, while 'information' is something that is only produced and communicated. Information that is not understood and actively utilised does not classify as knowledge (Unwin 2009). While information is more factual, knowledge relates more to human elements such as beliefs and commitment (Stenmark 2002). Figure 4.1 illustrates this oversimplified tripartite interrelation between degrees of meaning with the noteworthy correlation in increasing degree of meaning.



Source: Adapted from Stenmark 2002, p. 3

Figure 4.1: The tripartite relationship between data, information and knowledge

Information, data and knowledge are vital resources for human society; a primary fuelling resource of the 'post industrial society', or the post-industrial 'information society' and network society (see Toffler 1980; Eaton & Bawden 1991; Castells, 1996). Cooper (1983) summarises the change in status of information as shifting from a marginalised intellectual domain to a valued resource, and as a commodity deemed vital to modern society (Eaton & Bawden 1991). Part of the shift on how information is viewed in society, and indeed in economic society, was due to a change in the way it was managed, accessed and transmitted over the last century. Rooted in the positivism of the mid-nineteenth century, the 'commodity' view saw information and knowledge as an explicit artefact that can be handled in discrete units and possessed by many people. Under this explicit or easily shared view, the knowledge can be separated from the knower (Stenmark 2002). Opposing this explicit 'transmission' approach is the 'community' or 'constructivist' approach, arguing that reality should be understood and socially constructed, and that knowledge can only be defined in practice, in the activities of interactions between individuals (Stenmark 2002). This constructivist view emphasises the tacit, or not easily shared characteristics of knowledge. Both explicit and tacit knowledge are

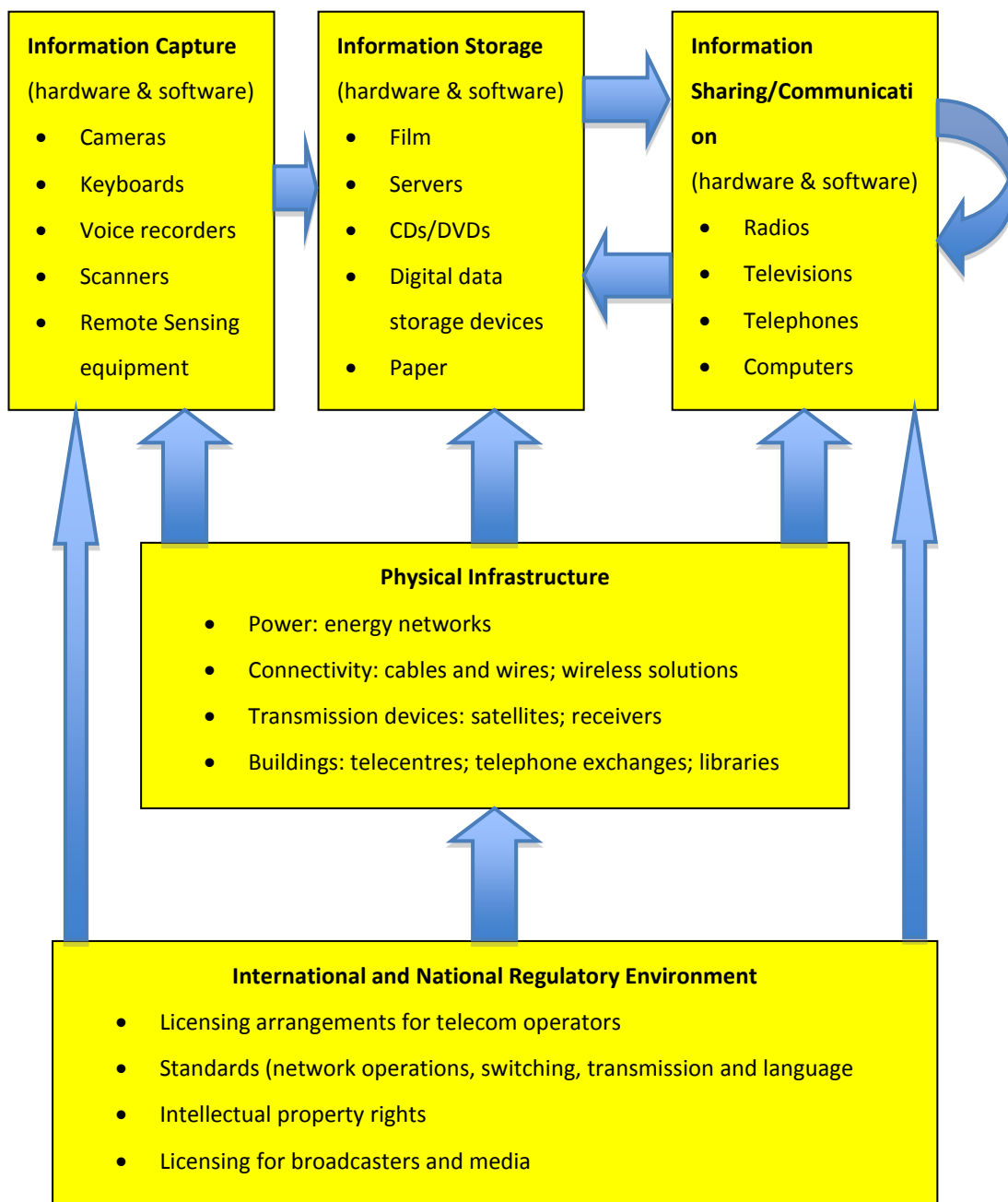
manifest through language, symbols, objects and artefacts' and can be articulated, codified and stored within media. What has radically changed over time and with the emergence of the notion of the information society is how we access, manage and disseminate information and knowledge, especially since the introduction of ICT into everyday life for a large number of the global population.

ICT refers to hardware, software, digital networks and media that collect, store, process, transmit and present information including voice, data and images. ICTs include: telephone, fax, radio, television, video, audio, computer and Internet technologies (Neto et al. 2005). More commonly, ICT is primarily used to describe computers and the Internet (Unwin 2009), though technically an umbrella term that includes any communication device or application, but also including services and applications associated with them such as videoconferencing and distance learning (Unwin 2009). ICT refers to digital (vs. analogue or other) technology designed to access, process and transmit information (Weigel & Waldburger 2004). For Hamelink (1997), ICT can be divided into capturing technologies: (cameras, digital video recorders), storage technologies (CD-ROMs and film), processing technologies (software), communication technologies (mobile 3G telephone), and display technologies (computer monitors, phone touch screens).

The first digital ICTs were built through military necessity, e.g., the Electronic Integrator and Computer built by the United States Ordnance Corps in 1947 (Kempf 1961). Defined by automated calculation and programmability, this era marked the beginning of more widespread use of electronic (digital) computing devices. Digital telephony took over from analogue in the 1960s, with improved network quality and capacity (Hurdeman 2003). Mobile technology (*analogue*) was mainstreamed in the late 1990s, with subsequent 2G (*digital*), 3G (*wideband*) and 4G (*broadband*) evolutions rapidly increasing the technological impact on society through increasing affordability, accessibility, efficiency, technological interconnectedness, and relevance as the interactive infrastructure for society (see ITU 2010). With the advent of the Internet (a global system of interconnected computers) in the mid 1990's came increasing affordability, accessibility or user-friendliness, speed and

interconnectivity of information exchange across the world. Hence, the rapid development and spread of the internet-based information revolution (Castells 1996, 2010) evolved to become a significant conduit of social and work life (Howard 2001). For Castells (2009), the revolutionary characteristics of ICT developments reflect as radical and pervasive a pattern of discontinuity in the material basis of economy, society and culture as the historical event of the eighteenth century Industrial Revolution.

ICTs can be conceptualised as three distinct yet interconnected processes: the capture of information, the storage of information, and the way such information is accessed and shared (Unwin 2009). Supporting this requires the presence of a physical infrastructure enabling the operation of the ICT, and a regulatory standard in place ensuring common standards between devices allowing communication (Unwin 2009). Figure 4.2 depicts an interpreted framework for conceptualising the 'workings' of a holistic ICT system.



Source: Unwin 2009, p. 80.

Figure 4.2: Framework for conceptualizing ICT, emphasising the diversity of requirements and options that people can use to communicate and manage information

ICTs have brought forth a number of small and relatively cheap information capture and storage devices that have transformed the world in which we live through

technological transformation and the democratisation of knowledge (Unwin 2009). This relative low cost capture and storage of information has had impact on three significant technological arenas: libraries, multimedia and the Internet (Unwin 2009). Until the 1990's, libraries ultimately maintained a monopoly on information, serving a public good through the provision of knowledge to those unable to afford their own 'hard copies'. With the dramatic increase in books, journals and printed media, it became physically impossible for libraries to store comprehensive volumes of knowledge resulting in disadvantage. Digital technologies, though not without possible side effects, have enabled much of this information to be accessed and stored in entirely new ways, providing greater range of material (knowledge) made publicly available. Similarly, recent advances in digital technologies have created more efficient production and storage opportunities for multimedia forms. Relative to now, film and audio and image production was once a bulky, complex and costly process. Now with smaller digital recorders, it is a relatively user-friendly and low(er) cost production process.

When coupled with the rising practice of sharing social media among peers and communities through the Internet and other platforms, ICTs become a powerful social and political tool (see White 2003; Gregory et al. 2005). For example, international development agencies, such as the United Nations and the World Bank, focus on ICT usage to promote a gender equitable approach to development (see UNESCAP 2001; World Bank 2010). The modern Web now provides the world with its greatest source of information storage and exchange. Different to the Internet, the Web is a body of resources accessed over the Internet, while the Internet is the connection of interconnected computers (see Abbate 1999). It has transformed traditional processes of information capture, sharing and retrieval on a global scale. For Castells (2009), the rapid expansion of ICT related resources, which constitutes the much expanded connectivity and interactivity of the Web, now underscores the need for analysis to understand the major social, technological, economic and cultural transformations associated with what he calls 'the networked society' (p. xvii).

With knowledge-based activities increasingly becoming both important and pervasive, ICT has become the foundation of this new knowledge-based world and network society. Therefore, as the information requirements for innovation in economic and social activities increase, so to does the significance and role of ICT within development agendas (Khalil et al. 2009). Khalil et al. emphasise the role of ICTs for innovation in economic and social activities with implications for the innovative potential of ICTs in both exogenous and endogenous development approaches. This review of the literature indicates that the increasing accessibility, affordability, user-friendliness, and knowledge storing and sharing capacities of ICT includes both tacit and explicit knowledge. Discussion in the literature on the economic, social and cultural materiality of sharing and storing of explicit and tacit knowledge through ICTs suggests these to be tools for innovative and meaningful approaches to development. However, the issue access to such revolutionary technologies is considered to be a pivotal issue when considering the role of ICTs in development.

4.1.3 The digital divide: Governance and equity of access

Norris (2001) alerts to the radical transformative potential of ICTs, but notes critical concerns for the impact of this potential by key shifts in the global political sphere through the burgeoning of new and web-based ICT developments.

The year 1989 dawned like any other but, in retrospect, it witnessed two major developments of immense historical significance... The dismantling of the Berlin Wall... The other was less generally recognized at the time, beyond a few scientific and technological cognoscenti: the invention of the World Wide Web... Like a stone dropping into a pellucid pond, the ripples from this invention are surging throughout industrialised societies at the core, as well as flowing more slowly among developing societies at the periphery... What are the causes of stratification in the networked world? ... Will the Internet serve to reinforce or erode the gap between information rich and poor nations? Will it exacerbate or reduce social divisions, as many hope, or will it buttress the power of established interests, as others fear? (p. 3)

The global diffusion of technology in many instances correlates with rising knowledge diffusion through increasingly efficient communication, political engagement, and new methods of increasing the productivity of developing nations (see Chinn & Farlie 2004). While there are many pro-development arguments supporting ICT access, they also attract debate at the other end of the spectrum, the negative impact and associated cost of the 'lack' of access to such technology, increasing levels of global disadvantage for some (see Hamlink 1997). As ICT has rapidly established itself as the determining gateway to information and knowledge access, ICT access has evolved into a pivotal aspect of present-day human development. The technical and financial requirements of ICTs serve to potentially limit global equality of access, favouring the developed, wealthy and powerful, and further disadvantaging the powerless, marginalised, poor and underdeveloped. This disparity means that addressing the diversity of access and subsequent impact are vital to any discussion on ICT within a development context.

'One of the most important issues generating widespread concern for the emergent information age has been indication of a growing digital divide between Internet-haves and have-nots' (Norris 2001, p. 18). The origin of the term 'digital divide' articulates to Singer and Ansari's (1977/1992) concern for the technology inequities between rich and poor countries and the development implications. Despite the revolutionary development and spread of ICTs, there exists stark disparity in access between geo-regional, political, cultural, and economic groups. One common characteristic among those with low ICT access is:

- Political, social or economic marginalisation (Castells 2002)
- The poor, impoverished, and disadvantaged are often neglected
- The opportunity for freedom to access information and knowledge far less than more privileged global neighbours.

With the central role ICT plays within modern society, ICT access is conceived as a core aspect to overcome disadvantage and address human development. ICT access is a multifaceted concept (Van Dijk 2006, 2003, 1999), consisting of a number of 'hurdles' or 'barriers' present within the information and network society. For Van Dijk (1999), four key ICT access areas are identifiable:

1. Lack of digital experience caused through lack of interest and fear of new technology (psychological access)
2. Lack of ICT possession or ownership (material access)
3. Inefficient ICT skills caused by a lack of user-friendliness and inadequate education or social support (skills access)
4. No significant usage opportunities (usage access).

Often when dealing with improving ICT related access, public policy is pre-occupied with addressing the second access area, material access (Van Dijk 1999), however providing material access alone will not address the holistic issue of ICT access. Indeed, socio-cultural barriers may greatly influence the situation and thus must be acknowledged. Norris (2001) conceives the digital divide as a multidimensional phenomenon encompassing three distinct aspects:

1. *The Global Divide*, referring to the divergence of Internet access between industrialized and developing societies.
2. *The Social Divide*, concerning the gap between information rich and poor within a nation.
3. *The Democratic Divide*, within the online community it signifies the variance between those who do, and those who do not utilize the 'panopoly' of digital resources to engage, mobilize, and participate in their public life.

Norris' (2001) and Van Dijk's (2003) analysis alert to the range of possible disparities and barriers relating to ICT usage across the multiple economic, social, cultural and political societal spheres within the global population. Statistically the digital divide can be substantiated, however the empirical literature identifying its causes is limited (Chinn & Farlie 2004). Globally, in 1990 there were 2.5 computers per 100 people, increasing to 9 per 100 people in 2001 (Chinn & Farlie 2004). Similarly, Internet usage increased from almost zero usage in the early 1990's to 8.1% of the global population in 2001 (Chinn & Farlie 2004). However, these high early adoption rates mask large access disparities between and within global regions. North

America shows 61.1 computers per 100 people, yet only 0.5 per 100 people within South Asia, and 1.0 per 100 people within sub-Saharan Africa (Chinn & Farlie 2004).

The high Internet usage and disparate characteristic figures for Australia are noteworthy. A recent survey reported eight out of ten Australians have used the Internet. Of that figure 73 per cent of citizens are current Internet users, and 8% have used it, though not regularly (Ewing, Thomas & Schiessl 2008). The survey also indicated age, income, education, occupation, and urban-rural locality influenced Internet access (see Ewing, Thomas & Schiessl 2008, pp. 2-4). Similarly 78 per cent of Australians have regular household access to a computer, a significant increase from 44 per cent in 1998 (ABS 2009); 5.0 million Australian households have broadband Internet (62%), and 86 per cent of those that have Internet access (ABS 2009). However, access rates are considerably lower for regional and rural areas with a 24 per cent disparity between major cities and very remote localities (ABS 2007b). In 2009 there were 8.4 million active Internet subscribers in Australia, of which 57 per cent (4.2 million) were digital subscriber lines (DSL) (ABS 2009).

According to the Australian Bureau of Statistics (2006c) Australia's Indigenous population are 69 per cent less likely to have any Internet connection than their non-Indigenous counterparts, and 52 per cent less likely to have broadband access. Daly (2005) highlights a relationship between low levels of Internet usage by Indigenous Australians and a lower income and educational levels. In a related study Daly (2001) notes that 'Indignity' per se, or cultural preference does not negatively influence (reduce) Internet or computer access. A more likely cause of access disparities between Indigenous and non-Indigenous Australians was Indigenous Australians have a higher likelihood of living in locations where the Internet access is limited, i.e. remote or very remote localities. In 2006, Indigenous households in very remote areas had only 13 per cent had Internet access (ABS 2010c). Yet this figure 'is in contrast to the trend for other households, where Internet access in major cities and in very remote areas were almost the same (67% and 62% respectively)' (ABS 2010c, p. 135). Internationally, Indigenous peoples

have rapidly adopted mobile phone technology in recent years, lead by Africa with faster subscription growth than any other part of the world (Dyson & Brady 2008).

In Australia 88 per cent of the population owned a mobile phone in 2007 (Australian Mobile Telecommunication Association 2007). Dyson and Brady (2008) observed 58% of people interviewed within a remote Aboriginal community acquired mobile phones within nine months of the availability of a 3G network. This adoption rate was much higher than any other ICT within the community, who cited uses such as communication and multimedia use as key interaction drivers. It is accepted that more distant populations, i.e., increasing degrees of remoteness, have stronger information demands and are generally willing to pay for such services (Madden et al. 2000), and this fact may not differentiate between Indigenous and non-Indigenous populations.

These international and specific Australian ICT statistics indicate the mixed, complex and constraining characteristics of access disparities, and the alternative high uptake characteristics of access opportunities globally. They highlight in many instances the governance of ICT access is shifting away from corporately driven era of the past, to more user-driven initiatives as exemplified through technological evolutions including Web 2.0 (Ashley et al. 2009). However, as discussed complex and interrelated ICT interaction barriers continue to limit equitable global ICT access. Statistics representing the global range of ICT uptake may be misrepresented depending on the lens with which they are viewed. They also signify a broad and deeply penetrating range of economic, social, cultural and political complexities relating to how and if people choose to interact with ICT, if they are first given the opportunity to do so.

4.1.4 ICT and poverty alleviation

To conceptualise the implications of ICT for development through increasing human and resource interconnectedness, 'uniformity' essentially characterises globalization, and yet, it also offers increased opportunities for local cultures to mobilize global expression (Unwin 2009). It is this plural and local cultural facet that

is of interest to critical and endogenous development theory and practice; that while ICT may serve a capitalist global economy, they might also serve to empower poor people and marginalised communities. Unwin adds that this development potentiality necessitates concern for how ICT might effectively help transform the lives of the poor and marginalised despite global interests that seek to maintain competitive advantage between and the digital divide at a range of scales.

Subsequent to the United Nations Information Communication Technology Task Force (2001) initiative and burgeoning interest in the role of ICTs in economic development, International development institutions adopted the anagram 'ICT4D'. Many ICT4D applications target ways for rural poor to increase their participation within economic markets, therefore allowing underdeveloped economies to grow (see Avgerou 1998; United Nations Industrial Development Organisation 2008). Econometric research has identified a strong correlation between ICT access and economic growth; as 'infodensity' increases, so to does per capita GDP, in some instances at the rate of 1 per cent increase in infodensity resulting in 0.9 per cent increase in per capita GDP (Sciadas 2005). Yet measures, such as GDP value, still represent implied Westernized and exogenous economic assumptions of development.

According to the UNESCO, ICTs have a core role to play in delivering effective development practice through participation and empowerment as an alternative to 'development simply aligned with economic growth' (Unwin 2009). UNESCO adds that ICT offers linkages between the dominant contemporary motifs of economic growth (enterprise) and liberal democracy (governance), as well as addresses aspects of education, health and environmental sustainability as highlighted within the Millennium Development Goals (Unwin 2009). This broadening of the conceptualization of development highlights the more multifaceted and coalescing of economic, social, cultural and political spheres as related to the impact of ICTs.

Broadband Internet access has been recognised as a service of general economic interest providing nations with the ability to gain competitive and comparative

economic advantages. Empirical studies have shown it can positively influence productivity, costs of enterprise, economic opportunity, employment, innovation, and an overall increase in economic activity (see Qiang & Rossotto 2009, pp. 35-45). Of significance is the notion that these empirical findings are both major and robust for both developed and developing countries. Expanding access to advanced ICT services such as a 'backbone network' in developing regions, such as sub-Saharan Africa, are key aspects of their capacity for economic and social development (Williams 2009). However, as the pace of ICT development increases, so to does the significance of the technology in every day life, and thus, 'the gap between developed and developing nations increases as long as the digital divide' exists (Williams 2009, p. 63).

When discussing ICTs as a development tool across economic, social, cultural and political societal spheres, these views heighten the importance of the positionality and situationality of individuals, communities and nations; the greater complexities associated with Van Dyke's (1999) concern for the psychological, material, skill, and usage access issues; and Norris' (2001) concern for global, societal and democratic disparities. Concurrent to these development concerns for ICT, the literature suggests that ICTs can function to strengthen the internal 'infosphere' of an otherwise disadvantaged and marginalised community while offering the same community outreaching development opportunities to the global infosphere. Figure 4.3 illustrates these interrelated internally strengthening and external outreaching potentials that ICTs may offer a community pursuing endogenous development goals. These strengthening and outreaching potentials articulate to the bonding, bridging and linking aspects of social capital, as discussed the previous sections on development.

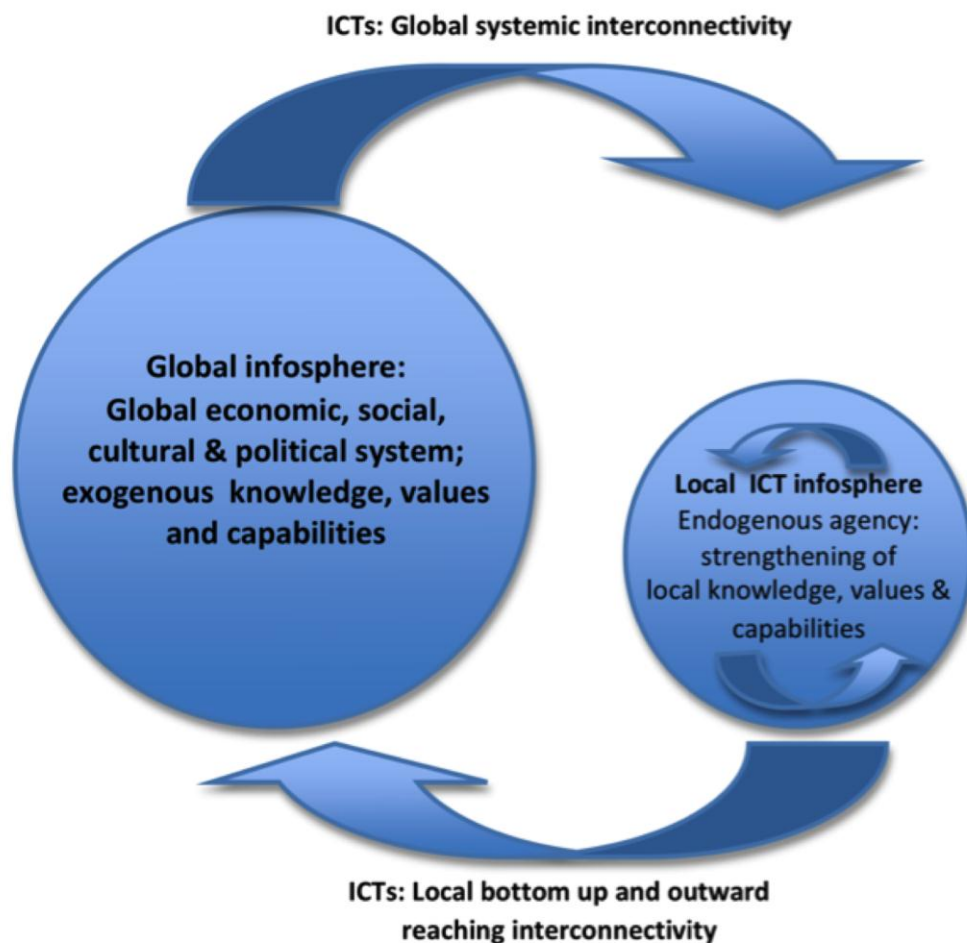


Figure 4.3: The interrelated strengthening and outreaching potential of ICTs from an endogenous point of view

4.2 ICTs as reasoned agency tool for endogenous community driven development (EnCDD)

As the ICT sector increasingly shifts away from singularly acting to increase the efficiency of mainstream capitalist's objectives and encompasses more 'social' aspects of knowledge production, storage and dissemination, so too there is an increase of relevance and opportunity for the marginalised and disadvantaged to interact with such technology (see Ashley et al. 2009; Unwin 2009). These more social aspects suggest ICTs to have vital implications for endogenously driven approaches in pursuit of development, and especially for Indigenous peoples. This suggestion, when coupled to Sen's (1999) expanded ideas of reasoned-agency and

the capability approach development framework, indicate research into EnCDD is warranted at the grass roots community level.

This review affirms that while the normative notion of economic development and ICT investment serve to benefit certain people under certain conditions, there is value to apply and investigate ICT4D through an alternative, locally identified and people-centred development paradigm, i.e. one that acknowledges the positionality and situationality of lived economic, social, cultural and political realities as faced by specific communities in particular contexts. As in Sen's eyes, 'we need to allow people to achieve what they want to achieve, because peoples' heterogeneity of preferences and values differ' (Sen 1999, p. 249). Formally, 'what people want to achieve' relates to individual or collective 'reasoned agency', and this is realised through the ability to exercise reasoned freedoms; all of which are locally specific, due to complex situational and positional forces. Together these multifaceted ideas contribute to this research's assumption of the importance to investigate the role of ICTs in EnCDD, and hence the thesis' use of the acronym ICT4EnCDD.

Locally specific ICT4EnCDD may be especially pertinent for those who lack equality of political representation, economic opportunity, and social and cultural marginalization. As an alternative a ICT4EnCDD model is conceived as both a process and 'agency centred' means for development based on the wants and desires (reasoned freedoms) of those seeking to 'develop', and one that is shaped by the locally specific (positional and situational) influences that form 'their' development ideology. Conceived as an open action and agency process, 'Development is indeed a momentous engagement with freedom's possibilities' (Sen 1999, p. 298). Chapter 3 illuminates on why so many exogenously interpreted development initiatives fail to deliver meaningful and/or sustainable outcomes. However, there is a dearth of research into EnCDD and Aboriginal community development in Australia, especially remote and regionally located communities. This dearth indicates points to a serious gap between development knowledge related to the theoretical rationale and institutional advocacy for the empowerment potential for Indigenous peoples through investment in ICTs as a

tool for meaningful EnCDD and knowledge derived from research into this area in Australia. This thesis aims to contribute to addressing the knowledge gap the area of ICT4EnCDD for remotely located Aboriginal communities.

The review indicates that Indigenous Australians are grossly disadvantaged. They endure the greatest statistical disparities of any developed nation in core areas of health, education, employment and housing. A legacy of government intervention and assimilation policy, and vast socio-cultural difference has removed from Australian Aboriginals much of the opportunity and prosperity of their country's non-indigenous citizens. However, at best, the current normative economic development model does not easily harmonise with the reasoned agency and desired freedoms of many Indigenous Australians. This does not imply mainstream economic objectives are of no interest to Indigenous Australians per se.

International support for the Human Rights of the Indigenous Peoples of the world valorises in principle cultural diversity, yet in practice these principles are not well understood nor applied. Presently, many Aboriginal groups, and in particular, those in remote localities are engaged in dependency life cycles through government-provided welfare. The ongoing disadvantage, marginalisation, and even crisis quality of life experienced by remote Aboriginal communities suggest the welfare state for many remote Aboriginals' does not adequately represent or give agency to their targeted freedoms. It merely provides a temporal means of existence while the sectors of governance; heritage; cultural acceptance; land rights; health; and education resolve to better serve Aboriginal people in the longer-term.

Allowing Indigenous Australians to engage *their* reasoned agency through supporting EnCDD initiatives may serve alternative economic, social, cultural and political development initiatives as conceived to overcome some degree of their marginalisation from national prosperity. However, this alternative approach entails a process of trust and freedom from those whom are normally charged with the governance of development direction. An alternative endogenous approach needs to embrace participatory and self-directed decision-making and ownership approach to agency. This literature review affirms that grass roots, community

driven, owned and directed initiatives must be accepted and supported in-order to help promote meaningful Aboriginal development. The underlying thesis assumption is that research in the area will offer are lessons for development agencies, academics and practitioners, and for communities pursuing endogenous development aspirations. Hence, this thesis assumes insights into how Aboriginal EnCDD may be supported by ICT investment and interaction in remote regions is of great value, with implications for both Aboriginal and national communities alike.

4.2.1 Interrelated development concerns and interpretive framework for research

The multidisciplinary material in this literature review bring forth a number of theoretical and practical insights, which justify engagement with research questions articulated to concerns to understand: how ICT-interaction may increase information access and dissemination for Aboriginal people in remote localities to identify their targeted freedoms, and successfully engage *their* reasoned agency processes to mobilise endogenous Aboriginal community agency within development initiatives? Figure 4.4 illustrates the multifaceted character of theoretical and practical concerns that frame contemporary Indigenous community development issues, challenges and outcomes from differentiated exogenous and endogenous perspectives. It highlights why the meaningful development is a fundamental goal of an endogenous approach. The figure captures the multifaceted theoretical and applied framework derived from this literature review with which to investigate the role of ICTs in Aboriginal EnCDD. These multifaceted ideas will guide the interpretations of the case-based research.

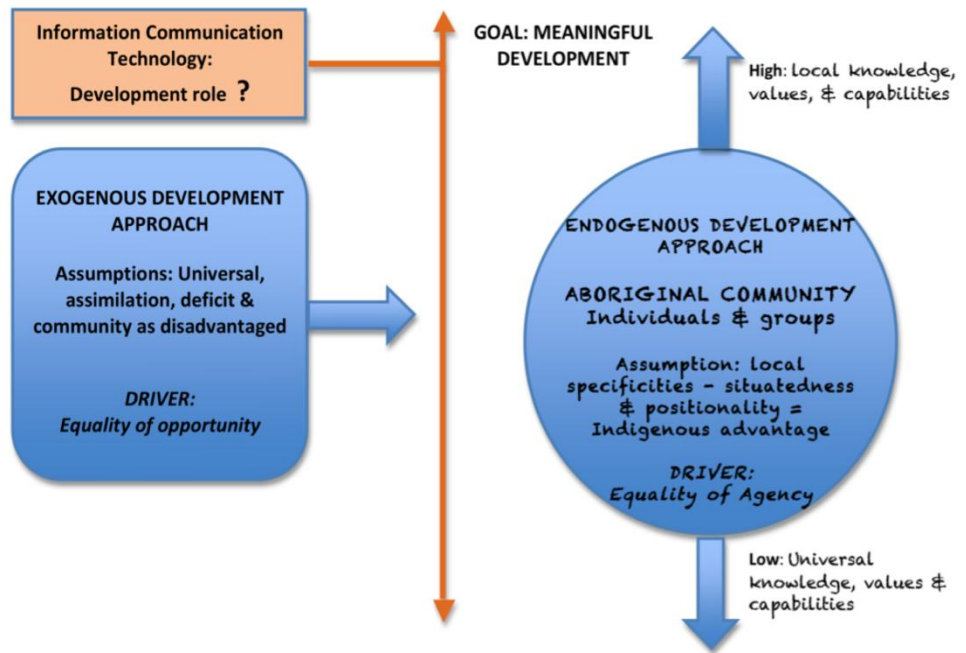


Figure 4.4: An integrated exogenous/endogenous development interpretive framework to investigate the role of ICTs as development tool in an Aboriginal community context.

Chapter 5

Research methodology

5.1 Introduction

Chapters 3 and 4 present multidisciplinary views to conceptualize a multi-faceted framework for development and the relevance of the revolutionary developments in ICTs to investigate these interactive technologies as tools for development agency. This material, coupled with the discussion in Chapter 2 on Aboriginal disadvantage, calls for the leveraging of endogenous voices in development discourse and for research to engage with endogenous positions to more meaningfully redress the inequities and disadvantages experienced by the world's Indigenous peoples. In responding to this call, this chapter discusses the key methodological concerns that frame the research design applied to investigate the use of ICT as an appropriate technology for Aboriginal EnCDD.

The adoption of the critical post development EnCDD research paradigm means that the researcher has had to build multicultural and qualitative capabilities beyond the positivist paradigm assumptions of his prior training and research experiences. Hence, this chapter outlines the key philosophical and practical lessons necessary to understand the credibility of qualitative methodological work, its suitability for such a research project, and the criteria on which validity claims can be made. Section 5.2, provides a background to the research methodology; Section 5.3 discusses the key ontological and epistemological assumptions that frame the research methodology and design; Section 5.4 justifies the case-based research approach, considers the role of the researcher as 'bricoleur' (Denzin & Lincoln 2008a), and the choice of action research methods; Section 5.5 discusses the specific qualitative tools used for data collection and analysis; Section 5.6 outlines the interpretive framework for analysis; and Section 5.7 discusses ethical issues when doing research on and with Indigenous people.

5.2: Background to the research methodology

This research derives from the researcher's multifaceted experiences over seven years as a:

- Project officer with the Muresk Institute, Curtin University: Centre for Sustainable Mine Lakes (CSML);
- Research assistant with Curtin University: The Desert Knowledge Cooperative Research Centre (DK: CRC);
- Research officer for the Tjupan Ngalia Tribal Land Aboriginal Corporation (TNTLAC);
- Aboriginal community volunteer/consultant involved in a number of enterprise and community development initiatives in remote Aboriginal communities; and
- PhD student at Curtin University, Curtin Business School, School of Management.

Much of the university project work was action-oriented (Stringer 2007). However, the mixed and limited successes of project work experiences led the researcher to concur with Stringer (2007) that 'when practitioners remain locked into their own perceptions and interpretations of the situation, they fail to take into account the varied worldviews and life experiences of the people with whom they work' (p. xv). The contrasted character of academic and Aboriginal community perceptions, interpretations and agency became a concern. In response to this asymmetric power and cultural pluralism, Stringer asserts that 'community-based action research works from the assumption that all people affected by or having an effect on an issue should be involved in the process of inquiry' (Stringer 2007, pp. xv-xvi). The researcher became concerned that the positionality of university actors, institutional tertiary sector agendas and interrelated institutional assumptions about research dominated the perceptions, action and inquiry on how the lived realities of particular Aboriginal communities were being interpreted. The power disparity in participant voice, agency processes and outcomes was evident. Thus, the need to leverage endogenous voices in perceptions, action and inquiry became

a salient issue (see Kindon 2010). Hence, this research project emerged out of reflection on the need to account for the mixed success of the ICT aspect of many projects, concern for the short-term and long-term impacts of projects, the lessons that might be drawn from these experiences from multiple standpoints, and the broader implications of these lessons for participants (individuals, community and institutions) and their development aspirations.

The development literature led the researcher to recognize that the action orientation and long-term nature of this project work, and the subsequent quality of relationship and trust built with various individuals and groups of Aboriginal peoples were valuable resources for community-driven action-based research. The strengthening of relationships between Aboriginal community actors and the researcher reflected the key positive characteristics that Stringer (2007) attributes as fundamental to action research. These strengthened relations presented a valuable opportunity for 'co-operative inquiry', for 'research 'with' rather than 'on' people' (Heron & Reason 2006), and as a basis for the 'collaboration and joint knowledge building' (Senge & Otto Scharmer 2006) associated with community-based action and learning. Like action research, community action research confronts the challenges of producing practical knowledge that is useful to people in the everyday conduct of their lives (Reason & Bradbury 2006). The researcher believed that insights from community action research could have policy and agency implications for interpretations of Aboriginal disadvantage, and determine areas for future action and research regarding Indigenous ICT4D, especially in circumstances where remoteness, colonialism, and systemic disempowerment and disadvantage are prevalent.

5.3 Research assumptions

There are two conventional choices for research and knowledge building: positivism (empiricism) and interpretive models of research (Gregory & Johnson 2009). This section outlines why this project adopts the qualitative interpretive framework and avoids a positivist framework. Positivism essentially affirms that only scientific (Western) knowledge is authentic knowledge, and discounts the validity of

metaphysical (non-scientific) speculation (Gregory et al. 2009). Qualitative interpretive models are one of the most important aspects of critical theory and post-colonial concerns for social justice. The model follow the premise that in qualitative research there can only be interpretations of observations, and that making sense of what has been observed, i.e., communicating understandings, 'is a fundamental feature of human existence, as encounter with the unfamiliar always demands the attempt to make meaning, to make sense' (Kincheloe & McLaren 2008, p. 414).

For Denzin and Lincoln (2008a), the practice of doing social research, a process inextricably linked to European imperialism and colonialism, led to the development of a range of research methodologies 'for reports about and representations of 'the Other'' (p. 1). More specifically, 'qualitative research is a situated activity that locates the observer in the other world, and consists of a set of interpretive material practices that make the world visible' (p. 4); it turns the world of 'Others' into a series of representations, using field notes, interviews, conversations, photographs, recordings and memos. Denzin and Lincoln (2008a) further explain that qualitative research attempts to make sense of observations in terms of the meanings people bring to them. To address this research's questions from critical and post development interpretations necessitates capturing, interpreting and communicating – to make visible – the development realities of a community of geographically remote Australian Aboriginals, and from multiple standpoints. In support of the conceptual logic of EnCDD, the research aims to 'give voice' to and leverage local Aboriginal interpretations of the role ICT as appropriate development technology to address their particular and local development disadvantage and asymmetric position in normative development processes. 'For Indigenous peoples to 'speak back' suggests at least the possibility of a relational quality of 'listening to'' (Porter 2010, p. 2).

5.3.1 Ontological assumptions

The ontological assumptions of this research concern questions of how to bring-to-life specific Australian Aboriginal 'ways of life', or worldviews. Within development

research, there is emergent recognition of the unique challenges associated with researching the lived realities and development challenges of Indigenous peoples (see World Bank 1997; Denzin, Lincoln & Tuhiwai Smith 2008). Ontology is concerned with the philosophy of 'being', and identifying what people believe to be the truth, or case. Ontology is often formulated by considering interactions between the world-as-is, and related ideas and conceptions about the world. Ontology is represented through human geography and its character of investigating the relationship between society and nature, and of concept of place versus space (Gregory et al. 2009). Gregory et al.'s definition emphasizes the contextual (place and time) character of human interpretations, aligning with Sumner and Tribe's (2008) concern for the 'positionality' and 'situatedness' of international development. Within social science, ontological assumptions are those surrounding the nature of the subject matter of the research. The literature acknowledges development as involving both insider and outsider ontology. The post development notion of meaningful development calls for an ontological approach that redresses power disparities between the two, specifically capturing and leveraging the insider worldview – in this case, endogenous Aboriginal participant interpretations of how ICT might be used to achieve this. Consensus about the shared marginalisation and disadvantage characteristics of Indigenous communities justifies this approach when conducting research into Aboriginal community development. This research assumes that leveraging Aboriginal ontology creates the opportunity to capture specifically located and positioned Aboriginal actor views into individual and collective agency for community development. Beyond this it may also enable broader extrapolation on the interrelationship between the Aboriginal development imperative and role of ICT interaction for other regional, state, national and International Indigenous communities.

5.3.2 Critical ontology

Critical ontology aims to redress the disparity between endogenous and exogenous ontology in development discourse. It is a method and tool in philosophy that considers philosophical questions as ontological questions, addressing them from a

critical perspective (Kaipayil 2002). It frames methodological concerns for how to redress the representational and interpretive disparity and throw light on how this disparity works to maintain an imperial or colonizing character to the concepts and design of social research focused on Indigenous peoples. For example,

Despite the guarantees of the Treaty of Waitangi, the colonialization of Aotearoa/New Zealand, the subsequent neocolonial dominance of majority interest in social and educational research have continued. The result has been the development of a tradition of research into Maori people's lives that address concerns and interests of the predominantly non-Maori researchers' own making, as defined and made accountable in terms of the researchers' own cultural worldview(s) (Bishop 2005 cited in Denzin & Lincoln 2008b, p. 1).

Denzin and Lincoln (2008b) cite Bishop to substantiate support for 'critical Indigenous pedagogy' (CIP) to promote a productive dialogue between Indigenous and critical scholars. Following the authors' premise that all inquiries are both political and moral, CIP values the transformative power of subjugated Indigenous knowledge, the pedagogical practices that produce these knowledges, and seeks forms of praxis and inquiry that are emancipatory and empowering. CIP aims to embrace the commitment of Indigenous scholars to decolonize Western methodologies and to challenge the role of Western science within the colonial apparatus. Critical pedagogy affirms Indigenous knowledge to be a rich social resource for attempts to bring about social change. This research does not strictly follow a CIP methodological approach, but acknowledges the pertinence of both Bishop's (2005) and Denzin and Lincoln's (2008b) critical views: for as Bishop states, a colonialist intellectual legacy influences the formation of research through the lens of the exogenously positioned researcher, which consequently risks the Indigenous-desired research outcomes becoming neglected. This neglect is problematic during critical-oriented research as theory recognizes that the wants and desires of the actors are central to the outcome and meaningful character of development processes. The inclusion of core emancipatory aspects of a CIP within Indigenous development research allows the specificities of Indigenous positionality and situationality to be incorporated under the premise that it will balance out the

bias of a colonialist lens. It takes time to achieve this balance of input, a notable long-term characteristic of this research.

Academics, professional researchers, and students are comparably privileged to some or all of their class, race, nationality and gender. Subsequently, their thinking is influenced by embedded histories and cultures (Pain 2010), which can have profound impacts on the production and shape of knowledge in the research process (see Moss 2001). To address this dilemma, knowledge and research accounts can be situated through the use of social theories, including reflexivity and positionality (England 1994; Reay 1996; Lincoln & Guba 2000). These views confirm the need for Aboriginal community development research to adopt research methods that work to capture and communicate the specificities of local Aboriginal ontology in ways that leverage understanding of their points of view, worldview and lived realities, an essentially intercultural Aboriginal and academic 'dialogic' (Guba & Lincoln 2008) process.

The issue of ontology highlights the complex and sensitive nature of research by a non-Indigenous researcher with Indigenous peoples. The researcher became all too aware of these issues through his experiences as a non-Indigenous project officer engaged in multi-stakeholder academic and corporate initiated development project work. The project-related experiences led him to believe that the potential for 'meaningless' research objectives and inaccurate interpretations of data from an Aboriginal point of view need to be accounted for and avoided. From the political and equity positions these are moral issues of equal weight to concerns for the credibility of the formal research methodology. The next section seeks to address this critical dimension to the research design, to justify the chosen project methods and its credibility aims. The literature review affirms that leveraging endogenous ontology, i.e., the communication of insider views is likely to have action and empowerment implications for the Aboriginal participants, and hence, be of relevance for broader interpretations of Aboriginal development policy and action.

5.3.3 Epistemological assumptions

Epistemology is concerned with defining knowledge and further explaining how it works. While ontology accounts for 'what is in the world', epistemology asks 'how it is possible to know the world' (Gregory et al. 2009) and how credibly communicate this knowledge. Multiple participant knowledge, and endogenous and exogenous standpoints frame the epistemological assumptions of this research, taking into account their diverse endogenous (local) and exogenous (universal) communicative characteristics. Multidisciplinary and institutional knowledge on the particular community development concern, and its colonial history act to communicate plural exogenous interpretations of the multidimensional character of the lived reality of a specific aboriginal community in a specific geographic setting. The Indigenous knowledge and assumptions of informants from the Tjupan Ngalia people, located in Leonora Western Australia communicate specific local interpretations of the multidimensional character of their lived reality. Thus, the research incorporates Indigenous and non-indigenous qualitative and quantitative epistemology to 'give life' and contextualise the lived reality of a remote Aboriginal community. The assumption is that plural epistemologies communicate a number of interpretive 'positions' on the agency role of ICTs in development processes. Additionally, a critical approach to epistemology leverages the value of 'tacit knowing' (Heshusius 1994) and 'connected knowing' (Bishop 2008, p. 157) of Indigenous knowledge. 'In other words, there is common understanding and a common basis for such understanding, where the concerns, interests, and agenda of the researcher become the concerns, interests and agenda of the research and visa versa' (p. 157).

Drawing on practical lessons learnt from the international development challenges of knowledge sharing in the role of technical cooperation, Denning (2002) argues for critical awareness of epistemology assumptions in development. He identifies key lessons related to the nature of knowledge, including: the centrality of sharing knowledge and the need for voluntary sharing; importance of local knowledge, tacit knowledge, and the tacit knowledge of groups; the need for time to learn and autonomy; the challenge of unlearning; the impossibility of transferring knowledge;

the non-linear evolution of knowledge, and the difficulty of sharing knowledge. These reflective lessons and pragmatic issues indicate the relevance of epistemology that captures and leverages endogenous views, knowledge and action. This thesis assumes these critical ideas about the types and forms of knowledge to be at the core of critical assumptions for research into interpretations of locally meaningful development agency of real communities located in real places.

5.4 A case-based research approach

The research adopts the notion of a 'case study' to convey not a methodological choice, but a choice of what is to be studied (Stake 2000). Stake argues that the case study label draws attention to the question of what can be learnt from a single case. In addition, 'boundedness and behaviour patterns are useful concepts for specifying the case' (Stake 1988 cited in Stake 2000, p. 436). The boundedness of this case articulates to the cultural, geographic and development specificities of the particular Tjupan Ngalia people located in Leonora Western Australia. However, as Stake (2000) notes, understanding an individual case may be enhanced by references to other cases. As a project officer engaged in a variety of remote and regional Aboriginal development research projects, the researcher's involvement in a number of other ICT-related community projects provided opportunity for comparisons and to further inform insights on the complexities of the core case study, and potentially draw out useful extrapolations.

Case researchers seek both what is common and what is particular about the case, but drawing from all of the following aspects, the end result regularly portrays something of the uncommon (Stouffer 1941, cited in Stake 2005, p. 447):

- The nature of the case
- The case's historical background
- The physical setting
- Other contexts (e.g., economic, political, legal and aesthetic)
- Other cases through which this case is recognized
- Informants who have knowledge of the case

A holistic methodological approach to a case study calls for the multi-methods that best support investigation of these complexities. The specific multi-methods used are deemed to address the 'contextual', 'dialogic' and 'self-reflexive dimensions' (Saukko 2008) of the case research, and hence, support its validity claims. Typically, the methods employed are organized around a topical issue or thematic question, which has complex, situated and problematic relations that invite attention to ordinary experience. Stake argues that the researcher is a 'didactic' teacher, teaching what he has learnt, or 'discovery learning' through the provision of material for readers to add to their own inquiry and understandings. 'Starting with a topical concern, researchers pose foreshadowed problems, concentrate on issue-related observations, interpret patterns of data and reform the issue as assertions' (Stake 2005, p. 448). In this case, the topical concern is the development imperative of remotely located Australian Aboriginals with thematic focus on questioning the role of ICTs in EnCDD, with the assumptions that issue-related observations will inform an emergent pattern for deeper and more complex interpretations of data.

The case design employs a number of primary and secondary qualitative and quantitative sources of data collection techniques. For example, the material presented in Chapter 6 includes a variety of secondary data to capture and communicate a multidimensional picture of the demographic, historic, geographic, and socio-economic characteristics of the remote Western Australian regional context of the primary case community from exogenous and normative point of view. This material addresses Saukko's (2008) 'contextual dimension'. Chapter 7 captures and communicates naturalistic and endogenous qualitative accounts of the primary case community's ICT-interaction experiences through a chronological and descriptive narrative form to expound on experiences during the community's seven phases of ICT-interaction, and from various participant—observer points of view. This material addresses Saukkos' (2008) notion of the 'dialogic dimension'.

A heavy leaning to such qualitative methods increases the participatory nature of the project and helps facilitate greater levels of both participation and local ownership of the case-based research process (see Chambers 2008, pp. 105-132).

The literature identifies 'participation' as the keystone to building meaningful development processes and outcomes (Kindon 2010). The participatory nature of ICT development work (Singleton et al. 2009; Corbett, Singleton & Muir 2009) encourages ICT related research to methodologically ground the research within the social development theories of participation, empowerment, capabilities, and ownership. These social development theories articulate to action-oriented methodology (Stringer 2007). Case-based methodology and an endogenous community action-orientation emphasize both the multi-model research design and the multi-modal research capabilities of the researcher.

5.4.1 The researcher as a *bricoleur*

Qualitative research has become the central resource for critical interpretive theory, and with this the researcher becomes a 'bricoleur' bringing a range of interpretive concepts and strategies together to develop a deeper understanding of the multidimensional character of a situation/problem and its broader implications (Kincheloe 2001). It is inherently multi-method in focus (Flick 2002) using triangulation to develop in-depth understandings of the phenomenon in questions (Denzin & Lincoln 2008a). Justifying this pluralism, Salamone (1987) asserts that scholarship must venture beyond the confines of specific departmentalized disciplines, addressing cultural ethnocentrism to achieve intellectual synthesis. The choice of research practice depends upon the questions that are asked, and the questions depend on their context. The interpretive bricoleur produces a bricolage, a pieced-together set of representations that is fitted to the specifics of a complex situation (Denzin & Lincoln 2008a). In this case, the bricoleur role aligns with Guba and Lincoln's (2008) identification of a constructivist approach to researcher voice as a '*passionate participant*, as facilitator of multivoice reconstruction' (p. 258).

5.4.2 Action Research

For Greenwood and Levin (2008, p. 72), 'action research aims to address pertinent problems in a given context through democratic inquiry in which professional researchers collaborate with local stakeholders to seek and enact solutions to problems of major importance to the stakeholders'. Thus, generalized solutions

must be modified and adapted to better fit the context in which they are used. These adaptive and 'best fit' assumptions align with Chamber's (2010) call for 'adaptive pluralism' for research and practice in development studies. Grounded in the interpretive character of the qualitative paradigm, the purpose of action research is to gain greater clarity and understanding of a question, issue or problem. It differs from quantitative research, which targets the precise definition, measurement and analysis of the relationship between a carefully defined set of variables (Stringer 2007). Yet, due to its multi-methods characteristics, action research does not exclude quantitative information from a study, and incorporates such data for the vital purpose of meaning making (see Kwan 2010, pp. 573-585).

Stringer (2007) describes the reflective and adaptive role of the researcher within the action research process:

This research stance acknowledges the limitations of the knowledge and understandings of the expert researcher and takes into account the experience and understanding of those who are centrally involved in the issue explored – the stakeholders. By doing so, researchers take into account a central reality of social life – that all social events are subject to ongoing construction and negotiation. By incorporating the perspective and responses of key stakeholders as an integral part of the research process, a collaborative analysis of the situation provides the basis for deep-seated understandings that lead to effective remedial action (p. 20)

Stringer adds that action research encompasses three core characteristics, which allow the stakeholders to explore their experiences, increase clarity and understanding of events and activities, and apply these new understandings to develop effective (meaningful) solutions to the targeted problem(s):

- *Phenomenological* – focusing on peoples actual lived experiences and realities, i.e., Saukko's (2008) contextual dimension;
- *Interpretive* – focusing on the participants interpretations of acts and activities, i.e., Saukkos' (2008) dialogic dimension; and
- *Hermeneutic* – incorporating the meaning people make of events in their lives, i.e. Saukko's (2008) reflexive dimension.

The primary case study story variously captures phenomenological, interpretive and hermeneutic standpoints of seven EnCDD ICT-interaction project phases, experiences and outcomes. The collaborative nature of the community-driven action research process seeks to change the social and personal dynamics of the research situation, and increase not only the involvement of actors within the research process, but also the value of their views. Aside from increasing the individual's capacity to engage in systematic research and inquiry in other contexts, action research builds participants a supportive network of collaborative relationships and ongoing networks (Stringer 2007). Hence, action research not only addresses Bishop's (2005) view on the impact of a colonialist research legacy, but also involves aspects of empowerment and capacity development for the participants. Indicative of the critical and endogenous nature of this research, a conscious attempt to redress normative academic-participant community disparities underpinned the action of the key Aboriginal participant informants driving the community development agenda. As the review emphasizes, both empowerment and expansion of internal community capacity are vital components for locally meaningful development.

The issue of 'participation' lies at the heart of action research (see Kemmis & McTaggart 2000). How it is enacted has impact on the research process and outcome and so thematic observations on how participation is enacted is a key focus. Participatory methods present researchers with a rich range of tools by which local people can direct their research project and produce their own data (see Chambers 2008, pp. 105-229). Section 5.5 discusses the range of multimodal data collection techniques employed.

5.5 Data collection techniques

5.5.1 Qualitative tools

Multidisciplinary frameworks guide the research questions, and assess what information counts as authoritative evidence and knowledge, and collected

interpretable data (Gregory et al. 2009). The specific qualitative tools used to capture the participatory standpoints of the key informants include: participant observation, semi-structured interviews, and formal and informal group and community events. To capture the actions and interpretations of key informants over the seven-year engagement timeframe, the researcher kept a diary, field notes and digital audio recordings (mp3) of participant interviews and digital photographic and video materials of project activities. A sample of key guideline questions, as included in semi-structured interviews on project work, is included in the Appendices.

5.5.2 Participant observation

Within the case study 'participant observation' (see Spradley 1980; Schensuk, Schensul & LaCompte 1999) was the principal method used. After the significant time and involvement with the Aboriginal community the researcher deemed formal research methodologies too confronting for the participants; would negatively impact the types and quality of interactions and responses given; and be counter to the critical aims of the research. The lengthy interaction and observation period meant that strong relationships and a valuable degree of trust formed between community members and the researcher. Hence, participant observation was the most credible method to capture their views, and build and communicate endogenous understanding of individual and community issues. At the core of participant observation is the notion that the researcher aims to participate in the process under investigation so he might gain more intimate knowledge of the research participants and their habits (Kemmis & McTaggart 2000; Gregory et al. 2009).

The research is encapsulated in a broad range of participatory initiatives. These initiatives have nominally been categorized as major projects, conferences and community flashpoints. The researcher made participatory observations during both formal and informal research opportunities, in and out of the field. In-field observations were made during the numerous community visits, trips 'on-country', casual one-on-one and group conversations, community meetings, and research

orientated meetings, or informal gatherings. In most cases, the researcher made notes on observations recorded in one of the many field diaries. These recordings were made either as the observations were made, or at the end of the day during periods of research reflection. Out-of-field observations were made during phone conversations with research participants, and from email dialogue. Such observations were related and compared to the researcher's evolving understanding of the particular individual's socio-cultural character, background community position and views as derived from interpersonal and relationship dialogue. Observations out-of-field were again, noted in a field diary, or in the case of emails, archived for later referral.

5.5.3 Semi-structured interviews

Semi-structured interviews (Spradley 1979; Gubrium & Holstein 2002) were used in some instances during pre-planned one-on-one or small group (<4 individuals) conversations. These consisted of a series of guiding questions or key points, usually all directly related to the theme of the planned conversation, i.e. project direction, evaluation, and individual roles within community development activities. These differed from casual participant observation, as the semi-structured character of an interview infers that there was a specific issue to address or discuss. A sample of questions used in a semi-structured interview is included in the thesis Appendix. Hand-written notes were made of the participant's responses and recorded in a field diary. In some instances, and heavily dependent on both the type of participant, and subject at hand, the researcher made use of a digital voice recorder (Olympus WS-110). The recording was then used to clarify (cross reference) some of the hand written notes, and the context in which participants made certain statements. Again, these were always reflected on in terms of the researcher's understanding of the participants' formative character, and specific positionality and situationality.

5.5.4 Community meetings

During various phases participants held a number of community meetings to discuss issues dealing directly and indirectly with actions and events related. The researcher

rarely called the meetings; community members when deemed necessary generally led them. More often, the meetings were to discuss important community issues. While these meetings were not solely related to this research project, the degree to which this project was succinctly embedded within the greater community development sphere, provided ample opportunities to gather data into project specific matters. Observations were noted in a field diary and reviewed at the end of the day. Voice recordings were taken on occasions, though not favoured for the observable negative impact they have on both peoples' desire to participate in discussions, and the types of responses given, e.g., more vocal participants may dominate and push their own agenda knowing they are on record, while more reclusive and less confident participants further reduce their levels of participation. The regularity of community meetings varied throughout the research. To gain candidacy and demonstrate normative data gathering points, during the first 12 months the researcher drew up a pre-planned schedule of community meetings. However, as the researcher was not living with any of the participating communities and had to undergo substantial travel to reach them (>800kms), pre-planning visits to the community meetings proved difficult. Furthermore, there were the associated costs of travel, and limited field budgets. This meant any of the data gathering periods had to piggyback with related, but externally funded university research involving the researcher. The resulting spread of community contact was not always perfect, yet any imperfections countered by the longevity of community contact. Despite these constraints, community meetings were held that involved project planning, project action and, project reflection.

5.5.5 Quantitative tools

While this research project primarily used qualitative modes of data collection, it incorporated quantitative techniques where applicable. The effectiveness of quantitative approaches to address issues at the heart of social geography, i.e., social justice and inequality have previously been questioned, but they are now accepted as facilitating rich contributions to both understanding and challenging such issues (see Kwan, 2010). As noted, Chapter 6 includes an contextualising interpretive analysis of secondary sourced desk-top data, including demographic

statistical and descriptive material deemed relevant for multifaceted insights into community life in the remote Western Australian location of the Goldfields region. This material support understanding how the geographic and socio-historical specificities of the geo-region have and continue to shape the development experiences, and the constraints and opportunities of particular local Aboriginal people.

5.5.6 Survey

In late 2008, <[SurveyMonkey](#)> was used to conduct a digitized national Indigenous enterprise ICT survey (e-survey). A 30-question survey sought responses from Indigenous Australians actively participating in some form of Indigenous enterprise, on their level of ICT use and drivers of ICT interactions. This data collection method was chosen to provide a broad and snapshot level of information on how other Indigenous Australians are interacting with ICT technology for development purposes. The aim was to provide a linkage between the richer layers of knowledge gained from the primary case, the less intense researcher experiences with several other Aboriginal communities, and secondary data, such as that sourced from the Australian Bureau of Statistics (ABS) Indigenous ICT data. Over 400 Indigenous organizations were asked to participate in the ICT e-survey, receiving 83 anonymous responses. Potential respondents were randomly sourced from a number of National Indigenous business databases, random Internet searches for contact details and in-person. Potential respondents were contacted: via email and provided with a hyperlink to the e-survey, over the telephone with responses given verbally and recorded, or provided with physical copies of the survey. In one instance, a group of respondents were provided with hard copies of the survey, questions were read to the group by an appropriate consultant and the group responses were recorded in text. In all instances, respondents and associated data were de-identified and are not traceable back to respondents.

This survey was incorporated into the project as a contingency source of data in response to concerns for participant communities being unable or unwilling to

contribute to the findings of the study. At this time, the researcher's budget was virtually consumed, and a number of the University projects that facilitated his contact with participant communities ceased to function. Therefore, the survey offered a means to gather data that if required, could possibly provide some form of comparative data with which this project could be completed. Subsequently, the researcher negotiated a direct access role with the Ngalia community, which allowed participant observations and ICT interaction to continue, but with a stronger endogenous development agenda. Upon evaluation at the end of the study, it was concluded that the data collected during the survey was of little direct value to the highly involved and locally focused case-oriented observations, and thus, the survey data is not included.

5.6 Data organizing and reporting methods

The previous sections highlight how a number of methodological parameters frame the methods chosen to report this research: its ontological, critical and epistemological assumptions; its aim to leverage endogenous participant voice and agency; the multi-modal qualitative and quantitative methods designed to capture interpretations of the case study context and 'give life' to the participant experiences, and from multiple points of view. Hence, Chapter 6 reports on the development story of the local geo-region with emphasis on the socio-political consequences of this colonisation for the region's Aboriginal communities. Chapter 7 chronologically and descriptively narrates on the key community events involving the ICT-interaction and EnCDD agency through the seven phases of projects and conference initiatives, and catalytic community flash points. Each phase involved a distinct community action process involving features, such as diverse participants, ICTs used, participatory approaches employed, aims, outcomes and lessons learnt. The consistency of these features emerged to become the underlying organising principles for projects. To tell a credible and compelling story of the unfolding aims, views, actions and outcomes, the views and reflections of the participants and key informants are incorporated in their natural mode of oral expression where pertinent. To protect the identity of participants and key informants a numbered gender and age group coding system is used, e.g., participant male 1 (PM1),

participant female 1 (PF1), and participant youth male 1(PYM1). Photographic material is included to further 'give life' to the experiences.

Reflection on the organising principles embedded in this unfolding narrative enabled the researcher to identify an emergent and unifying theme pattern for organizing data for summary and interpretation. Together, these emergent and unifying theme patterns led to the development of 'an agency elements of ICT-interaction for EnCDD' schemata. A number of questions emerged in association with each of these elements. Each project phase is summarised according to the agency elements ICT-interaction for EnCDD schemata, which incorporates the following elemental categories:

- The participants – who was involved?
- The ICT used – what technology chosen and why?
- The participatory approach – what modes of community direction, decision and action were employed?
- Development theme – where the projects advocacy, cultural maintenance, strengthening or economic in development agency orientation?
- Outcomes – what outcomes/lessons learnt resulted for the community?

This data organizing and reporting method is used to: vividly yet systematically characterize the unfolding and diverse nature of these ICT-interaction projects; to elevate endogenous voices and knowledge; and to elicit empathy, reflection and insights in the reader, and create an integrating framework for reflective analysis. The summary schemata organises the endogenous experiences into a relevant elemental coding system that functions thematically across all the project phases, and arguably, this data organizing and reporting works to give intellectual credibility through addressing the 'self reflexive dimension' (Saukko 2008) to the project. The intermixed descriptive and early narrative organisation also works to demonstrate the iterative and inductive aspects of participant learning fundamental to positive community-driven action research. Similarly applying the agency elements of ICT-interaction for EnCDD schemata, Chapter 8 similarly organizes and reports on the experiences of a number of external ITC4D projects, as undertaken by the Collie,

Titjikala and Ceduna Aboriginal community, to offer comparative and supplementary insights into the appropriateness of ICTs as development tools.

5.7 Framework for data analysis

The action-oriented, participatory nature and reflexive quality of each of the individual, but interrelated project phases meant that interpretive analysis of project action, process and outcomes revealed further insights into the themed concerns, which in turn informed the development of the 'agency element of ICT-interaction for EnCDD' as an integrative framework for further analysis. The researcher attempted to give meaning and sense to what was observed (Denzin & Lincoln 2008a) in terms of how Aboriginal actor participation, ICT-interaction and outcomes articulate to the Ngalia pursuit of reasoned agency for meaningful development, as summarised in the endogenous asset-based approach to development and ICT-interaction in Figures 4.3 and 4.4 in the literature review. This was a challenging interpretive process as the researcher had to address the realm of the conceptual and intercultural complexity, involving long periods of participation, observation, reflection, learning and un-learning. The unconventional long-term, evolving, experimental and specific Aboriginal community character of the case study participants, and endogenously driven character of the research meant that qualitative research software, such as NVivo, was not applied to manage and analyse the data. Reflective analysis applied to summarise the contents of each the project phase narratives during the reporting stage enabled further distillation and elucidation into the workings and usefulness of the agency elements in the ICT-interaction for EnCDD framework.

Thus, Chapter 9 extends analysis and synthesis of the various case project phases to discuss in an integrated manner and in greater depth the implications of the overall project in the elemental framework terms of 'the participants', 'ICT used', 'participatory approach', 'development themes' and 'outcomes'. The chapter discusses the case analysis in terms of the research questions associated with each of these elements and makes recommendations relevant to the development aspirations of the primary case community with implications for government policy

and key resource industry corporations engaged in mining operations in the Leonora district of the Goldfields region of WA. This reflexive analytical approach contributed to the development of an integrative case-based summary, as represented in Figure 9.2 ICT4EnCDD participatory-action framework. Figure 9.2 captures multifaceted and generative insights as drawn from each of the case project phases into the various elemental components of the agency framework elements. This research assumes that this chapter encapsulates the 'reflexive' dimension of the research, and together with the 'contextual dimension' of Chapter 6 and the 'dialogic dimension' of Chapter 7 and 8, the three chapters align with the methodological validity assumptions in Saukko's (2008) 'Three validities in an integrated framework' (p. 458).

Extrapolating on the case-based material included in Chapter 9, Chapter 10 discusses the broader socio-cultural, economic and policy implications of the role of ICTs as appropriate technology to address the development disadvantage of remote regional Australian Aboriginal communities. The case findings inform more generally issues related to the thesis themed concern for the opportunities and constraints of ICT-interaction for meaningful Aboriginal EnCDD in remote regions. The research assumes that insights drawn from the multifaceted case research may have relevance for policy, industry and development practitioners concerned with human rights and international development practice and the use of ICTs as appropriate tools to address the development imperatives of the Indigenous peoples of the world. These research findings underpin recommendations for further research.

5.8 Ethics and issues of doing research on and with Indigenous peoples

The discussion on methodology in this chapter affirms this to be a research project that is highly reflective of the ethical responsibilities of undertaking research with Indigenous peoples (giving thought to their vulnerability). Every effort was made during this project to follow an ethical approach to the research that enabled moral and authentic participation with Indigenous peoples. The objective was to permit

knowledge to be co-generated and shared with interested communities, while seeking pathways for Indigenous peoples to share in the benefits and 'profits' of this research (Lincoln & Denzin 2008). This research project strictly adhered to *The Australian code for the responsible conduct of research* (NHMRC 2007), and *The Human research ethics guidelines* of the Curtin University Office of Research and Development (CUORDn.d.) Curtin University forms concerning the issues of consent and ethics clearance are included in the thesis Appendix.

Chapter 6

The development context of the case study

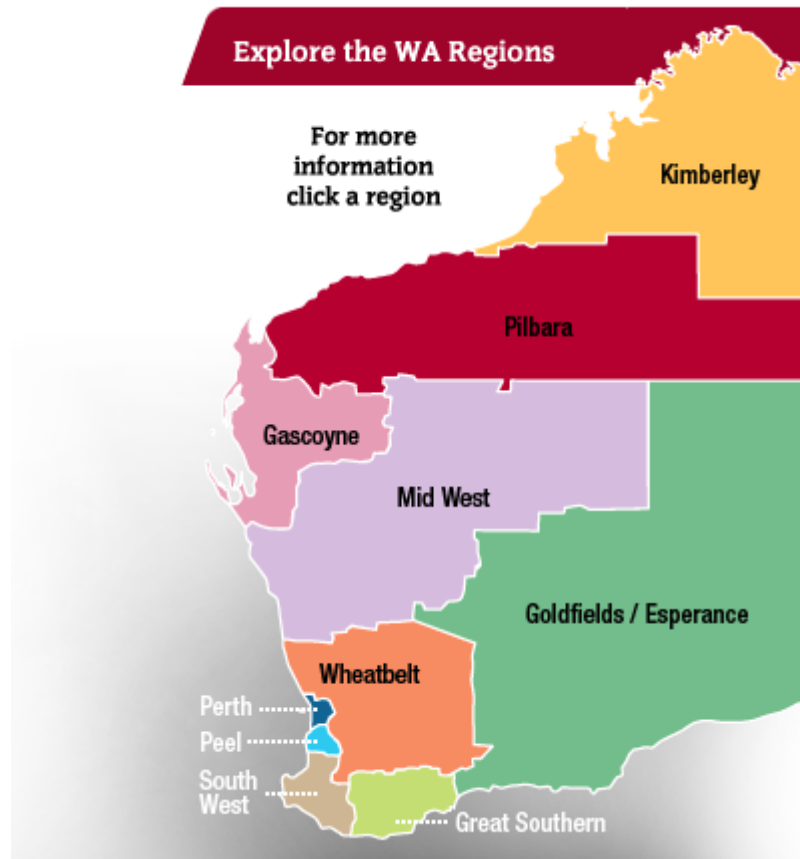
6.1 Introduction

This chapter addresses the contextual dimension of the primary case study. Sections 6.2, 6.3 and 6.4 draw on a variety of secondary sourced data to capture and communicate a multidimensional view of the geographic, demographic, historical and socio-economic characteristics of the development of the remote Goldfields region of Western Australia from exogenous and normative point of view. The material included highlights the consequences of this development reality for the local Aboriginal peoples. Drawing on the relevant literature and the deep local knowledge of community key informants, Section 6.5 presents background material on the EnCDD agenda of the Ngalia Peoples.

6.2 The Goldfields region of Western Australia: Key geographic and demographic characteristics of the research context

6.2.1 Physical and climatic characteristics

This section identifies the physical geographic location and climatic characteristics of the Goldfields region of Western Australia, and discusses how these have shaped the particular local human history and the lives of particular groups of people who live there. Figure 6.1 indicates that the Goldfields region of Western Australia is the largest of the nine regions that form the state. The region's area is 771276sgm, largely consisting of a low flat plateau, made from ancient Precambrian rock. The Region's main town of Kalgoorlie Boulder covers a shire area of 95575.7sgm (ABS 2006b).



Source: Government of Western Australia, Department of Regional Development and Lands (viewed 1 May 2012

<<http://www.rdl.wa.gov.au/regions/statewide/Pages/default.aspx>>).

Figure 6.1: Goldfields region of Western Australia

The region has high summer temperatures (25.6°C max annual average, compared to Perth 24.4) and low annual rainfall (241mm) (Australian Bureau of Meteorology n.d.). There are no permanent rivers in the Goldfields region, and rainfall is rapidly absorbed into the ground post-precipitation. The soils are generally infertile. Subsequently, it supports some of the lowest agricultural stocking rates in the world, with figures as low as 0.053 median stocking rate (dry sheep equivalent per ha) cited for 2006 in the *State of the environment report* (2007). Generally, the physical and climatic characteristics of this region are considered harsh (especially the interior zones), and less favoured by the state's population, who prefer to live in

the more habitable and productive western coastal regions of the state (Government of Western Australia 1999).

6.2.2 Population characteristics

According to the 2006 census, the Goldfield's population consists of 59,000 people, of which 28,242 live in the region's main settlement of Kalgoorlie-Boulder (ABS 2007). This is 2.7 per cent of the State's population (State Training Board (STB) 2008). This main settlement is located 595kms (eight hours drive) from the state capital of Perth. Another quarter of the population live in the Shire of Esperance, with the remaining residents, very sparsely dispersed throughout the region. Population growth rate from 2001 to 2008 averaged 0.75 per cent (STB 2008). In 2008, 53.5 per cent of the regional population were males, with the largest group (33%) aged 25 to 44 years old (STB 2008).

Ten per cent of the region's population identify as of Aboriginal descent, which is substantially higher than the state-based figure of 3.4 per cent, or the national figure of 2.3 per cent (ABS 2010b). The region's Aboriginal population consists of a diverse range of groups (clans) (see Liberman 1985) and kincentric-based social organizational networks (Berndt & Berndt 1968; Liberman 1985). These networks contribute to complex socio-cultural population characteristics that affect development initiatives. Primarily, this Indigenous kincentric socio-cultural pattern highlights the reality that Aboriginal culture, traditions and identity are diverse within the region, and hence, involve diverse development goals and ambitions. Arguably, this cultural diversity has the potential to limit the success of pan Aboriginal conceived development solutions in the Goldfields' Region.

6.2.3 Development history characteristics

Prior to European settlement, evidence suggests that for up to 40,000 years prior, and in the late 1800s, numerous groups and sub-groups of the native Aboriginal peoples inhabited the Goldfields region. There is substantial evidence that the region (especially the Northern Goldfields) was historically significant to local Aboriginal people through its cultural distinctiveness and richness of both law and ceremony (see Liberman 1980; Liberman 1985; Howitt 1996; Federal Court of

Western Australia (FCWA) 2007). Upon the arrival of Europeans and the formal colonial settling of the region, local Aboriginal people were forcibly removed from their traditional lands and/or placed in newly established service centres that are the small regional towns. This resettlement pattern coincided with the establishment of the first era of the mining resources industry. The discovery of subterranean gold and its extraction led to the region's first era of wealth from mining. During this early development period, which occurred between the years of 1893-1905, gold from the region became the state's major export (see Bolton 2008, pp. 62-106). Post this gold-led boom the region diversified through an extensive and broad acre pastoral industry (Bolton 2008).

Aboriginal people were, on occasion, given the opportunity to provide labour to the pastoral sector in return for lodging and subsistence. Generally, those people not involved in the pastoral industry were based at 'mission settlements'; outstations operated by religious organisations, whose missionary agenda targeted the extinguishment of Aboriginal culture for Westernised Christian beliefs and civilizing practices, a similar colonial pattern to elsewhere in remote and regional Australia. This early colonial assimilation process occurred under the administration of the Aborigines Act of 1897, by the government appointed Chief Protector of Aborigines, who was deemed to manage Aboriginal welfare through the admission of Aboriginal children to these missions (Bolton 2008).

In 1965, the Federal courts ruled that an Aboriginal worker should receive equal pay. However, pastoralists deemed this to be unaffordable and discharged many of their workforce, who were forced to move to the towns. 'With little demand for their skills, limited job prospects and legal access to alcohol, these displaced Aboriginal communities faced daunting social problems beyond the imaginative grasp of most Western Australians' (Bolton 2008, p. 157). In 1967, the Commonwealth government removed the discriminating clause against Aboriginal peoples from the Australian Constitution (p. 157). Bolton suggests that evidence of this constrained WA imagination is further affirmed by the fact that Western Australia returned the lowest 'yes' votes in the referendum.

From the 1980s to the present day, the Goldfields pastoral sector slowly collapsed and gave way to a resource boom renaissance targeting a broader range of minerals found within the region, i.e., gold, iron ore, uranium, copper and nickel. For a brief moment in 1974 under the combined State and Federal administration of Aboriginal policy an attempt was made to acknowledge the rights of Aboriginal people to choose either the path of assimilation, or a communal and traditional lifestyle. However, Aboriginal people in the region remain marginalised from much of the economic activity that occurs throughout their traditional lands (see Bolton, 2008, pp. 170-171).

This deeply entrenched Aboriginal marginalising pattern continues as mining companies see value in acquiring much of the available pastoral station properties for future mining activities. The colonising industry strategy acts to complicate the attainment of Native Title on such lands. A significant political power disparity exists between the desire of powerful corporations to extract mineral wealth via highly invasive means justified by the economic 'benefit' to the national economy, while a marginalised group of disadvantaged peoples seek to preserve these lands to maintain their deep country-based connection to culture, beliefs and a meaningful existence. Land access throughout the Goldfields region remains a pivotal development issue for the region's Aboriginal people. With the current State 'ownership' of traditional lands, and governance over land ownership decisions, Aboriginal people have been, and continue to be, removed or excluded from much of the region's development decisions and actions. At its broadest level, they remain disempowered actors in the resource sector's continuing 'boom and bust' business cycles. Despite this trend, and more generally, the Aboriginal people remain one of the primary permanent stakeholder groups in the region's more remote localities (as they have strong socio-cultural connections to specific geo-regional areas that influence their national mobility through land association (see Ganesharajah 2009), and therefore one could postulate that the facilitation of sustainable and long-term regional development initiatives would be a key and long-term concern for Aboriginal peoples.

6.2.4 Population economic characteristics

The region's gross regional product (GRP) in 2008 – 2009 was \$7.2 billion, making up 4.2 per cent of the gross state product (GSP). The region's GRP per capita is around \$124 000 (DTWD) 2008). For ease of analysis the region can be divided into two sectors, (1) the north western sector (Kalgoorlie Boulder, Eastern and Northern Goldfields sub regions), and (2) the south eastern sector (Esperance and Ravensthorpe sub regions). The resource mining industry dominates the northwest sector, while agriculture and fishing industries predominate in the southeast. The resource industry in the north provides a strong base for minerals processing, manufacturing, transport and storage, construction, health care and social assistance, public administration and safety, education and training, and retail trade (DTWD 2008). All of these industries are directly linked to the state of the local mining sector and its level of profitability. Unemployment in this region has traditionally remained significantly lower than the State average (DTWD 2008). However, this lower value includes Indigenous participation in the CDEP as employment, where elsewhere in the State, such as major cities, such people on government welfare would be considered unemployed. This discrepancy factor, coupled with the higher local percentage of Aboriginal residents, raises questions concerning evidence of this localised below state level unemployment rate.

Studies of the economies of remote mining-based regions of the state, including the Goldfields region, highlight concern for the impact of the 'resource curse' (Davis & Tilton 2005) and the local vulnerabilities associated with boom and bust cycles (see Wilson 2004; Pick, Dayaram & Butler, 2008; Haslam McKenzie et al. 2009; Haslam McKenzie 2009; Langton, 2010; Haslam McKenzie 2010). Population numbers are correlated with the rise and fall in prosperity due to shifting global demand and mineral value cycles and resource-extraction based economic activity. In comparison, the region's Aboriginal population is far less fluid and has less access to resource company and community infrastructure. Reductions of economic activity during bust cycles negatively affect local Aboriginal and non-Aboriginal residential groups through the associated reduction in government support, and business

services and infrastructure investment, especially in the state's more remote settlements (see Stafford-Smith, Moran & Seemann 2008).

The cost of living in the region, as with other remote mining regions, such as the Pilbara region, is greater than other state locations. This high cost is largely due to the high and fluctuating demand for labour in a remote location, constrained infrastructure and services, such as housing and education, and government and business investment disparities (Langton 2010). In response, the resource sector defaults to a 'fly-in fly-out' (FIFO), non-residential, shift-working pattern to manage its fluctuating labour market needs (Haslam McKenzie 2010; Langton 2010). This cost and wage disparity reduces the region's affordability, especially for residents engaged in alternative and support services sectors, and more specifically, the local Aboriginal people. This disparity feeds into intra-community tensions.

Coupled with this economic disparity and its associated socio-political tensions, in 2010 the Federal Government transferred up to 200 asylum seekers to Leonora for housing in an unused mining camp for temporary assimilation in the community (Maley & Barrett 2010). Nevertheless, despite the aforementioned economic and socio-political disparities, the resource boom and recent national attention through the refugee housing issue has positively increased some locally available services and infrastructure. For example, the assimilation of 53 children of asylum seekers into the local schools has improved teacher numbers, resources and curriculum opportunities (McLeonard 2010). In addition, government, mining and business sector investment has improved regional ICT infrastructure, such as Internet availability and mobile coverage, and transport infrastructure (Goldfields-Esperance Development Commission 2010).

6.2.5 Population socio-cultural characteristics

The following discussion is a snap shot of the socio-cultural characteristics of the Kalgoorlie/Boulder population. There are approximately 293 persons/km² in the Kalgoorlie/Boulder statistical division, with 8.3 per cent of the total population being indigenous people compared to the Western Australian indigenous

population figure of 3.4 per cent (ABS 2006c). The population characteristics of the Goldfields region are largely influenced by the resource sector's fluctuating demand for labour and particular corporate strategies, such as fly-in-fly out (FIFO) labour market residency. The FIFO population is disproportionately male (Langton 2010), while the gender mix of the resident population is more balanced – 16,036 males and 14,160 females. The high mobility of the population is reflected in the 2006 census figures of 28.2 per cent reporting living at a different address one year ago and 54.7 per cent five years ago (ABS 2008). The greatest proportion of Aboriginal population in the Kalgoorlie/Boulder area is aged from 0 to 20 years, while the non-Indigenous equivalent is 20 to 40 years (ABS 2006c). Such figures are supported by the number of adult residents attracted to the region's resource industry, and a high birth rate and lower longevity among Aboriginal peoples (ABS 2010c).

In the Kalgoorlie/Boulder area English is the primary language spoken, with 83 per cent of people citing it as their only practiced language and only 6 per cent of the population over 15 years speaking an language other than English at home. Some 54 per cent of the population nominates Christianity as its religion with only 0.5 per cent Buddhism, 0.23 per cent Hinduism, 0.22 per cent Islam, and 0.08 per cent Judaism. Over 25.5 per cent of people have no religious affiliation, and only 0.02 per cent state to have Australian Aboriginal traditional religion (ABS 2006c). Some 31 per cent of people completed year 12 schooling, 29 per cent completed year 10, and 3.8 per cent completed year 8 or lower. Of the total number of respondents surveyed, 0.3 per cent reported they did not go to school. However, 16 per cent of people did not state their highest level of education, potentially representing a greater number of people who did not go to school (ABS 2006c). Housing in the regions main settlement (Kalgoorlie/Boulder) is dominated by 'separate houses' (87 per cent of the population), 6.4 per cent occupy town houses, 3.7 per cent occupy apartments and 1.7 per cent occupies caravans or other on-permanent housing (ABS 2006c). Of these figures, 17 per cent fully own their dwellings, 45 per cent are currently purchasing them, while 35 per cent currently rent (ABS 2006c).

6.2.6 ICT in the Goldfields Region of Western Australia

In 2006, at the national level, 66 per cent of dwellings in major cities had access to the Internet compared to 52 per cent for very remote Australia (ABS 2006b). This gap is greater for Broadband access with the corresponding access figures being 46 per cent and 24 per cent (ABS 2007b). The remote characteristic of the Goldfields region means its access to ICT infrastructure and services reflects this gap reality. Limited ICT infrastructure and access works constrains regional business and community development opportunities. This constraint suggests that sectors of the populations in the remote regions of Western Australia share 'digital divide' (Singer & Ansari 1977/1992; Norris 2001) realities with rural regions of developing nations.

Due to the region's high level of mining Industry activity, however certain areas within the Goldfields region that would otherwise experience limited ICT access, benefit from a cross-flow of Industry serviced ICT infrastructure and connectivity. In many cases, small and isolated regional towns, or Aboriginal 'outstation' communities hundreds of kilometres away from gazetted settlements can have access to 3G mobile phone signals (and subsequent wireless broad band Internet connectivity), despite some having to generate their own electricity and having minimal other essential services and infrastructure. Such microclimates of remote ICT access present unique and valuable opportunities for not only communication, but also knowledge-based development opportunities.

6.2.7 ICT penetration in the Goldfields Region of Western Australia

This section covers ICT penetration demographics for the region. As Chapter 4 indicates, the Internet has become the central ICT platform on which a diverse suite of services and knowledge transactions can be made. Thus, access to the Internet can be viewed as the primary indicator and measurement of ICT access and penetration, or the digital divide. Nationally, Australia's Internet infrastructure and related services are in line with what would be expected from its developed nation's status. In 2010, there were 9.6 million active Internet subscribers in Australia (42% of the current population), with 92 per cent of these connections being non dial-up format (ABS 2010a). Of these connections, 71 per cent offered

1.5mbps or faster download speeds. Digital subscriber line (DSL) accounted for 44 per cent of the nation's total Internet connections, and mobile wireless was the fastest growing technology in connection access, with a 21.7 per cent increase in the last 12 months (ABS 2010a). Comparatively, 73 per cent of the United Kingdom's population had household Internet connections for the same period (Office of National Statistics 2010); the United States of America had 62 per cent of households connected in 2007 (National Telecommunications and Information Association 2008); and India and China's household Internet penetration rates were 6.9 per cent and 13 per cent respectively (*Internet World Statistics* 2010a, 2010b).

In 2006, 36 per cent of residents in the Kalgoorlie Boulder area did not have an Internet connection at home. Of those that did, 45 per cent had a broadband connection, and 15 per cent had a dial-up connection, with 3 per cent either not stating their connection or listing it as 'other' (ABS 2006c). This home Internet penetration rate of 64 per cent (22% higher than the national figure) exemplifies the high local value placed on 'connectivity' for this remote and regional population. Four Internet Service Providers (ISP) are available in the immediate Kalgoorlie area, with smaller operators utilising existing infrastructure from the two main national ISP of Telstra and Optus. Further afield from the central service centre of Kalgoorlie, communities are limited to two ISPs, and only Mobile Broadband is available outside of gazetted towns, if at all.

The town of Kalgoorlie is the primary supply and service centre for ICT hardware to the majority of the Goldfields region. This is of significance to the region, as the town also supplies and services regions further abroad. Essentially, the next closest towns from Kalgoorlie are:

- Alice Springs, 2,949kms to the East,
- Meekatharra, 715kms to the north west,
- Perth, 600kms to the West, and
- Esperance (408kms) to the South East.

Communities outside of the service centre of Kalgoorlie are required to travel significant distances to purchase and service ICT equipment. Prices are

subsequently greater than metropolitan areas, and a limited ICT equipment range is available to regional communities. How these distance, cost and available range issues affect the successful use of ICTs as development tools within the remote regional case communities will be discussed further.

Currently, Telstra is the main telecommunications carrier in the State of Western Australia (and Goldfields Esperance Region). Telstra, a former Australian government owned and administered organisation has been a fully private and publically listed company since 2005 (National Archives of Australia, n.d.). Telstra has the largest distribution of related infrastructure in the country and offers the greatest coverage range of communications services. Mining companies through the region employ the company's services for the installation of permanent mobile signal towers at mine sites to permit mobile phone communication in remote locations otherwise devoid of such services. These remote Industry funded signals (RIFS) are available for use by non-mine related peoples providing they are able to receive the carrier's signal (have a contract or similar). This practice means that some mine sites in the Goldfields Esperance region become invaluable communication hubs for remote communities, especially the region's Aboriginal population. Issues associated with this industry-community relationship are discussed subsequently.

Despite a digital divide between regional and remote areas and better-serviced metropolitan areas, the status of ICT in the Goldfields Esperance region is 'improving'. The region's population show high levels of interaction and adoption of ICT services and infrastructure, especially Internet-based services and mobile telephone communication. In comparison to metropolitan areas consumer choice is limited, but some services exist in all but the more remote areas of the region. However, as is common throughout similar national comparisons, a digital divide is evident In Western Australia between coastal cities and small rural centres of the Goldfields Esperance region (Turk 2002).

6.3 Leonora – key Aboriginal geographic and demographic characteristics of the primary research case-study community

The primary case study was based in the Shire and town site of Leonora, a small regional town located in the north (28.88°S 121.33°E 376 m) of the Goldfields Esperance region. More specifically, it involved (but was not limited to) a community group (kin-group) based at the towns Nambi Road Village (Katumpul). As represented in Figures 6.2 and 6.3, Leonora is located 237km north east of Kalgoorlie, and 833km east, north-east of Perth. Under the Australian Standard Geographic Classification for Remoteness, Leonora is listed as ‘Very Remote’, the most remote tier available under the system (ABS 2003a).



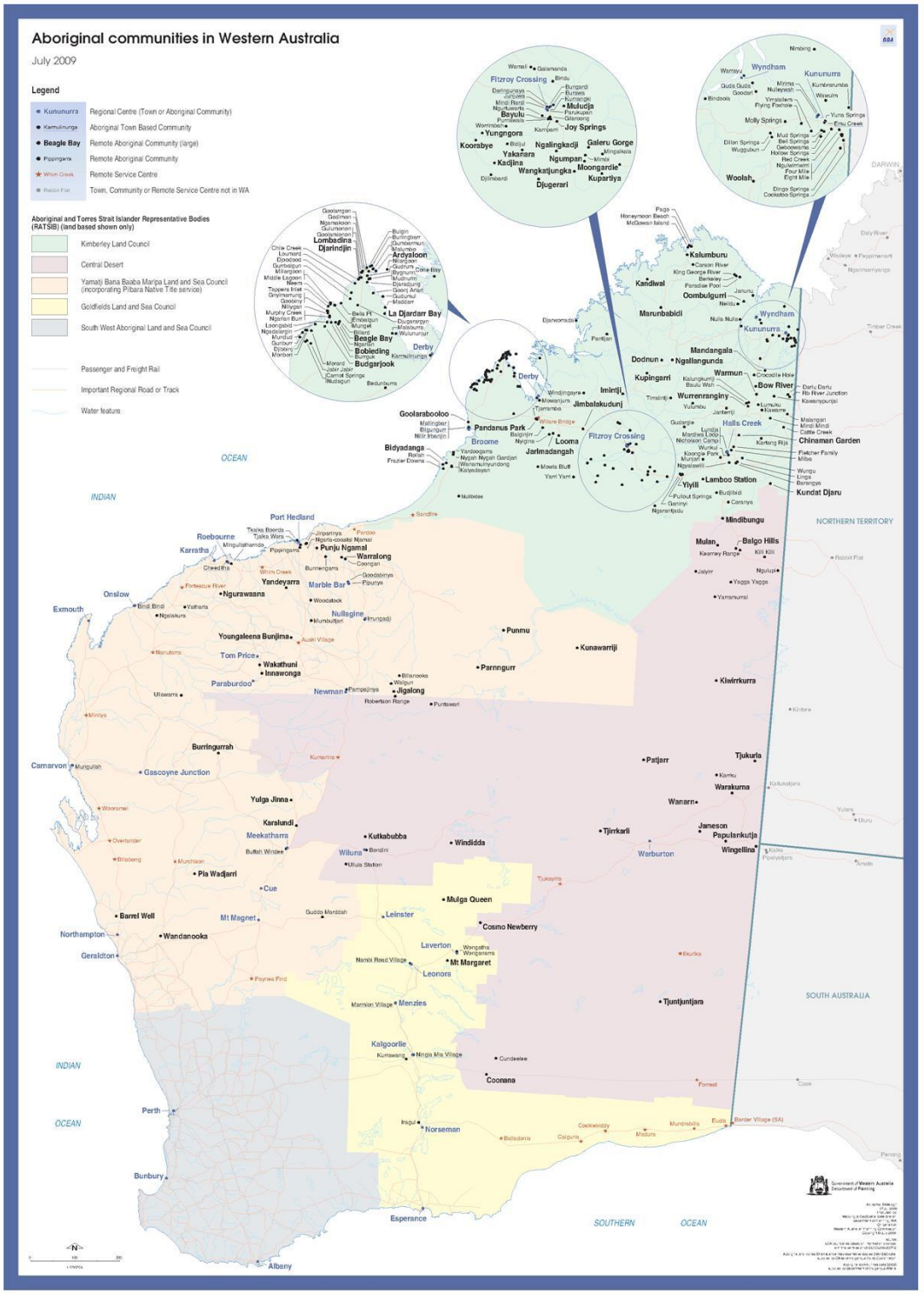
Figure 6.2: Leonora’s location within Western Australia, situated 833kms north east of the State Capital of Perth

According to the National Regional Profile for Leonora (ABS 2010b), in 2009 Leonora had a population of 1666 (1012 male and 654 females), with an estimated 10.7 per cent identifying as of Aboriginal decent. This figure contrasts to the 3.7 per cent figure for the State.

Fertility levels for Aboriginal people are higher than those of the total population with the age under ten being the most numerous in Leonora. Mortality levels appear to be much higher among Aboriginal people overall and particularly men,

with no males older than 55 ... Leonora's Aboriginal pyramid shows young people and people of working age being absent from the town (Rola-Rubzen, Martinova, Singleton et al. 2010, p. 7.)

These Aboriginal figures have significant implications for EnDCD. Figure 6.3 indicates the location of the various Aboriginal communities of Western Australia including the Nambi Road Village in the centre south and their government administrative boundaries.



Source: Government of Western Australia, Department of Planning 2009

Figure 6.3: Map of Western Australia showing location of Aboriginal Communities

6.3.1 Natural environment

Leonora is located within the Murchison Bioregion (see Australian Natural Resources Atlas 2010; Figure 6.4). The environment surrounding Leonora is classified as 'BWh-hot desert', under the international Koppen climate classification system. It receives a mean annual rainfall of 230 millimetres. Mean daily maximum temperatures range from 18°C (64°F) in July to 37°C (99°F) in January making it hot as well as dry (see Rola-Rubzen et al. 2010).



Source: Commonwealth of Australia 2000

Figure 6.4: The Murchison bioregion

In this extremely harsh environment both the native flora and fauna found throughout the region are highly adapted to existence in this particularly harsh region. This degree of adaptation is also well noted in the culture of the region's Aboriginal peoples (see Liberman 1985).

6.3.2 Governance, community services and infrastructure

The Leonora Shire carries out local governance and administration, with offices located in town. Leonora has the following public resources: public School (yrs 1-12); hospital; supermarket; post office; tourist bureau; public swimming pool and sporting complex; community health facility; welfare agency; small public library; and a Regional Airport. In addition, the town houses a number of private businesses

including the following services: accountancy; employment agency; hotels/accommodation; mining related industry; two service stations (fuel), tele-centre; video store; hair dresser; butcher; and car hire (limited to one vehicle).

6.4 Development history – Aboriginal context

From an Aboriginal perspective, the early development history of the Goldfields Esperance region can be divided into three distinct phases: pre-settlement, the gold rush and pastoralism.

6.4.1 Pre settlement, gold rush & pastoralism: before 1800 – 1980s

Prior to European settlement of the region, the Aboriginal peoples existed on and with the natural environment through a culture based around what Liberman (1985) categorises as: a congeniality of social relationships, and a competent system of organisational items, that form the consensus of a society; a vibrant culture of highly evolved human – environment interactions. The area surrounding what is now known as the Shire of Leonora was home to a number of culturally distinct Aboriginal groups, who lived not dissimilarly to other central Australian Aboriginal peoples through a hunter gatherer subsistence lifestyle (see Howitt 1996). Aboriginal peoples in remote areas where climate and soil productivity was poor were able to live relatively unencumbered by the European population (Liberman 1980). However, ever increasing mining industry activities has changed this independent relationship.

European settlement was fuelled by the State's original 'gold rush', starting around 1893 in Kalgoorlie and rapidly spreading throughout the State of Western Australia (Kalgoorlie Goldfields Visitor Centre 2010). In 1894, gold was discovered in Leonora (then known as Gwalia, after the mine owners 'Sons of Gwalia'), and by 1897, a residential business area was established, followed by the formal gazettement of the town (Leonora) in 1898. Gold was also discovered in the Lake Darlot region, near Leonora around the same time (Liberman 1980). The impact of this colonial development on the local Aboriginal people was significant. A vast range of

international migrants moved into the region, creating a culturally diverse, largely European range of regional and isolated communities, and with them came their European socio-cultural characteristics. This included the Protestant-European notion of 'work' (the separation of the household and one's occupational work during a concentration of well-defined time), which was foreign to Aboriginal people of this area who followed a subsistence lifestyle (Lieberman 1985).

Subsequent efforts to forcibly utilize Aboriginal people as free labour during the initial gold-rush periods failed (Lieberman 1985), along with any substantial levels of positive engagement (Altman & Martin 2009). However, Aboriginal peoples in the nearby Pilbara region of WA (1000 km to the north west of the Goldfields Region) reportedly developed a small-scale economy selling bags of alluvial tin and gold to local storeowners in return for flour, tea and sugar (Holcombe 2004). Interestingly, Holcombe notes that up until 1967 there were 28 local Aboriginal operated mining tenements in operation throughout the Eastern Goldfields (notably prior to Aboriginal people having any formal citizenship rights), indicating that historically a number of Aboriginal peoples were actively engaged in the resource economy on their own terms. However, in later years as larger mining companies bought up leases, smaller Aboriginal operations were unable to compete with much larger operations (Holcombe 2004). With the establishment of new populations throughout the region, a quest for economic diversification emerged.

From the beginnings of the pastoral industry in the remote regions of Western Australia 'Aboriginal labour was a mainstay' (Bolton 2008, p. 84). The establishment of a pastoral industry throughout the region (and around Leonora) during the mid twentieth century provided a second wave of local settlement around the Leonora Shire (Lieberman 1980). Notably, it generated a greater degree of Aboriginal participation than the first gold-rush period, permitting people to maintain a somewhat positive relationship with their kin groups, country and its natural resources (Holcombe 2004). Due to the limited non-Indigenous labour pool in such remote areas, Aboriginal people were incorporated (as indentured labourers) into the pastoral workforce (Lieberman 1985). During the 1940's – 1960's Aboriginal

people were forcibly offered two re-settlement pathways by the State; either to provide free labour on one of the many neighbouring cattle stations in return for housing and food, or re-settle at one of the many missions provided by the a range of religious institutions (Lieberman 1980). Then, as a consequence of the Aboriginal pastoral workers winning the right to equal award wages in 1967, many pastoralists refused to employ them under the changed conditions and a large number of Aboriginal people not only lost their jobs, but also their right to stay on their own land (McGrath 1987). That the legacies of these two divergent pathways are evident in the current Aboriginal population of Leonora is noteworthy, with many Aboriginal people openly distinguishing themselves as either a 'station' or 'mission' person.

Despite the harsh indenture system applied to Aboriginal people during this pastoral industry era (Holcombe 2004), they often now view it with great affection as a period of harmony (Edmunds 1989). Affirming this, the researcher noted that local Aboriginal people over 40 years of age regularly reminisced about the 'station era'. Many contemporary community-driven development objectives relate to visions to acquire access to the stations Aboriginal people were placed on during this period. This land acquisition vision points to the power and role of 'country' (traditional lands) in framing these peoples' worldviews. The pastoral era was not known for political rights or wealth creation, but it did permit Aboriginal people to maintain traditional family networks, while being on country. By the late 1970's, the region's pastoral sector rapidly declined. An award wage for Aboriginal people working in the pastoral industry further reduced their presence on stations (see McCorquodale 1985). With the collapse, Aboriginal people were forced to relocate to selected 'Aboriginal' towns and major service centres (Holcombe 2004). Thus began the welfare state in Leonora and throughout the Goldfields region and greater Western Desert block. In the Pilbara region, this marked the beginning of social and economic marginalisation of Aboriginal people, as the administration of funds, services and resources were located in towns with few Aboriginal residents (Holcombe 2004). Further, Holcombe (2004), citing Edmunds (1989, p. 49), states this to be 'perhaps the most visible demonstration of the extent to which control over social as well as economic development was ceded by the State Government

to the mining companies in the interest of rapid and large-scale resource exploitation'. Mining companies had declared there was little opportunity if any for Aboriginal employment, despite their reliance on a large quantity of unskilled labour.

6.4.2 Street lights, fringe dwellers, and the resource extraction renaissance: 1970s – 2010

The Aboriginal peoples of the Shire of Leonora share a lack of employment opportunities with other remotely located Aboriginal communities. Aside from the initial vast cultural disruption of the gold-rush period, more recent accounts argue that the well-established resources industry fails to provide them with any further cultural harmony or significant economic opportunity (Altman & Martin 2009). To indicate the deep character of conflicts between the interests of industry and Aboriginal people, Altman and Martin (p. ix) cite the comments made in 1984 by Charles Perkins, then Chairman of the Aboriginal Development Commissioner:

[Tensions] date back to those times of notoriety, not so long ago, when certain Aboriginal groups resisting European pressures on their lands were simply swept aside... The deep and degrading disruption, the assault of noise, dust and lost privacy, the loss of social integrity of Aboriginal groups, and the outrageously low return in the way of royalties, employment and other benefits, have all formed part of the picture of the Australian development "frontier".

Despite the great rise in mining's shares of Gross Domestic Product from 1.7% in 1960/61 to 6.1% 1980/81, a study in 1984 found that Aboriginals then played only a small part in the operations of major mining companies; occupied mainly unskilled or semi skilled blue collar jobs; and had available to them only limited training opportunities, almost all of which were restricted to narrow job classifications' (Cousins & Nieuwenhuysen 1984, pp. 12-13).

Some 27 years after Perkins voiced concerns for the economic socio-cultural and participatory marginalisation of regional Aboriginal people from the prosperity of the extractive industries, it seems little has changed. As Altman (2009b) notes, 60 per cent of mineral operations in Australia have neighbouring Indigenous

communities, but little is being done to invest in the development of Indigenous representative structures, or community infrastructure and social services for remote and regional Aboriginal communities. Despite the current 'boom' within the mining industry (forecasts of 70000 new jobs required by 2015 (Lowry, Molloy & Tan 2006)), the state continues to approach Aboriginal stakeholders through paternalistic engagement with the mining industry; 'promulgating a monolithic and mainstream development approach and trajectory' (Altman 2009b, p. 17). Further, despite the dominant neo-liberal state focus on individualism, entrepreneurship and profit maximisation, it seems this does not extend to the Aboriginal peoples in the mining context (Altman 2009b).

According to the legal statutes of the state, traditional landowners whose land is affected by mining, are attributed some form of compensational financial benefits irrespective of social and economic affectedness. Yet in Australian law, the purpose of such payments is unresolved: Are they for a share in the mineral wealth; or, as a means to offset social and economic disruption (see Altman 2009b)? In any case, Aboriginal participation around Leonora has not substantially changed over the 100 years the mining industry has been operating in the region. Further to this point, formal agreements (including financial benefits) between mining companies and Aboriginal stakeholders have only minimally ameliorated Indigenous poverty (see Scambary 2009). Poor agreement outcomes are often the result of limitations imposed on Aboriginal livelihoods and aspirations (Scambary 2009). With this marginalised history and experience, it is hard to see how economic activity through extractive industries can significantly assist Aboriginal peoples in Leonora, or the Goldfields Region to overcome any disparities and disadvantages.

The present-day status of Aboriginal peoples living in and around the town site of Leonora is varied and contrasting. Due to this traumatic history, two general Aboriginal 'ways of life' are identifiable amongst local peoples: The first is a number of Aboriginal people live in privately owned or rented housing, hold regular employment and engage in the town's education services. In many ways, these peoples are the protégé of much of the last century's assimilatory efforts. However,

it is indeed noteworthy that the vast majority of such peoples have not abandoned their 'Aboriginality'. Secondly, there are the group of people living on the outskirts of town in 'Nambi Road Village' (AKA Katumpul Village). Many of these people rely solely on state welfare for subsistence, are provided with housing through the Government Indigenous Housing Program, and engage only sporadically with mainstream youth education services. This group shares many common socio-cultural and political features with other Aboriginal 'fringe dweller' communities. 'Fringe-dweller' (Gare 1966) is a term commonly applied to Aboriginal peoples dwelling on the fringe (physically and culturally) of Australian society.

In Chapter 2 some of the arguably misguided targets of Australian Government Aboriginal Development policy was discussed to alert to why and how policy has not always delivered the outcomes desired by a number of the very people targeted to benefit. This chapter's review of the regional development context of Leonora posits that the generation of vast amounts of economic activity in remote regional Aboriginal lands (and associated employment opportunities, housing, infrastructure, and services) have not diminished the colonial legacy, nor remediated the trauma of cultural disruption. Colonialism often endures through the hegemonic Western systems of 'production', 'governance' and 'thinking', and these traits continue to evolve into neo-colonialism (Gibbs 2003), as evident through the very way mining companies choose to engage with Aboriginal peoples throughout the Goldfields region (see Altman & Martin 2009).

The literature attests that to facilitate more robust and meaningful development outcomes for the region's Aboriginal peoples, there is an imperative to empower Indigenous peoples through the decolonisation of Indigenous spaces, and the development of new ways of seeing the relationships between industries and their host communities (Howitt et al. 1996). However, to find ways to facilitate more robust and meaningful development the question must be posed: Is there a societal space for Aboriginal-lead agency, and how can centralised government structures and industry contribute to innovation? Instead of negative focus on claims that neither government policy nor substantial economic activity in regional Western

Australia has resulted in positive outcomes for the region's Aboriginal peoples, it might be more useful to consider that neither have resulted in the type of meaningful change Aboriginal people seek through development. This research contends that a missing link in societal investment in remote Australian Aboriginal community development may be an 'on the ground' Aboriginal-led EnCDD direction. This research explores this alternative direction through the experiences of a Leonora Aboriginal community.

6.4.3 Leonora Aboriginal population analysis

Leonora falls within an area known as the 'Western Desert Cultural Block', the broadest level of classification other than Aboriginal. The Wongai (Wongatha, Wangai, Wankai, Wangkatja, Wongutha) people, or nation, are the primary traditional inhabitants of the Goldfields region. Other groups from neighbouring areas in Leonora at this tier level include among others: Martu (North), Yamagee (West) and Ngaanyatjarra (East). Leonora houses Aboriginal peoples from four (4) tribal groups (clans, extended family networks, referred to by Aboriginal peoples as 'mobs') within the Wongai classification, these are: Ngalia; Tjupan; Kuwarra (Koara); and Waljen (Walyan). These four tribal groups are considered the traditional owners for the immediate region surrounding Leonora. This research primarily involved engagement with peoples who self-identify as Ngalia peoples. To a lesser degree, Tjupan, Kuwarra and Waljen peoples also participated, and were never excluded from activities. The Ngalia tribal group consists of hundreds of people throughout the region and elsewhere in Australia (Federal Court of Western Australia 2007). They are considered traditional owners of Leonora and the areas to the northeast and west of town (Federal Court of Western Australia 2007). The following material derives from researcher observations, and interviews and conversations with key community informants. For ethical, cultural and protocol reasons, the identities of key informants are protected.

The majority of the Ngalia people in Leonora reside in the Nambi Road Village (NRV), on the outskirts (300 m away) of town (physical 'fringe dwellers'), or in government assisted housing in the town. Nambi Road Village is sometimes

referred to as Katumpul village, after an area of cultural significance nearby. Housing in Nambi Road Village is Government funded, and people are required to pay rent. Seven functional houses in the village provide accommodation for a highly transient population of around 50 people, averaging seven people per three-bedroom house. However it was observed that up to 20 people per house was not uncommon during certain periods, such as funeral, law season, and native title meetings.

6.5 Ngalia Peoples: Background to their EnCDD

This section draws the relevant literature and on the significant traditional, historical and contemporary realities of the Ngalia People of a key Ngalia community informants as divulged to the researcher. The Ngalia peoples come from a line of traditional owners, who largely formed part of the indentured labour force within the region's historical pastoral industry. The key informant described the historical background to contemporary Ngalia peoples' settlement.

We have two, distinct groups among our groups which are the guys who went and lived on the station for work and the others who were basically tribal people who went straight from living in the bush to living on the reserve in ah Leonora, so you know they didn't do the mission or the station route. And a lot of that, those guys are passed away now so the descendants of all those people now would be guys who are living at the Katumpul village (NRV), so that's the sort of family histories, linking people back to, you know getting to understand where they are today (PM1 personal communication 22 April 2008).

Very few Ngalia people were located on religious missions, and because of this there is a relatively strong connection to their culture, dreaming (*Tjukurpa*), and traditional lands (*ngurra*). The missions were renown for their desire (and successes) to convert Aboriginal beliefs to that of Western religion. They gained control of Aboriginal peoples through a power relationship with the State, stripping Aboriginal people of their cultural identity (Choo 1997). One generation back from the pastoral era of the 1900s, Ngalia people were considered 'bush people' and actively engaged in a traditional subsistence hunter-gatherer lifestyle. Within four

generations they have largely shifted from 'traditional bush peoples' to 'traditional town peoples' (PM1 personal communication 22 April 2008).

According to the key informant, in the 1980s, several Ngalia members formally established an 'Aboriginal Corporation' under the 'Aboriginal Councils and Associations Act 1976'. This formalised their Aboriginal status and engagement in a range of social (advocacy, research) and economic (enterprise) activities. Such activities included the recording of Ngalia genealogies, and later, the publication of books relating to Ngalia culture and history (see <http://henrietta.liswa.wa.gov.au/record=b1902985~S1>). These initiatives occurred during the transformative 'involuntary' period of station-to-town era, as Ngalia people were forced off stations and housed in small regional settlements. In 1990, when most Aboriginal people in the immediate area had moved into towns, such as Leonora, or to reserves (Nambi Road or Mt Margaret) or missions, the Ngalia group formed their current Aboriginal Corporation, the Ngalia Heritage Research Corporation (NHRC). Ngalia members were using the corporation as a vehicle to formally research and report on 'cultural aspects' of the Ngalia peoples. Thus, the key informant explained, it became apparent to the Ngalia people that with the emergence of land rights for Aboriginal people around this time, a sound understanding of their culture (history and genealogy) was imperative for not only their cultural survival, but also to assist in the legal (re)attainment of traditional lands and the right to negotiate through the native title act (Personal). Ngalia people realised their culture had become a powerful currency within a knowledge-based economy of land rights, activism and advocacy.

This early endogenous driven agency was instigated and led by two Ngalia people, one of who is of non-Aboriginal descent, but married into a Ngalia family, and who subsequently undertook the many cultural initiations to become a respected senior law man. The initial research and archiving agency sought to record the oral histories of the Ngalia people, of which the first phase was the genealogies of the Ngalia tribe. Several books were published from this period, largely on language and genealogy (see <http://henrietta.slwa.wa.gov.au/record=b1108696~S2>). As time went by, many of the elders providing the knowledge for archiving began to pass

on. The informant explained that this reality inspired Ngalia peoples to increase their research activities to incorporate text-based knowledge archives into traditional knowledge-transfer pathways. Their understanding of the link between text-based knowledge archives and traditional knowledge-transfer was explained:

A lot of those elders that she [PF11] was dealing with had all passed away, but the knowledge she was learning was transmitted in two formats: one it was transmitted in the written record, but in our family or our community, we see the written record as a guide, or a tool around which the oral knowledge continues to be passed on. And this is a fundamental part of Indigenous knowledge transfer, the art, the design, the painting the dances all that sort of thing. Indigenous knowledge is transferred in the context of the full picture, so you have a picture, you have a ritual, you have a painting, you have a design, you have a story, you have a song; all those things together make up the body of knowledge. And so in doing the research she was also passing on the stories, the knowledge, you know, we were participating in the process when [PI3] would do the research with her elders, my brothers, other families would be sitting there as well, listening to the stories, as they told them (PM1, 2008, personal communication 22 April 2008).

Thus, by the late 1980s, and early 1990s, the Ngalia peoples began to incorporate written texts of cultural knowledge into their intergenerational knowledge transfer protocols. These texts would only represent a small part of the full knowledge spectrum.

The next phase of endogenous driven Ngalia agency centered on the significant role country played in learning, teaching and maintaining their culture. No amount of literacy-based archiving could singularly maintain their culture, as it required country and access to country. With the resurgence of mining activity through the region in the late 1980s and early 1990s, heritage-based knowledge became a vital protection against the exploitation and destruction of Ngalia heritage sites. Around this time, many Ngalia community members became aware of the Government's database of Aboriginal sites: *'they (the Government) have their own records (of our sites), they know where they are, not all though. Sometimes we have to tell them, so they don't let them become destroyed'* (PF1 2008, personal communication 20 April 2008). This comment was made with reference the 1972 Aboriginal Heritage Act

(AHA) (Ministry for Indigenous Affairs, 1972) that sought to protect and preserve sites of cultural value to the states Aboriginal peoples. The Act itself states the objective to be: 'An Act to make provisions for the preservation on behalf of the community of places and objects customarily used by or traditional to the original inhabitants of Australia, or their descendants, or associated therewith, and for the purpose incidental thereto' (Ministry for Indigenous Affairs, 1972).

Despite the good intentions of the Act to 'preserve places and objects' of value to Aboriginal people, in over 32 years of its history the AHA has posed little or no impediment to the development of mining in Western Australia (see Chaloner 2004). Chaloner (2004) reports that the AHA does not resolve any conflicts between Aboriginal land use and development, especially those involving mineral development. Due to 'adversarial' structures embedded within the AHA, and competing land use interests, the AHA has little impact on stopping the prevailing non-Aboriginal land use (Chaloner 2004). During the late 1980s and early 1990s, Ngalia people became aware of the disparate impact of the AHA on their sites around this period, as it became increasingly ineffective as a tool to block the expansion of destructive mining related activities on traditional lands.

During an interview, an elder commented on what Ngalia people understood to be their main need for engaging in a community-lead agency process of research and documentation of heritage sites. *'The mining companies buy up these stations, where we live . . . destroy sites, stop us from going there, teaching these kids . . . about their culture . . . where they're from'* (PF1, interview Leonora 15 June 2007). The consensus informant realization was that the mining companies and government institutions were actively researching the Ngalia (and that of Tjupan, Kwarra, and Waljen peoples) histories and heritage to challenge any Aboriginal person advocating against mining, civil or other forms of development in the region. Despite the fact that the AHA was supposedly a policy designed to assist Aboriginal peoples preserve and protect heritage, the Ngalia people interviewed perceived Government controlled heritage surveying and documentation as a means for the mining companies and corporations to know more about the local Aboriginals than

many of the Aboriginal peoples themselves. Thus, from the Ngalia point of view, the AHA is a vehicle for centralized Government control of Aboriginal heritage. Ironically, the Government archives of Ngalia heritage are thus viewed as a threat to the knowledge maintenance and intergenerational transfer within the Ngalia community. Thus the concern was raised that if Government and mining companies have greater access to Ngalia heritage resources than the Ngalia peoples, the community's voice is disadvantaged when engaging in native title applications, or community development initiatives, or advocacy-themed work against mining corporations. This knowledge and communication disparity works to favor a colonial and paternalistic approach to local development.

In the 1990s, the State Government Department of Indigenous Affairs (DIA) introduced an online database of Aboriginal heritage sites. The 'Aboriginal Heritage Inquiry System' (AHIS) provided a publically accessible register of Aboriginal sites using an online database, and geographic information mapping systems (GIMS) technology (Department of Indigenous Affairs, 2010). The AHIS permits Internet searches for specific Aboriginal sites within Western Australia under the AHA. A digital map interface marks the heritage site, and a subsequent PDF file of the site material can be downloaded, which contains the northerly and easterly areas of the site. While the physical nature of the heritage site would greatly influence the ability for it to be located using information detailed within the AHIS, it does undoubtedly expose Aboriginal sites to potentially unwanted damage or interference. This also potentially forces Aboriginal groups to reveal the vast majority of Aboriginal sites to preserve them, or to use them as evidence for substantiating connections to land for the purpose of applying for native title. With reference to the Kuwarra people residing in Leonora, Liberman (1980) notes what he describes as active engagement in 'secrecy as a strategy of survival'.

Aboriginal peoples of the Yeelirrie-Leonora region have successfully kept much of the non-indigenous population in near-total ignorance about deeply held traditional beliefs. Underpinning this strategy is European-Australian skepticism of and lack of empathy for Aboriginal cultural beliefs, and a traditional Aboriginal injunction

against passing on sacred knowledge to uninitiated persons. Liberman (1980) further reports that the Kuwarra people encourage such ignorance by referring to sacred sites using European names when in the company of non-indigenous people. Liberman (1980) further asserts that the Kuwarra peoples' secretive heritage protection policy was successful in that a member of State Parliament declared there were no sacred Aboriginal (Kuwarra) sites on Yeelirrie station and that much of the recently identified sites were 'fabricated' in order to receive financial reward.

For the Ngalia, the advent of the AHA in the 1970s and AHIS in the 1990s impacted on the community policies of heritage dissemination. They recognized that they needed to counter the understanding other people (government, anthropologists, developers, and miners) were developing of their culture, with a succinct and comprehensive understanding of themselves. This insight underpinned much of the past Ngalia written (text based) archive of heritage sites, accompanying language dictionary, and recordings of culturally based interactions with country. This repository of Ngalia cultural information would provide the backbone for the Ngalia peoples to engage in development agency as aimed to create meaningful and sustainable livelihoods, and re-acquire access to their traditional lands. It became apparent to many Ngalia people that without formally documenting their culture in a format directly comparable to that used by external parties, they would not be able to challenge the many legal and political barriers that prevent them from driving in their own development.

The archiving and communication technology used by Ngalia people to carry out this work changed from hand written documentation in the 1960s, to audio tape recordings and typewriters in the 1970s. Though few Ngalia people possessed the capacities to use computers to replace typewriters, they were first used in the late 1980s. Throughout the 1990s, they utilized 'high quality' printers, scanners, and compact disks (CDs) to store and disseminate material. This archiving project formally emerged in 2005 when they began to interact with an increasingly diverse range of web-based ICTs to document, communicate and manage much of their endogenous community-based development activities. Underpinning this new

direction was recognition that the very survival of the Ngalia people and their culture rested on development agency framed on the twin imperatives of internal community secrecy and an outreaching community advocacy.

Chapter 7 narrates and discusses key milestone events, actions and outcomes associated with this milestone web-based ICT interaction process as conceived to contribute and manage their already well in place endogenous community-based development goals. The primary and secondary material presented in this chapter reveals how indigenous and colonial historical and environmental contextualizing forces shape the lived development reality of this specific Aboriginal community in this very remote geo-physical regional context. It informs on how interwoven colonial and indigenous historic, political, economic, cultural and environmental factors frame regional and local development specificities, and more specifically, frame the economic, socio-political and cultural particularities of the case study Aboriginal community. Chapter 7 tells the story of key events, actions and outcomes of the ICT interactions of the kincentric Aboriginal Ngalia peoples over a six-year period. The key theoretical, critical and practical notions underpinning endogenous development frame the case's descriptive narrative.

Chapter 7

The primary case study

7.1 The Ngalia People and development agency project-based ICT-interaction

This chapter narrates the case-based story of the Ngalia people and their evolving experiences with ICT interaction over seven years. The story explains how the researcher began to participate and observe their ICT adoption and the emergent transition to an EnCDD process within the historical context of Ngalia development agency. Over the period, seven differentiated ICT adoption phases were identified, with each phase involving multifaceted project initiatives employing a range of ICTs to address pluralistic community development goals. Each of these project phases are presented consecutively with a summary table that identifies the key elements of development agency ICT interaction framework for each project phase, i.e., the participants, ICT used; the participatory approach, the development agency themes; and community outcomes. Together, the project stories document the considerable effort and investment the Ngalia people made in ICT-related development agency to address their historical discrimination and marginalisation, and the modern day challenges of life in a remote regional location.

The narrative shares the Ngalia endogenous development agency experiences, provides descriptive evidence of how the researcher participated in the ICT adoption, the observations of a number of key participants, and the outcomes and their impact on community development. The narrative mode is used to 'give life' to their experiences, to provide data for reflection and extrapolations on the agency processes and to build empathy and credibility for endogenous community driven initiatives as alternative 'way forward' for development agency. The unique EnCDD features of these projects and the analysis of the data will inform on how ICTs support this alternative development approach.

7.1.1 Developing of the researcher-community relationship

The researcher first made formal contact with members of the Ngalia Community in June 2004. As a project officer, he was asked to assist with the facilitation of a national community-based natural resource enterprise (NRE) project titled 'Plants for People (P4P)', funded through the Centre for Sustainable Mine Lakes (CSML), Curtin University, and the Desert Knowledge Cooperative Research Centre (DKCRC). The P4P project had a study site at the remote town of Leonora. The project aimed to identify the market potential of endemic flora species of the Northern Goldfields Region with the goal of participating Aboriginal groups developing a sustainable enterprise around any suitable flora species. From an academic perspective, the project was essentially viewed as a 'capacity building' initiative to facilitate local Aboriginal enterprise development (see Piper 2005). The Ngalia people and members of other groups residing in Leonora had expressed a desire to work in this area and were keen to partner with the project. From a university point of view, the targeted project outputs aligned with the Ngalia development objective to create employment and livelihood opportunities for their people on traditional lands, permitting community members to utilize their traditional knowledge of plants to research, trial, harvest, cultivate and market non-timber bush products (see non timber forest products (NTFPs) for similar global examples). The literature review emphasises that the maintenance of a connection to country is core to the sensibilities of an Aboriginal way of life, and especially, remotely located communities.

The researcher's role was to assist with the training of community members in flora sampling techniques and site documentation so samples could be sent to Curtin University and assessed for any market potential using Western scientific analysis techniques. This sampling and documentation task was characteristically a 'transmission-oriented' capacity building role (Fukuda-Parr, Lopez & Malik 2002). Also included in this role was the task to increase community members' capacity in the use of digital photography and videography for the documentation of flora samples, and to compile a basic database (digital archive) of all the plants surveyed during the project. The use of ICTs in this manner by botanists is common practice

(see Fidelibus & Mac Aller 1993). In this role the researcher managed the execution of a number of flora sampling field trips with community members, as well as the related ICT capacity building, the management of field samples post-field, and reporting findings/progress back to community participants. Initially, this project had regular participation from two groups of Aboriginal peoples in Leonora, one family group of Kuwarra peoples, and one family group from the Ngalia people. As the project developed, the Ngalia group demonstrated the greatest interest in participation, and indicated that they had planned a similar style of project during prior community meetings. Because of this alignment, the other participating groups either merged their involvement in a related project with the Leonora District School, or ceased to participate on a regular basis.

In undertaking the Project Officer role, the researcher increasingly spent increasing time meeting community members, participating in community-led field surveys, and collecting flora samples. He also observed and participated in a number of community planning meetings and workshops where in partnership the university researchers and community members managed, monitored and evaluated the projects' progress, and peoples level of participation. As the researcher gradually developed a more trusting relationship with the community, he was exposed to a wider range of Ngalia community activity, history and objectives. This exposure led him to recognise that the Ngalia, as a kincentric community of marginalised and disadvantaged Aboriginal peoples, had for some time invested in agency best described as EnCDD. This realisation links to the intergenerational knowledge archiving referred to in Chapter 6. Further to that, he learnt they had a number of development initiatives underway as a part of their broader development agenda to regain meaningful access to their traditional lands, maintain their culture and provide enterprise opportunities for their people. They understood the NRE project as a meaningful way to contribute to this endogenous agenda.

7.1.2 The drivers of Ngalia endogenous community development

When initially questioned about what drove their internal development strategy, a common response was that the community wanted to work for themselves to:

utilise local knowledge, abilities and effort, and keep external expert assistance to a bare minimum. One reason for this was to reduce exogenous parties exploiting Ngalia community assets, and/or taking control of/or compromising their project objectives. A key community member expressed a strong lack of faith and trust in the ability for external parties, be they representatives of Government or business, to deliver benefits to the community during partnership without some loss of community decision making power, or development autonomy. As indicated in the literature review, and the local development history discussed in Chapter 6, Aboriginal peoples, such as the Ngalia, have endured the traumatic legacy of exploitation and assimilation experiences with Government and industry that have done little to build trust, or hope for mutually beneficial partnerships. During community workshops, the researcher noted numerous first hand accounts of such negative experiences: from families being forced off pastoral stations by mining companies and involuntarily re-settled in fringe dweller camps, to University researchers using traditional knowledge to 'bio-prospect' for commercial intellectual property without returning any meaningful benefit to community members, other than the provision of food during breaks in their workshops.

These past exploitative experiences, and the inherent politicisation of many Ngalia development objectives, i.e., reclaiming traditional lands, blocking destruction of sacred sites, and increased Aboriginal resource investment, underpin a cynical 'trust no one' approach to their external partner relationships. This pattern is not to indicate they have never benefited from working with government or private enterprise. However, a common community view was that in entering partnerships, they should expect to either compromise their objective, or run the risk of exposing the community's development strategy to self-interested and powerful external parties, thus reducing the likelihood to achieve *their* goal. This low trust and exploitative institutional environment underpinned what became understood as a strong community preference for an EnCDD approach. From early interactive experiences, it was apparent that the Ngalia people preferred to self-manage their own development initiatives, and to only partake in collaborative partnerships

when they were able to deliberate the terms and conditions of exogenous participant conditions to fit their specific endogenous needs and agendas.

7.1.3 Ngalia ICT adoption

Coupled with the Ngalia Peoples preference for an EnCDD approach, the researcher became aware that they were amenable to adopt new ICTs that might give them greater autonomy, ownership and control of the internal and external mediation of their socio-cultural and environmental resources, the key components to their Ngalia identity and development agency aspirations.

Section 6.5 of Chapter 6 notes that the Ngalia Peoples had for many years used various forms of ICT to document oral histories and manage traditional knowledge. At the initial point of the researcher/community relationship, they were exploring the adoption of several new digital technologies for use in their own initiatives. Primarily, these ICT 'tools' involved: digital photography and videography, and a range of web-based platforms. From the previous university research projects, the researcher had established a trusting working relationship with the community and an understanding of their development objectives, and the local environment, which informed recognition of the opportunity to research the role of ICTs on the Ngalia peoples' ability to progress their development agency. The Ngalia people agreed to such an arrangement, and this research project was born.

7.1.4 Formalizing the researcher relationship

The degree to which Ngalia peoples exercise autonomy within their community matters meant the researcher had to deliberate on a number of ground rules for his Ngalia ICT adoption research. These were discussed at two initial community meetings at Leonora in June 2007 and involved key Ngalia community spokespeople, of whom, according to local protocols, the rest of the community entrust judgement. The following 'rules of engagement' were agreed:

- The researcher and any research related activities would not distract community members from their development goals. This meant the

research focus and methodology had to be adapted to 'fit-in' with the Ngalia peoples and their initiatives.

- New initiatives would only be agreed to where they interlink, or compliment existing initiatives, or potentially deliver a significant outcome for the community.
- When given access to information and knowledge not previously given to external agents, the researcher must treat this privilege with respect, and not divulge information to external parties, other than that required for accurate representation in the research project.
- The Ngalia peoples reserved the right to remove themselves from the research project either partially or in entirety, if at any time it became unwise for them to continue participating.

These collaboration terms meant the researcher had to be flexible in the conceptualisation and design of the research. The engagement terms work to shift conventional power relations away from elite institutional actors to empower community decision-making. The alternative power symmetry meant that forward planning the research project became difficult, as initiatives were dependent on the evolving nature of Ngalia community activities and directions. This emergent, evolving and action oriented community development context informed the inception of an adaptive research approach that could credibly be enacted in this constantly evolving Ngalia environment, i.e., the research agenda and the researcher agency had to be embedded within community actions and agendas. From an academic and institutional view, this highly adaptive circumstance presented the researcher with a daunting task. However, the literature review emphasised that this adaptive and 'action' research approach to community development agency, the Ngalia-centric terms for collaboration, and their affirmative development aspirations, together aligned with the EnCDD theoretical paradigm of critical and post-development discourse, and therefore, the researcher had a highly unique and valuable research opportunity.

7.1.5 The Walkatjurra Cultural Centre (WCC)

In early 2005, the Ngalia people created a community resource centre in Leonora, the Walkatjurra Cultural Centre (WCC). Its physical presence was in a rented shop on the main street of town, a small shopfront building (<40m²) with further space (50m²) to the rear of the facility. The WCC was to provide arts based resources and training for local Aboriginal community members (not solely Ngalia), as well as a point of sale for art pieces. The large number of Aboriginal peoples in the Northern Goldfields region who actively participate in the arts for both cultural expression and subsistence enterprise underpinned this strategy. As is not uncommon among remote Aboriginal communities, the centre was reasonably equipped with art supplies including acrylic paint, canvas rolls, paper, stationary, several working tables, a number of plastic chairs, display shelves, and numerous hanging points for the display of art for sale (see Image 7.1).



Image 7.1: Two female participants working in the front ‘shop section’ of the WCC in 2007.

The size limitations of the WCC meant artists would work in the shop front, while customers browsed alongside them. It also served as a community meeting point; for social encounters to share news, make plans, and informally discuss community matters. There were often a number of community youth in the centre accompanying adults. The WCC was funded through the Government provided and

community managed CDEP fund, which endowed the Ngalia people with a small operating and administrative fund to provide Aboriginal peoples with activities that count towards their CDEP. The budget provided was not enough to cover all associated costs of the WCC, and so several members of the Ngalia community sought additional funds through related grants and subsidised running costs through personal financial contributions. This search for wider funding indicated the local level of community appreciation and commitment. The community hoped that the WCC be self-funding after a given period, and not rely on personal financial contribution from community members. However, during the time the researcher was involved this autonomy did not eventuate.

Due to the CDEP funding obligations, the WCC was required under related guidelines to provide 'work' or activities for community members for between 7.5 and 15 hours per week (see <http://www.deewr.gov.au/indigenous/employment/programs/iep/pages/cdep.aspx>). This structure was adhered to, with the WCC opening its doors to participants at around 8.30am, and closing some time after lunch. This suited participants, who would customarily walk into town from Katumpul village early in the morning with those participating in CDEP undertaking their required four hours, and then people would generally retire back to their houses and wait out the heat of the day. This social and work community intermixing enabled the WCC to maintain and invest in the traditional social aspects of Ngalia (and broader Western Desert) culture (see Lieberman 1985). As such, CDEP played a significant facilitative role with regard to the financing and labour structure of the WCC.

After a short period, the WCC became a place to manage other Ngalia development activities. Ngalia research partnerships with universities and other institutions often required regular meetings spaces, and the WCC offered a central place with easy pedestrian access. Prior to the existence of the WCC, community meetings were either held 'on country', or in other town facilities, such as, Katumpul Village office, or the Community Health Office. This convenient interaction meant that the WCC became the location for disseminating university research findings (i.e. their NRE

initiatives), to showcase to both other Aboriginal groups and local industry/government their autonomous EnCDD successes. Thus, the WCC became the primary place of observation for this research project, as it was the 'activity hub' for Ngalia community development, as well as providing a suitable physical environment for Ngalia ICT interaction.

7.1.6 Existing ICT infrastructure and degrees of interaction

As stated, Ngalia ICT interaction existed prior to researcher contact. The WCC had a number of pre-existing ICTs on the premises, including a large professional scanner/fax and publish-grade printer, a PC computer running Windows 98' operating software, several early model 3mp digital cameras, and a telephone. These items were used through existing projects, primarily the NRE project. The printer was used to print out project material during meetings and workshops. University researchers would often require material to be printed during activities to disseminate project plans and results to community members. The printer's USB connectivity made this a simple task, as community members readily interacted with the device. It was also used to print, scan and fax much of the related CDEP administrative forms as required each week. Early on in the researcher's contact three community members were observed operating the printer/fax machine, with all three members being middle-aged and two women.



Image 7.2: One of the WCC women working on an original computer in 2007

The computer, while functionally sound, was not connected to the Internet, and was primarily used to process and edit word documents, which would be printed or shared via fax. It was also used to store project material, such as research reports produced by external institutions. Initially, only a middle-aged man regularly used the computer. This man drove many of the Ngalia development initiatives, and personally owned many of the assets used at the WCC. Observations suggested that the lack of operational skills inhibited more extensive use by other community members, whom, when questioned about their usage levels of these devices, either responded with 'I don't know how' or 'I don't need to'. These responses indicated that while some Ngalia community members had capabilities in ICT usage, and had knowledge on their application to Ngalia development initiatives, many lacked these skills.

In 2005, the researcher also observed the relatively low mobile phone adoption rates by WCC participants. Of the 25 initial participants (including 12 youth < 18 yrs old) involved in the founding P4P NRE project, only five had mobile phones. Of these five phones, four were basic in capability and operated on a pre-paid credit system. One middle-aged man had a more advanced 'smart phone', which had basic email and limited web browsing capabilities. During informal interviews, the key informants explained that mobile phones were too expensive to use. Several commented that they were always running out of credit, which was costly to replace, and that other family members and friends were always asking to borrow their phone to make calls to CDEP administration, family, banks, and friends. Therefore, they said it was not practical to own their own mobile phone, as they ended up paying for everyone else's calls.

Despite stating they did not use the devices in the WCC, a number of Ngalia informants stated that they had experience using ICTs in different environments, e.g., at home, work, the town telecentre, and/or jail. Four of the Ngalia families had personal computers at home, two of those with Internet connections. The informants indicated that their use ranged from word processing, excel databasing,

online shopping, youth gaming, web browsing, and basic web design and management, and mobile phone interaction. When asked why they do not regularly use the existing computer at the WCC, despite owning a computer at home, one male respondent stated: *'I sometimes do paintings there ... that computer is for other things. Yeah, I've got a computer at home ... I do use it all the time... buying stuff on e-bay, look up stuff... yeah, we use them at work'* (PM2, personal communication, 15 April 2007). Despite being a senior male with a degree of community stature, he expressed no animosity for this but said that he did not have a need to use the WCC computer, nor did he have a role that justified him using the computer.

This view alerted the researcher to the pitfalls of outsider interpretations of 'deficit' capacity assumptions around Aboriginal ICT usage. This realization affirmed that there was the potential for greater ICT adoption and interaction within the Ngalia community. The view also elevated awareness that local socio-cultural values and protocols could impact on ICT adoption strategy and practice, especially if it was to be utilised for EnCDD agency. These realisations suggested that the community ICT adoption levels may not simply involve a capacity-driven paradox and that a simplistic capacity-based correlation for ICT interaction would fail to capture the 'how' and 'why' of Ngalia ICT interaction, missing many of the subtle cultural nuances that may, or may not, affect determinations of how ICTs may best serve Ngalia people in their development journey and why.

The multifaceted and evolving theory and practice of EnCDD in the literature review enabled the researcher to clarify these early research project experiences. The early institutional-driven community development project processes essentially involved a normative and exogenous driven approach to community development. The community wished to pursue an alternative and EnCDD approach. Drawing on the development ideas presented in Chapter 3, Table 7.1 summarises the alternate interpretations of key development elements, i.e. needs, capacities, resources and agency approach, to this endogenous paradigmatic shift. The contrasting binary view of community development is presented not to assert that the exogenously

conceived and institutional driven approach to project work had elements that were not commendable. Indeed, a partnered approach may create mutual opportunities and benefits. However, Sen's (1999) emphasis on the need to shift development interpretations from 'equality of opportunity' to 'equality of agency' highlights the impact of asymmetry of power relations in development partnerships. Thus, involvement as a participant observer in an EnCDD strategy presented the researcher with an opportunity to address this power asymmetry, to leverage an alternative view and arguably, to learn about the influence of this power shift in development agency and outcomes. These realisations made this thesis' focus on the agency role of ICT interaction in Aboriginal community development compelling.

Table 7.1 Alternate interpretations of Leonora Aboriginal community development agency

Interpretations of Ngalia Aboriginal community development agency	
Exogenous approach	Endogenous approach
Needs assessment rationale: Universal – Western culture, science and economic abstract theory and practice	Needs assessment rational: Local Aboriginal cultural specificities, practices and lived realities
Deficit, exploitative and/or paternalistic view of knowledge, resources & capabilities	Asset and integral view of community knowledge, resources & capabilities
Prescribed solution: externally determined 'equality of opportunity'	Ascribed solution: locally determined 'equality of agency'
Development strategy: exogenous-led 'best practice' and partnership driven	Development strategy: endogenous-led and 'best fit' community driven
Change: transmissions – short term, and measurable outcome	Change: transformation – long term, meaningful and liveable outcome
Project officer role: expert, pedagogical assimilation	Research project role: participator, explorer, learner & facilitator

7.2 Innovative ICT interactions at the WCC – Project phase 1

This section discusses the first externally facilitated ICT initiative at the WCC, the production of the NRM video in a collaborative partnership with WCC, Curtin and staff from the University of British Columbia (UBC). The intent of the video project was to demonstrate Ngalia interest in and management skills for their natural resources. However, the collaborative process also contributed to unexpected results in the area of youth participation via participatory video.

7.2.1 Participatory video and the WCC – Project 1

In May 2006, the researcher facilitated a link between the Ngalia community and two visiting research fellows from the Non Timber Forest Products Organisation (see <<http://www.ntfp.org>>) and UBC who were internationally experienced in Indigenous natural resource management (NRM) and NRE, as well as Indigenous ICT for development (ICT4D) methodologies, and in particular, participatory video and participatory geographic mapping systems (PGIMS). Through a forum of WCC participants, it was proposed to the Ngalia community that, drawing on the experience of the research fellows, a two-week field-based project be developed linking this with Ngalia development objectives to produce a tangible outcome for the community. The researcher (and relevant supervisors) felt this opportunity may suit the Ngalia community, as the project outcomes would not have to adhere to institutional research guidelines, or address pre-determined research questions. The community could utilise the resources to deliver an outcome that met their needs. This opportunity reflected a synergistic, win-win collaboration with an underlying critical motivation to empower community agency. The Ngalia community asked for some time to think over the proposal before responding. Two months later, (ten days prior to the allocated field work period) the community agreed and the project was formalised. While unnerving for the external research team, who still had to purchase field equipment, this more community centred proposal would provide them the opportunity to follow protocols to inform decision-making and gain the consent for from the appropriate community representatives.

7.2.2 Project 1 – design, planning and implementation

The researcher, the two research fellows and their two young children were to spend two weeks working with the Ngalia community in Leonora (through the WCC) to produce a capacity building exercise based around NRM and use PV to communicate the project outcomes. On arrival at Leonora (after driving for two days), the researchers met with community members at the WCC and began to workshop the project. Initially, examples of past NRM and PV projects with international Indigenous peoples were presented to Ngalia participants to illustrate opportunities and examples of outcomes for the project were suggested. After several hours of expert-led explanation and attempts to workshop the potential project objectives, one senior male stated the community had already held several planning meetings to develop their long and short-term goals, which they would like to present to the research team.

PM1 stated that the community was aware of the current trend within the resource industry to purchase the leases of pastoral stations and to de-stock them. Within this process, the practice of ‘capping’ station water bores no longer required for animal stock had been adopted. This practice negatively impacts upon the Ngalia community (and many of the region’s other Aboriginal groups) through the removal of access to water resources. Since the implementation of these bores during the pastoral era they had come to rely on them for drinking water; and the *‘water holes, windmills and drinking stations were also used by many native animal species’*. The Ngalia people regularly prey on these native animals for subsistence ‘bush meats’. The station water facilities act as game attracting points, increasing short-range population numbers of these animals, which in-turn made hunting them easier and reliable. Thus, from the community point of view, the removal of station water facilities reduced their capacity to effectively and regularly undertake subsistence hunting and re-fill drinking water during travel between towns and cultural lands to attend traditional ceremonies, such as law initiations and funerals. Hence, creating a video to show external parties, i.e., key decision makers, such as shires, government agencies, and industry, the reliance that they have on these

water sources, and the negative impact loss of these resources has on community life, would be a valuable community resource. It was suggested they could screen the video at an upcoming conference, and use it as a tool for future dialogue with relevant external government and industry parties.

In addition, he explained that to register a land claim under the Native Title Act, the community was also in the process of submitting a native title application to the High Court of Australia. Under the Act, claimants must demonstrate to the Court evidence of cultural interaction with the specified area over a given period of time, including pre-contact with European settlement. Thus, it was suggested that they could include in the video aspects of Ngalia culture that relate to traditional NRM, and how they interact with the natural environment and its resources when on traditional lands. These issues clearly articulated to an EnCDD community-based needs assessment rational encapsulating local Aboriginal cultural specificities, practices and lived realities.

Thus, there was agreement to explore interrelated development themes, but that further clarification of participant roles and procedures could be explored 'out bush' field trip as the project unfolded *in situ*. The project participants (consisting of any interested WCC participants, limited only by vehicle space) would spend four days travelling on traditional lands, visiting and documenting natural resources that Ngalia and other Wongatha peoples readily utilised. Following a PV methodology, participants would be taught (if required) how to use video and stills cameras to document the people-environment interactions. External participants would assist only as required. This would take the first half of the allocated time, with the remaining period on post-production video editing back at the WCC. The final phase would gather community feedback on the process, and screen the video at the NRE conference in Kalgoorlie. The group, consisting of 16 Ngalia community members, and five external parties (researcher, fellow and children) set off the following day to film the project. Age range and gender mix of participants was somewhat even, with both sexes represented from early childhood to late adults. Three 4WD vehicles were used for the group and food, camping and technical equipment.

To illustrate the basic nature of the project and accessibility of tools used, the following ICT equipment was used: three standard definition digital video recorders (Panasonic GS 4000), one Rode video microphones, three tripods, two laptop computers, three digital cameras, and one external hard drive. Only one video camera and tripod were purchased specifically for the project, and an attempt to use equipment that was readily available to WCC members was made to increase the likelihood of participation and post-project interaction. Familiarisation, accessibility, intuitive functionality, robustness, and inclusiveness were all key aspects to consider when selecting the range of ICTs for use in this project. Selecting equipment that would deliver the targeted NRM project video outcome, and promote inclusive and self-driven interaction was a primary concern for the PV process, and more important than using more technical and professional equipment, which may produce a more 'polished' end product, but limit the participatory empowerment and capability building outcomes gained through the group interactions.

The first day was spent setting up the camp and informally settling in as a group, with collective understanding emerging of what we were all working towards over the field trip. That night community members agreed the following day we should try to locate a particular plant. According to the seasons, the region's population of *Solanum central* (Australian Desert Raisin) should be in fruit, a highly regarded bush food by Aboriginal peoples with notable Vitamin C content (see Smith & Smith 2003). The next day, under the guidance of key community informants, the group managed to locate several 'patches' of *S.centrale*. However, they were void of any ripe fruit. This circumstance, according to the community informants, was likely due to either a high population of Bush Turkey (*Ardeotis australis*), or human predation. Despite the location being nearly 100kms away from the nearest town and with only dirt roads between the camp and the town, there were apparently numerous other Aboriginal people camping in the immediate vicinity and human consumption of the fruit high accounted for low availability. Thus, further travel from settlements to locate the fruit was required.

Later that day, an informal videography exercise was conducted between the researchers and interested adult participants. Initially, a number of the youth showed a desire to learn, though quickly became distracted with the other happenings around the camp. The exercise was to support the participants in unfamiliar equipment use, and to demonstrate how the researchers had set up previous similar community productions. This included discussion on topics, such as, what type of activities they might like to film, the best times of the day to film, framing a shot, using the tripods, and recording audio. The researchers also made some suggestions on how to conduct an informal interview when filming a subject. This exercise was intended to provide participants with basic technical levels of confidence to unpin their autonomous decision making on when, how and what to film. The researchers would only intervene if needed.



Source: J Corbett

Image 7.3: WCC youth learning how to operate the video camera

The following day, the group travelled west to an area on the fringe of the pastoral lands, and into the De La Poer Range Nature Reserve, north east of Laverton. The group located a patch of fruiting (ripe) *S.centrale* amongst a sandy 4WD track running parallel to a fence line. The patch consisted of less than 500 plants and covered an area of around 100m². The habitat classifies as Spinifex country. After a long morning driving (50km of 4WD tracks) the group was most excited with their find. For a number of the participating youth, this was their first experience with *S.centrale*, and their parents began to pass on knowledge of the plant regarding where to find it, what stage of the fruit to eat, and why it is a healthy food. One of the video cameras was used to film an interview with an elder discussing the fruit of *S.centrale*. Everyone was ushered in to observe the interview made by the adults. Then the group dispersed and continued harvesting and consuming the fruit. One of the video cameras was given to a group of six boys aged 7 to 13. The elders hoped they would film some of the group harvest, but were willing to see what they would use it for without any strict guidelines. That evening, some of the footage was captured to a laptop and screened to the participants.

The following day, the group met up with a group of Aboriginal peoples from the Laverton and Mulga Queen area who were at their holiday camp. At this camp there was an elderly woman who was senior within this local community. Members of the Ngalia group knew her well and were aware of a particular political 'flashpoint' she was having with local authorities regarding access to water. Ngalia members spoke with this senior woman, telling her of the project's objectives, and asked her if she would be willing to sit for a filmed interview on the matter. She agreed. The Ngalia participants and researchers set up two video cameras, and audio equipment, and began the interview. The questioning at this point was co-led by male researcher from UBC, who had extensive experience in one-on-one interviews, and a senior Ngalia male, who the senior woman knew and trusted. The interview covered subject matter highlighting the politics of the situation, the implications of being denied access to this water for the communities, and what they will do to overcome this situation. The following issues were identified in the interview:

- Station owners had padlocked gates, preventing the community from accessing a traditional and readily utilised water resource on traditional lands;
- Despite community members having dialogued with the station owners over the negative impact of this on their ability to engage in cultural activities and safely travel through the surrounding remote country with access to reliable drinking water, the padlocks were not removed;
- Community members had taken to forcibly removing the padlocks themselves, to regain access;
- This was leading to increasing tensions between community members and station owners; and
- According to the senior woman, while community members were unsure of whom to talk to resolve the situation, it was clear that if nothing were done, they would continue to cut through the padlocks and access the water.

The researcher noted that despite their being a number of other community members at the holiday camp during the interview, no one else volunteered to contribute to the interview, nor were invited to do so. Subsequent investigations suggested that this response was a protocol matter; the senior woman was the appropriate person within the community to voice the matter, and it would have been culturally disrespectful for anyone else to do so. A noteworthy point at the time was that the researchers had been concerned that community members did not appear to be comfortable participating in the ICT interactions. While timidity and the inhibiting nature of technical equipment are understandable, this indicated that awareness and sensitivity to protocols had additional relevance for reluctance to participate in interviews.

During the course of the trip, the group captured numerous other informal and formal activities using video and still photography. This included visiting particular sites during the long days travelling, hunting *marloo* (kangaroo) for food, cooking meals around the camp, and sighting of particular animals, i.e., goanna, and emu. In many instances, especially post the *S.centrale* harvest, youth were given

independent access to both video cameras and stills cameras and were free to capture video and stills as they chose. Several elders noted that this would possibly provide them with evidence of what the youth were or were not observing and learning during the field visit. Time spend on traditional lands are usually periods where elders pass on knowledge and cultural learning's to the youth (Lieberman 1985). So here the ICTs were being used to candidly review the degree of intergenerational knowledge transfer from the elders to the youth – an ICT interactive process entirely conceived by the participating Ngalia Elders.

On returning to Leonora, post-production was untaken at the WCC. The field trip had taken one extra day, and so there was one less day to edit the video prior to screening it at the NRM conference at Kalgoorlie. Unfortunately, this meant the only way to complete the video was for one of the researchers to undertake the editing role, with a key community member directing the content while observing and learning the editing process. Ideally, the editing should have taken longer and been inclusive of building community capacity. It was agreed that as the researcher would continue working with the Ngalia people they would have further opportunities to build their digital editing capacity. However, prior to starting the edit, all community participants met to workshop how, knowing the content they would structure the short video. The group agreed the video should consist of a series of short sections on all of the key resources the participants had experienced over the course of the field trip with the researchers. This would include mini-chapters on water (*Kapi*), meat (*Mayi*), and specific plants (*Kumparra*).

A standard non-linear video-editing program, Adobe Premiere Elements (<http://www.adobe.com/products/premiereel/>) software, was used to edit the footage. A researcher's laptop was used to edit the footage, coupled with a larger viewing screen so participants could easily track the process. During the editing process, carried out in a visually accessible area of the WCC, a constant stream of interested community members (not always Ngalia) came in, albeit with a degree of shyness, to observe the process. They were most interested in seeing people they knew in the footage, as well as recognising the country visited, and the flora and

fauna collected during the trip. Two young Wongai men asked if they could come out on any future trips.

7.2.3 Project 1 – review and assessment

On the last day in Leonora, the edit was completed and a final draft screened to the community participants for review and feedback at the WCC plus several other WCC participants. Responses indicated that everyone approved of the content, and great enjoyment at seeing what they had created was demonstrated in audience reactions:

Yeah ... good. I think it turned out well. Probably a bit more time would have helped, but I think capturing the message, it seemed to have worked. There were some edits that need attention, but we'll leave it (finished) and move on to other things.

Yeah, it will (be useful) as an educational tool, as a communication tool, that's pretty much what it's there for. In the long term, it will probably become an archival thing for future generations, but in the current era it will be used as a communication, education tool to educate respective audiences about what we are, what we want to do and what our respective priorities are (PM1, personal communication, 21 April 2006).

The researcher noted that the most positive response from the group came from the plant chapter (*Kumparra*). The footage shot by the group of boys consisted of a spontaneous interview, where a young Ngalia male filmed interviewing the three other Ngalia boys about the *Kamparra* harvest. The interviewees responded with information on the names of the plant (Western and Ngalia language), when to harvest the fruit, why not to eat the green fruit and how to consume the fruit. The group of boys had also carried out similar interviews on other plants and bush foods, again, totally independent of any adult, elder, or researcher instructions. They had observed the elders and researchers conduct an interview several days prior, and imitating with the camera showcased their level of traditional ecological knowledge on the plants.

It was good... to see the boys doing their filming, Kumparra. Yeah, talking about plants. They learn.

Nope, I've never (heard them talk about the plants like that), that was the first time. It's good to see that they learning, you know? ... Them boys don't want to talk to us about it, they rather run amuck with all them other kids (PF2, personal communication, 20 April 2006).

The elders noted this outcome; that they were unaware of the youth learning the traditional knowledge (TK) they were discussing during their interviews. Pleasantly surprised, the elders were impressed that the youth were absorbing the TK during time spent out bush on traditional lands. From an elder perspective, this intergenerational knowledge transfer 'on country' is critical for Ngalia cultural survival. Copies of the video were made on DVDs and given to the participants and in some cases these were quickly lost or damaged and replacements were in high demand.

The following day the video was screened publically at the 'Plants for people: Aboriginal wild harvest and land management' seminar, held at the Centre for the Management of Arid Environments (CMAE) Kalgoorlie, Western Australia (<http://www.desertknowledgecrc.com.au/publications/dkrc-0635>). Diverse research professionals, regional decision makers and Indigenous peoples, including representatives of Kalgoorlie, Leonora, and Collie communities, attended the seminar. PM1 and one of the UBC research fellows gave the video presentation, which consisted of an overview of the project followed by a screening of the video. Several Ngalia community members were interviewed on the impact of the video post screening:

I think it went well ... in this meeting, for instance, it was directed at a couple of key audiences, one was the Goldfields Land and Sea Council (GLSC) [see <http://www.glc.com.au/>], the other one were the other Aboriginal groups in the audience, who were specifically of the Wongatha Native Title Group, ah, the Indigenous Land Corporation (ILC) [see <http://www.ilc.gov.au/>], and I was disappointed that the lady from CALM [see <http://www.calm.wa.gov.au/>] actually left before viewing it. So yeah, it's that kind of audience the video [is designed for], and as one of the delegates today said, in the school system (PM1, interview, 21 April 2006).

This comment emphasises recognition of the outreaching – bridging and linking – social and cultural capital capacity that this type of PV interaction can create to support the community achieve its development goals. A questionnaire was given to a number of the seminar attendee’s (via email), within a week of viewing the Ngalia video. This aimed to gather feedback on the impact the video had on external power brokers and decision makers, especially relating to how the Ngalia generate support and assistance for their community development initiatives. The general feedback was the video captured the core sentiments of the participants, their desire to manage NR on traditional lands. The use of video was an engaging method for communicating this message that captures the authenticity of the message. However, the video was considered to be of low production quality, and considerable efforts would be required for it to be deemed of ‘broadcast quality.

A number of Ngalia community members were interviewed with responses recorded and captured in the researcher’s field notes to gain feedback on the PV process. They were asked what they thought of the three-step project planning process involving:

1. Community meeting to decide project objectives and video content
2. In-field reviewing of content and narrative direction
3. Rapid editing, with constant community observation, guidance and feedback.

One respondent expressed concern for the initial researcher-led planning process:

I was a little concerned at the initial stages when you wanted to have community meetings and consultations and things like that. Basically, I don’t have time for them, and I know a lot of these consultations tend to take up a lot of time, and in our context in particular we have a fairly clear statement, strategic plan that we are working towards, so people coming in visiting and working with us are invited to come in and contribute to meeting those elements of the strategic plan. So in that context workshopping and going over stuff we have already made decisions on and set directions on, I just don’t want to reinvent the wheel. Be aware of it [the community plan], be responsive to it and understand that communities are identifying what their needs are and identifying strategies to achieve those needs (PM1, personal communication, 21 April 2006).

With regard to the engagement of the youth through technology, several participants indicated support:

It was good, yeah, everyone could do a little bit' (PM7, Interview, 20 April 2006).

Those boys really liked using the cameras, they were good at it too (PF10, Interview, 20 April 2006).

Yeah, them cameras, you see, give them [youth] something to do, you know. Just hunting normally (PM3, Interview 20 April 2006).

Reflecting on the suitability of this project for replication when interviewed a key respondent stated:

The community needs to have a clear vision on where it wants to go and where it wants to go and these ... ah sort of projects are managed and driven by the community . . . The process which we basically developed as we went through the activity ... I think the process worked . . . Yeah and I think the process and final product is exactly what we needed to launch the Ranger Programme. I think a video was a much more beneficial outcome than a web presence, because everyone had a hand in contributing to produce it, film it, and edit it. So it's a process of bringing unity into the setting (PM1, Interview, 21 April 2006).

This comment acknowledges community participation as a vital part of the project, and indeed, the participatory agency is recognized as the primary benefit of the entire project. Confirming this view, researcher also noted that the elders viewed the collaborative and participatory production method as a valuable 'bonding agent' at the community level; that it worked to strengthen community relationships and internal cohesion. Perceptions of the value of this collaborative and bonding social capital outcome was deemed significant as the participants involved included several family members who have negative histories. A final comment noted the cost effectiveness of the project. It was not a big-budget project, costing less than A\$10,000, including in-kind contributions such as food, fuel, transport, labour, housing and cultural advice). Feedback indicated that amongst Aboriginal people, especially those located remotely, that there is a perception that you must have vast amounts of money to produce a video.

7.2.4 Project 1 – future directions

PM1 indicated that due to the success of the video project through the WCC, the community was seeking further investment in ICT related training with aims to incorporate this within future Ngalia research and development activities. *'We are planning the next field trip where we are going to use it as a recording tool'* (PM1, personal communication, 21 April 2006). The informant reflected that subsequent videos might also have an important advocacy role within Ngalia political activities, providing a more emotive and persuasive message than printed text material:

If you are doing lobbying and playing the political game, having audio and visual as well as print materials is a useful way of communicating a message. If we have the right format you can get footage for television and news, so there's always those options. I'd probably approach some of the Aboriginal-owned media outlets and see if they were interested in screening even this video, there is an opportunity to have an element of the cultural centre [WCC] devoted to media production. I know there is a radio licence sitting and waiting in Leonora at the moment, and there's narrow-cast broadcasting, which is a possibility, as well as the fact that in the next two or three years there will be a national Aboriginal television station In Western Australia (PM1, personal communication, 21 April 2006).

This rhetoric indicates reflective awareness of how ICT interactions can contribute to community opportunities. However, the need to build internal community ICT awareness and capacities to assist them to achieve development outcomes is also recognized.

In that sort of time frame your looking at kids like (those participating in this project) having access and exposure to DVD production through the Cultural Centre, in the time frame of two to three years time, the National Broadcasting Facility will be looking for people to employ and engage and that's where the talent pool will come from (PM1, personal communication, 21 April 2006).

This ambitious agency view emphasises that at this stage of their participatory ICT experience, in particular, the community leadership sees a value in youth ICT interaction; not only for increasing future employment capabilities, but also in terms of cultural-engagement and revitalisation, and facilitating intergenerational

knowledge transfer. Table 7.2 summarises the key ICT related development agency elements to PV project phase 1.

Table 7.2 Summary key ICT related development agency elements – PV project phase 1

EnCDD PARTICIPATORY VIDEO – PROJECT PHASE 1				
Participants	ICT used	Participatory approach: 'Community directed & emergent'	Themes: Advocacy & traditional knowledge	Outcome
Ngalia community - adults, & children	PV PP PC	Aboriginal autonomy on decisions on project objectives, themes & location	Community problem: Access to pastoral station bores	Outreaching political advocacy: issue & voice raising
Laverton representatives		Aboriginal autonomy on equipment use	Water	Internal & cross-community strengthening: way of life 'together-on-country'
Two Canadian research fellows & two children		Aboriginal youth autonomy on equipment & content	Hunting	Traditional knowledge (TK) application
The researcher		Exogenous expert technical advice as needed (equipment and editing)	Plants	Intergenerational TK transfer

7.3 Participatory video (PV) and the WCC – Project phase 2

Subsequent to the community NRM video project, the researcher workshopped a strategy for further ICT initiatives to support both Ngalia development outcomes and this research project. Unfortunately, due to a widening gap between the core objectives of the university NRE project and that of the participating Ngalia community, the NRE project funding much of the researcher's travel and associated access to the Ngalia community ceased.

Thus, in late 2006, the Ngalia community withdrew as participants in the NRE project. This placed immense pressure on the researcher, who was required to maintain a positive working relationship with both parties, as well as fund travel to the research community to complete this doctoral project.

A informal reciprocal benefits plan (RBP) was developed between the researcher and the Ngalia community that stated the researcher aimed to assist the community with the design of projects and the building of participant capacity for future ICT interactions. In return, the Ngalia community would maintain and facilitate the researcher's access to the community through some support for time invested, payment for flights and accommodation while in Leonora, and purchase of ICT equipment where possible. Community investment in this new RBP reflected growing trust and reciprocity between the community and the researcher.

In Wongai and Ngalia culture (and broader Western Desert Aboriginal culture) it is inappropriate for unmarried males and females to come into regular contact. Therefore, given the researcher was now working more directly 'for' the community members, without governance or external direction from research institutions, it became more appropriate to limit his practical contact to elders, married women and males. Thus unless stated, females between early teens to 30 years (unmarried) largely fall outside of the participant demographics of this research project from here in.

The researcher purchased a computer for the WCC to train community members in non-linear editing, develop and store the increasing volumes of community multimedia involving audio, video, and imagery. A Mac Mini small form desktop computer (<http://en.wikipedia.org/wiki/Mac_Mini>) was provided, along with associated hardware, such as a flat screen monitor, mouse, and a range of word processing and data management software. On the basis of his extensive experience operating them, the researcher suggested an Apple brand because he believed the high level of iconography included within the operating system, may benefit the cultural traits of the Ngalia people, and those with low literacy levels. There was a risk implicated in this technology choice as none of the WCC participants had experienced this type of operating system before with all previously using Microsoft-based systems. However, the community was willing to test its appropriateness. The computer was located within the WCC, and the

participants determined access, agreeing this would be given to any WCC participant to assist with their ICT-related projects. An Internet router was sourced from a community member's home, and the WCC paid for a broadband Internet connection. This was used to connect both the existing WCC PC and the new multimedia computer.

The researcher used the remainder of 2006 to assist community members to migrate and organise much of their digital data on to the new computer. This was done over several visits to Leonora, and numerous phone conversations. During this period, the WCC participants autonomously developed a basic web page (see <<http://www.ngalia.websyte.com.au/>>) to give them a web presence, labelled through the community's research organisation, the Ngalia Heritage Research Council. This autonomous outreaching or 'linking' ICT strategy was driven by PM1, who has significant comparative experience operating computers. The site is basic in nature and consists of four sub-pages outlining the history of the Ngalia people, a contact page and how to provide financial assistance to the community. This fund raising strategy is facilitated via a live PayPal link to the community's tax deductible appeal managed through a formal relationship with the National Trust of Western Australia (<http://www.naturalheritage.org.au/Ngalia_Foundation_Appeal.html>).

The site was administered at no cost through the Community Networks Guide (<<http://www.communityguide.com.au/>>), a free service providing a very basic web page for community based organisations, and hosted through the Websyte Corporation (<<http://www.websytecorporation.com.au/>>), who target high-ranking search engine results for their hosted sites. As of 2011, the PayPal link was not activated, excluding through-site donations. However, when the researcher raised this point several times, community members stated they were happy for the link to remain inactive, as the site's aim was to create awareness of their appeal and relationship with the National Trust of WA (NTWA). Information on the site gave a point of contact within the NTWA and the community hoped potential donors would follow this lead, seeking further information, and subsequently, a donation.

In October 2006, there was an opportunity to accompany a number of Ngalia community members to a cultural awareness course they were facilitating with senior members of a mining company. PM1 operates an enterprise giving cultural awareness training to regional industry and government. A number of community youth would be participating in this trip, including those present during the NRM project, and the opportunity to guide them through a second video project was presented. The researcher noted the *Lonely Planet* (<http://www.lonelyplanet.com/>) had announced a short 'geographic place' video competition, calling for video entries of 'great moments in travel', with videos limited to less than three minutes. The community supported the idea of having the youth produce and enter a video. Accompanying the group was a senior researcher from the Desert Knowledge Cooperative Research Centre (<http://www.desertknowledgecrc.com.au/>), who was observing the functions of the community member's cultural awareness enterprise. They also agreed to assist with funding a 4WD vehicle for the researcher and youth to travel away from the camp during the day and film their project. The next section describes this youth PV experience.

7.3.1 Project phase 2 – 'on the run' youth PV

During the three-hour drive, the researcher used the time for the youth to discuss and plan for their competition idea and identify any themes they might like to explore. The four youths, all boys aged 11 to 13 years were informed that while the elders were teaching the miners, their 'job' for the weekend was to create *their* video; that the 4WD vehicle and video equipment was at their disposal; that within reason considering their age and the remoteness of the country, the researcher was only there to drive them to suitable locations and assist with aspects of the filming. Instantly, the group became highly enthusiastic with the realisation the elders had bestowed on them a task and the responsibility of using equipment.

One youth, a confident boy who participated in the community NRM video, thought they should make a hunting video, as the last one was mostly about plants, which he stated to be 'women's business'. From the researcher's experience, male youth

consider hunting for 'bush meat' to be one of the most privileged activities in day-to-day community life. This suggestion was rapidly enthused by the rest of the group, who began accounting for animals they could target. With the researcher reminding them of the target audience and that we were unable to use a rifle, the boys suggested they use their '*shangi*' or '*gings*' to hunt '*papinmaru*' (goanna). All of the boys had with them various homemade gings, a device made of some salvaged rubber for tension, some string and a leather pouch for holding a projectile (small rock). They would use this hand-held device to hunt birds and goanna when out bush with family. The group knew it was the correct time of year for *papinmaru* (usually *Varanus gouldii*), who were often seen walking around in the open sunning themselves before the winter cool set in, which made them easy prey. The researcher had discussed the boy's idea with the elders, who approved, though reminded the researcher to watch the youth's enthusiasm for hunting, only take what they needed for filming the project, and bring the animals back to camp so they could demonstrate the food preparation and cooking protocols to the miners.

The following day the group set out to film their project with the researcher. The first scene consisted of the boys showing how they fabricated their *shangi* hunting tools from old footballs, and how to aim and fire them at a target. The youngest of the group was interested in operating the camera, and was taught how to film the scene. Several *papinmaru* were located during the day, with the youths guiding the researcher along a network of sandy tracks. While driving they were constantly on the lookout for either animals or signs of animal habitat such as goanna patches, a network of burrows created by a colony of goanna. Upon sighting an animal, the researcher was abruptly instructed to stop the vehicle, while three of the youth set chase on foot. The researcher and the remaining youth would rapidly set up camera equipment and film the event. Some rough footage was shot of several *papinmaru* who escaped. However, the group managed to film the successful hunt of one large four foot-long animal found wandering near a water hole. Due to the highly excited commotion experienced, the youngest youth relinquished his filming role and ran to join the others in the hunt as the animal ran for the trees. The researcher in this instance stood in to capture the culminating drama.

Proud of their victory, the youth returned to camp to show the elders what they had achieved. Having managed to capture such a fine *papinmaru*, they received much praise. The animal was given to the senior male elder, whose role was to prepare the animal for cooking later that evening. The youth then filmed one last section explaining how they tracked the animal and managed to catch and kill it. They talked about how it was prepared for cooking and how much they enjoy getting out of town and hunting in the bush: *'We like getting out of town. In town it's just boring ... nothing to do. If we've got no petrol or nothing, we just walk out and go hunting for some papinmaru'* (PYM1, 15 October 2006). Unprompted by the researcher, the youth recited traditional names of the animal, and the tree's it subsequently climbed for protection: *'And the other Wongai names are Papinmura, Yilpa, and Bungarra'* (PYM2, 15th October, 2006. *'It ran out from under the tin, and up into that prickly bush, that Kurara tree [Acacia tetragonophylla]'* (PYM1, 15 October 2006).

After lunch, the youth captured the footage to a laptop and edited a short rough cut of their video, with the assistance of the researcher. They used iMovie on a MacBook Pro to capture and edit the footage, a basic but sufficient non-linear editing program that emphasises iconography into its operating system. This makes operation increasingly intuitive for people with low literary rates, and/or digital editing software experience. The researcher demonstrated to the youth how to capture, cut, and stitch scenes together initially, and then let them review their morning's footage and take the lead to select scenes and stitch together their video. At the completion of the edit, the youths as a group were capable of independently navigating the iMovie software, only requiring the researcher's assistance when progressing to tasks not previously demonstrated.



Image 7.4: WCC youth editing and reviewing their video

The youths completed a draft of their video by evening and that night it was screened to a group of 20 executive miners and several community elders at the completion of their cultural awareness course. Researcher observations indicated that both the youth and elders were very proud of the video, which received acclaim from the miners, who took time to chat with the youths during dinner about how they had hunted the *Papinmaru* and produced the video. The *Papinmaru* was cooked later that night on a traditional fire and filmed by the youths. The researcher noted this experience was empowering for both the youths and elders, as the project had provided an outreaching and leveraging communication platform for the community youths to dialogue on their hunting and documenting achievements with powerful external community agents, i.e., miners. It was also noteworthy that this whole PV project and the setting for this external community dialogue took place ‘on country’, a pastoral lease in the Northern Goldfields. The youths engaged the miners in interaction on their cultural knowledge on how to capture these animals, how to prepare them, traditional language, and how to create a DVD that captured the whole event. The feeling of empowerment was not just confined to the youths:

It’s good to see the exec’s talking to the boys; I don’t think they’ve experienced that before. They’re showing their talents, making the men (miners) realise our boys are

amazing. No one is usually interested in the boys; think they are always up to mischief (PF3, personal communication, 15 October 2006).

Two weeks later, a community member drove the group of four boys to Perth to complete their video with the researcher's assistance for the competition entry. They reviewed their original draft, and then edited it further to best suite the competition theme. A two-minute version and an extended seven-minute version were completed and burnt to a number of DVDs. The short version was entered into the competition and the longer version archived for review by the elders at the next community meeting, where they would discuss future applications. The video, once submitted, was available for viewing on the competition website, and word of this rapidly spread through the Leonora community as people began sharing site links via email or word of mouth through other community youth, parents, and teachers.

7.3.2 Project 2 – youth PV outcomes

The youth's video entry beat literally hundreds of international entries being awarded runners up in the *Lonely Planet Competition*. Their video was placed on the winners' web page with the other four winning entries, and they received a prize of number of travel books from *Lonely Planet*. The video was also permanently hosted on Lonely Planet's social media site, 'LonelyPlanetTV' (<<http://www.lonelyplanet.tv/Clip.aspx?key=147E014FEBEBF0F7>>), as of January 2011 the video had been viewed 2791 times. It is also 'linked' to a number of other related videos, mostly those with Indigenous or subsistence hunting themes. On learning of their award, it was apparent that the four boys were proud of their efforts as the news travelled through the population of community youth and parents. They become known for their efforts and talents as: i) great hunters, ii) movie makers, and iii) lead examples of proactive behaviour within the local Aboriginal community.



Image 7.5: The youths winning video hosted on the Lonely Planet website

The following statement reflects the sense of pride experienced in the wider Goldfields Aboriginal community:

. . . yeah, those boys, I've seen it [video]. They done a good job. They showing their Wongai ways, how to hunt and all that . . . It is good you know, shows all them walbala [non-indigenous peoples] about our culture, what we do. They think those boys are bad, you know? [the boys] know nothing. But they wrong. See the video, you'll see. They know bush ways, our ways. That's what we want (PF4, after viewing the video, 20 March 2007).

The response of the local school where the boys were enrolled further substantiated the reframing and empowering impact of the *Papinmaru* video. Commenting on the win, the high school principle (personal communication, March 2007) stated that two of the youth were problematic, with high occurrences of truancy and low levels of academic interest. Subsequently, the school published a section in their monthly newsletter about the boys' win, with media celebration extending to an additional article in the local *Kalgoorlie Miner* newspaper.

Reviewing the media discourse identifies different responses to the achievement. In the Kalgoorlie Miner article, the four youth were photographed with the school media teacher, and the article highlights the school's media program, appropriating credit for the boys' win and redirecting self-interested support for their curriculum initiatives.

Despite the project having been a completely community-driven initiative no mention was given of the WCC and role of the youth's elders. For the community, this institutional appropriation was very disappointing, and provoked community anger. On seeing this media reference, one community member argued that the school had done little to support the needs of the Aboriginal community youth, and that they were expected to just fit in like all the other students, without sympathy for the disadvantages they face in relation to mainstream students:

They gave us nothing when we asked for help for the boys, didn't they? Too difficult for them. Now they boys are worth something to them they (the school) take all the credit. Who paid for the project? Huh? The trip? The equipment? Who invested in the boys for all those years? We did, the community did. Now the bloody school comes in and says they did it, we get nothing from it, we deserve it (PF3, personal communication, March, 2007).

The way the school attempted to leverage off the boys' win, without giving any reference or credibility to the youths' initiative and the efforts and role of Aboriginal community organisations, such as the WCC, created further anger amongst some community elders at a subsequent community meeting (WCC planning meeting, 21 March 2007).

Justifying the school response, the Principal referred to the lack of funding and support within the arts for remote locations, and suggested that the boys win would help them increase support for their initiatives, noting that this would help *all* students, including the participating boys (PM8, personal communication, 21 March 2007). The response to address remote community art supply asymmetries maybe a valid exogenous concern, yet in light of Aboriginal discrimination and marginalisation failing to acknowledge this community achievement only worked to

reinforce the status quo and community divisions. The opportunity for the school to celebrate Ngalia culture as depicted in the content of the DVD was an additional loss for the school and the school's approach only worked to increase the tension between the school and the Ngalia community. Angry community informants expressed concern that when the boys were successful their Aboriginality was ignored, but when their school performance fell short, the school attributed this to their Aboriginality. However, for the kincentric Ngalia community, these four boys represent potential future leaders. They recognize that the community's future is dependent on their youths' mainstream education achievements and social inclusion, along with their traditional knowledge education and community membership. To redress this outcome, the researcher facilitated a national media release via the DKCRC with a number of resultant print articles with accurate representations of the community inputs into the project presented to celebrate the achievement and quell intercommunity tensions (e.g., see <http://www.indigenoustourism.australia.com/news.asp?sub=0661>).

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Digital Technology inspires venturing into tourism for the Walkatjura Cultural Centre

Print This Page

March 25, 2007

Lonely Planet video award winners

The Walkatjura Cultural Centre (WCC) is currently developing a cultural tours product offering weekend camps on traditional lands experiencing dreaming stories, hunting gathering, cultural practices. They are also pushing forward with their on-line art sales and Indigenous consultancy services providing on traditional matters to school groups, mining companies, universities and other organisations.

Recently four young Aboriginal boys from the community had their video selected from hundreds of entries from around the world to win the Most Impressive Achievement Award in an international Lonely Planet video competition. The video project was made possible through the joint efforts of the Walkatjura Cultural Centre, the Desert Knowledge CRC, Curtin University of Technology and BHP Billiton Nickel West.

Image 7.6: The Indigenous Tourism Australia media release on the youths' video

These articles (Images 7.5 and 7.6) created the opportunity to refer to other Ngalia (WCC) projects and how the boys' video interlinked to the Ngalia EnCDD plan. Subsequently, the school more positively indicated to the researcher and several of the youth's parents that since project completion a beneficial change in the youths' performance at school was noted, i.e., increased and regular attendance, and participation and interest in curriculum activities. One boy became involved in a school play, which was filmed and produced as a DVD with accompanying booklet made available through the school's media program to students and parents. This positive on-flow indicates the empowerment potential of PV projects for participant individuals and the community.

However, the community considered the project's greatest empowerment outcome was internal. The project occurred without the influence and control of exogenous institutions, such as the school, government service departments, or research institutions, and with only limited facilitator support from the researcher; it demonstrated the community's ability to engage their youth in celebrating traditional culture, and to demonstrate to other community members and to exogenous parties that they had a practical community approach for intergenerational knowledge transfer.

As an additional on-flow impact of these PV project outcomes the issue of succession planning was raised at many community meetings. Great interest was expressed for the opportunities of the PV project and interlinked Web2.0 on-flows, and there was consensus that this ICT interaction model provided an action-based approach for their succession plan. Drawing on this experience the community identified the following key participatory action lessons:

- 1. Engagement within endogenous development plan:** *Youth to be given a role within the broader community development strategy*
- 2. Increase in autonomy, power, and decision-making capability:** *Youth to be given power to make their own decisions, to make informed choices on processes that may affect their community.*

3. **Empowerment:** *Youth to be given praise for both their contribution to the endogenous development strategy, and by exogenous parties interested in their development outputs.*
4. **Increase in future endogenous human capital:** *Youth are able to contribute to the holistic community development strategy, and take on more responsibility as elders relinquish their roles.*

This PV-related experience initiated a new focus on the agency of youths in the development initiatives. Youth-led work had raised positive interest and awareness from exogenous parties, i.e., through media releases, word of mouth, local publications, and a social media web presence. Prior to the participation of the researcher, much of the active Ngalia development agency focused on an adult-centric cycle of archiving and advocacy based initiatives, e.g., ensuring the protection of heritage, and advances of autonomy and rights-based capacities. The youth were exposed to this traditional knowledge (TK), heritage and advocacy work, but now they were aware of the role that PV could play in engaging youth in this development work.

There was high local demand for the youths' extended 10 minute DVD from family members and non-indigenous residents seeking copies. This prompted WCC, with the assistance of the researcher, to burn 30 DVDs, and design and print a cover, selling the DVD at the WCC shop front (Image 7.7). The WCC charged \$20 per copy and any income was put towards future youth ICT projects. All 30 copies rapidly sold out, either to passing tourists, Aboriginal community members, family members (some gifted at no charge), and non-indigenous community members. Approximately \$200 was raised from the sale.



Image 7.7: WCC youth manufacturing DVDs for sale at the cultural centre in Leonora

Motivated by this positive experience, an opportunity to purchase a semi-professional video camera arose in early 2007. The WCC (through private investment of one Ngalia family) purchased a used Canon XL-1s (http://en.wikipedia.org/wiki/Canon_XL-1s#Canon_XL-1.2FXL-1s). The XL-1s was a semi professional, 3CCD, standard definition digital video camera; a model used by independent filmmakers, and suited the WCC documentary style. The camera was purchased as a kit for \$3500 with the aim of future ‘broadcast’ quality productions. The community identified this to be an important outreaching benefit. They determined that the ability for the camera to record in a wide screen format, and with 3CCD colour rendition, increased the likelihood of the selection for Indigenous media, such as the Australian Broadcast Corporation’s ‘Message Stick’ (<http://www.abc.net.au/tv/messagestick/>). With the increasing change to high definition (http://en.wikipedia.org/wiki/High-definition_video), the community recognized they had a two-year window before a new standard definition camera might lose any competitive advantage and that the opportunity for financial returns was minimal. However, the informants deemed the outreaching potential to present community issues meant it was a worthwhile investment. They also hoped to rent out the camera to other local Aboriginal groups for community work, and to partnering research institutions. Having been exposed to the use of videos

and Power Point presentations by visiting researchers and through attending conferences they were keen to adopt a more sophisticated ICT interactivity approach in their advocacy and traditional knowledge development initiatives.

In May 2007, three youth from the WCC were invited to Perth to partake in an ICT networking exercise with youth from the Gap Youth Centre in Alice Springs (Image 7.8). As part of the CRC national conference, the three boys showcased their *Papinmaru* video at the DKCRC stand. They also spoke with the Gap Youth Centre participants about their recent ICT experiences and future projects. The well-published DKCRC event resulted in several interviews between the researcher and interested media outlets with several articles published about the WCC youth, the video link exercise and their winning video (see <http://www.desertknowledgecrc.com.au/resource/DKCRC-MR-May-15-2007-Aboriginal-youngsters-talk-across-the-desert.pdf>). The youth had the new WCC video camera to record a video diary of the event, which attracted positive attention from Conference delegates. The predominantly non-Indigenous and professional delegates were curious as to what three young Aboriginal boys were doing with a visually 'impressive' piece of video equipment, and individuals, including a senior researcher at the University of South Australia, who worked in the field of remote economic development, and Indigenous development through the DKCRC, sought explanation from either the boys or the researcher. After receiving an informal briefing of the youth activities and the greater WCC development initiatives, \$20,000 was offered to assist future WCC ICT activities. This was a genuinely spontaneous offer. WCC participants and Ngalia Elders expressed pride the results of the youths '*travelling to the city and bringing back resources for the community*'.

However, cautious because of prior exploitation experiences they decided not to accept; they felt unsure they could deliver requisite funder outcomes, and would not compromise their objectives to 'fit in' with what the funders might try to impose for their support. This compromising partnership issue was raised at a WCC community meeting several weeks after the conference. Their mixed partnered

project experiences underpinned community consensus about the merits to actively seek independent funding through grant submissions, rather than through exogenous institutional partnerships. Table 7.3 summarises the key ICT related development agency elements to the Youth PV – project 2.



Image 7.8: WCC youth participating in an online link-up with youth at the Alice Springs Gap Youth Centre

Table 7.3: The key ICT related development agency elements of EnCDD youth PV project 2

EnCDD YOUTH PARTICIPATORY VIDEO – PROJECT PHASE 2				
Participants	ICT used	Participatory approach: Community directed & emergent	Themes: Advocacy & traditional knowledge	Outcome
Ngalia community youth	Digital Video iMovie Internet Social networking sites	Ultimate decision-making power, content control, autonomy of assets, all within a positive 'development' environment, i.e. one that values youth agency.	Youth agency: their interpreted value of cultural expression.	Social Role Valorisation (SRV) & empowerment
Ngalia Elders		Guiding and supporting youth	Intergeneration knowledge transfer, Traditional Ecological Knowledge (TEK)	Internally strengthening (bonding): reinforcing elder – youth relationship, youth investment, & engagement role for youth in development activities.
Resource Industry executives		Receptivity	TEK	Traditional knowledge application, accepting 'otherness'
The researcher		Exogenous expert technical advice as needed (equipment & editing)	Facilitate documentation and transmission of TEK	Intergeneration al TEK transfer
Leonora District School		Bridging	Student achievement, (leveraging further support)	Social role valorisation (SRV) of 'troubled' youth

7.3.3 A regional WCC PV production – Project 3

The first major project using the new WCC video camera was discussed at a community-planning meeting at the WCC in May 2007. Two videos would be produced during a weeklong project involving WCC youth and elders to record a) the opening of a WCC art exhibition in Kalgoorlie, and b) a meeting with a *Wongai* elder in Kalgoorlie who is the custodian of many traditional songs. The art exhibition included speeches from WCC participants, local elders and visiting Aboriginal spokespeople from other regions. Many WCC members were exhibiting art, and the aim was to record the event as a positive outcome of their community-based projects. The researcher attended, and assisted several youth (the same participants from other video projects) in the event filming using the new camera.

Prior to the exhibition, the researcher, a WCC elder, and three youths met up with a local Kalgoorlie elder known within the community as a 'songman' (see Howitt 1996). This person was well versed in *Wongai* culture and a custodian of literally hundreds of *Wongatha* stories told in the form of song. The Songman was elderly, and at the May WCC planning meeting concerns were expressed that many of his songs and stories could be lost. As he was presenting at the exhibition opening, it was suggested that with his consent, some WCC participants meet with him and film some of his stories as a cultural record for future generations. Key informants stated that this approach had previously been done using audiotape and that the subsequent recordings were useful archives of Ngalia culture. Other informants stated that many youth are not interested in hearing these stories, and to avoid losing them, some Aboriginal people were recording them and storing them until such time as the youth grew up and/or became interested to learn about their culture. The camera was set up in a private room at the Kalgoorlie Arts Centre on a wide angle to capture a number of individuals and activities without the need for constant attention. This was done to reduce the 'presence' of the camera and make the Songman comfortable and only infrequently checking the camera to make sure it was recording.

The researcher assisted in editing the exhibition and Songman footage at a key informant's house with a qualified Ngalia representative making appropriate content related decisions. The Songman DVD required full sub-titling of all four songs recorded. The community member had no difficulty dictating the audio to convert to a text overlay. These were burnt to two separate DVD's and kept within the WCC archives. Both these videos have been referred to in subsequent funding applications submitted by the WCC and Ngalia community, as evidence of prior work for both 'heritage' and 'enterprise' themed initiatives. Table 7.4 summarises the key ICT relate development agency element to PV phase 2 project 3.

Table 7.4: The key ICT related development agency elements to PV phase 2 project 3

REGIONAL WCC PV PRODUCTION – PROJECT 3				
Participants	ICT used	Participatory approach: 'Community directed & emergent'	Themes: Advocacy & traditional knowledge (TK)	Outcome
Elderly Songman	Digital Video, DVD.	Autonomy of content selection, culturally appropriate modes of documentation & distribution	Connection to country	Documentation of oral history, TK transfer to Ngalia elder
Ngalia Elders		Process autonomy: Directing, learning, listening	Community problem: loss of TK. Community asset: Showcase application of TK via arts.	Internally strengthening (bonding): preserving TK, innovative transfer methods. Bridging: TK valorisation with exogenous parties.
Ngalia youth		Learning, listening, observing	TK	TK in practice
The researcher		Exogenous expert technical advice as needed: equipment & editing.	Facilitate documentation & transmission of TEK.	Intergenerational TEK transfer.

7.4 ICT and the WCC international outreaching – Project phase 3

This section narrates on two international Ngalia community experiences directly related to the community's adoption of an EnCDD approach, and the community experimentation and learning about how ICTs may support this.

7.4.1 First Nations People Canada – sharing indigenous ICT agency

In July 2007, one Ngalia family (two adults and three children) were invited to stay with the Canadian research fellows, who were involved in PV Project 1 in 2006. There was an opportunity for PM1 to co-present with one of the Canadian researchers at a post-graduate summer course on community-based research (CBR). The family felt this would also present an invaluable networking opportunity with other Indigenous peoples in British Columbia (BC) and to showcase some of their recent ICT related projects, and observations of other international Indigenous groups' ICT usage within development projects. With the support of the family, the researcher was invited to accompany them to maximise the outreaching and learning opportunity, and as a gesture of appreciation of the ICT related outcomes they had collaborated on. The Ngalia family paid for the researcher's flight from Perth to Kelowna BC, and contributed to other associated travel costs.

During the three-week visit, the Ngalia family met with many First Nations peoples and shared stories of Indigenous beliefs, colonial impact on culture, social and political marginalisation, land rights, and strategies to overcome their respective development barriers (Image 7.8). They formally met with two First Nations organisations: the En'Owkin Centre (<<http://www.enowkincentre.ca/home.html>>), and the Sookinchoot Youth Centre (<<http://sookinchoot.blogspot.com/>>). In both visits, the Ngalia family presented their work to staff and students and invited people to share their stories on related matters. This included screening a number of their community videos. Both the En'Owkin Centre and Sookinchoot Youth Centre had ICT programs running. They were generally themed around the recording of cultural stories created through fear they would become irreversibly lost. This fear was also based on the chronic breakdown of intergenerational

knowledge transfer pathways through youth becoming increasingly detached and disinterested in their First Nation Metis and Inuit culture.



Image 7.9: The Ngalia family participating in a cultural exchange with First Nations peoples in British Columbia Canada

The Ngalia family spent several hours talking with notable Aboriginal author and educator Jeannette Armstrong (http://en.wikipedia.org/wiki/Jeanette_Armstrong) on her philosophy of Aboriginal community development, and with her daughter, who runs the En’Owkin Centre’s ICT initiatives. This meeting was very empowering for the Ngalia family, who said that while their inclusion of ICT within their development projects was relatively new, seeing how a well-advanced and respected Indigenous centre devoted a significant proportion of their resources to supporting an ICT initiative, gave them confidence to continue this direction. In many of the conversations that the Ngalia family had with Canadian First Nations peoples, it became evident to them that Australian and Canadian Aboriginal peoples share similar colonial and post-colonial marginalisation and discrimination experiences. Thus, how each group attempts to overcome their development barriers was of significant mutual interest, and so sharing their ICT interaction experiences was especially valuable. Indeed, the researcher observed this engagement to be significantly more empowering than non-indigenous and/or expert’ agency recommendations.

Through this interaction and relationship building, the Ngalia group came to recognise they shared with these Canadian First Nations people an indigenous worldview. For the Ngalia People, a small kincentric community from a remote regional in Western Australia, the experience of belonging to a substantial international indigenous community was culturally affirming and empowering. This outcome further reinforced Ngalia perception of the outreaching and connectivity potential of ICTs.

Hence, while in British Columbia, with the technical assistance of their Canadian hosts, the Ngalia family completed a revised WCC web site (<www.walkatjurra.org>). This initiative had been planned prior to the trip. Key WCC participants had discussed the site upgrade in Leonora and agreed that the aim was to give the community the capacity to communicate with exogenous parties and manage their own development initiatives, just like a corporate or government web site. The page was created using iWeb software (<<http://en.wikipedia.org/wiki/iWeb>>) and the WCC iMac computer previously given by the researcher. iWeb is a simplified website design program that utilises template-based WYSIWYG website creation tools – the ‘easiest’ website creation program available to people with little or no previous web-design experience.



Image 7.10: The original WCC web site, created using iWeb software

The community objective for WCC site (Image 7.10) was to showcase their initiatives to both internal and external groups, including much of their digital media in the form of photos and videos. Subsequently, the group suggested that the site might be able to function as a point of sale (e-commerce) for some of the art pieces created through the WCC art project. WCC members felt the web page to be a useful reference point of community activities when attached to funding applications and acquitting research grants.

. . . yeah, it would be good I think. Show them the photos of our bush trips, all the little projects we do . . . they'll see what we do when we go bush, you know? Visiting our country, showing the kids, looking for them plants, animals, all that stuff. That's what we do (PF5, Interview 21 August 2007).

The web site will allow people to showcase their contributions to the cultural centre. Too much emphasis is made on written reports to communicate outcomes and outputs, especially by your (university) mob Guy, so digital video and photos are a great way of communicating people's contributions who do not originate from a solely text based culture (PM1, 5 June 2007).

7.4.2 UNFAO Rome Conference presentation

In September 2007, the researcher and PM1 were invited to present at the Web2forDev Conference (<<http://www.web2fordev.net/>>) in Rome, hosted by the United Nations, Food and Agriculture Organization (UNFAO) and organized by the Technical Centre for Agriculture and Rural Cooperation (CTA) (<<http://teca.fao.org/partner/technical-centre-agricultural-and-rural-cooperation-cta>>). This was the first conference that the international development agency held to target the application and adoption of Web 2.0 technologies in development contexts. Web2.0 commonly refers to ways of employing web-based services in order to promote information sharing and collaborative production of content (see Ashley et al. 2009). At the core of web2.0 theory is the ability for actors to interrelate to other stakeholders, produce and publish their own content, contribute to and redistribute already published content, integrate, aggregate, combine, generate, moderate, and mediate web-based content (Ashley et al. 2009). To address development asymmetry, this is achieved through the use of open source, free or low cost proprietary interactive user centred applications that may aid in promoting communication, online collaboration, information dissemination, participant empowerment, and social networking (Ashley et al. 2009). Hence, the Ngalia were invited to present on their Web2.0 ICT usage.



Source: K. Burke

Image 7.11: The UBC Professor, Ngalia representative and the researcher presenting at the UN: FAO Web2fordev conference at Rome Italy

Having recently experienced the empowering youth video project, at a planning meeting the community agreed that a presentation topic themed around the youth participatory video strategy would be appropriate, as it illustrated a key moment in ICT exposure, and subsequent, on flowing ICT interaction impacts. The meeting affirmed that the researcher and one of the visiting Canadian research fellows (who was also presenting with representatives of his First Nations research partners) would co-present, and if able key Ngalia representatives. The organizers were not charging attendance to developing nation representatives, especially those from Africa. However, travel costs from Australia and accommodation to the Rome conference were prohibitive. While the developing nation gesture is commendable, it does not address the all too common disadvantaged economic realities of Australian Aboriginals.

Despite the high costs, the researcher, the research fellow and two Ngalia peoples attended and presented at this prestigious international conference. Empowered by their Canadian First Nation experience and the marginalised and disadvantaged colonial nature of their shared indigenous cultures and history, the Ngalia

participants felt that their ICT-related experiences may act to empower representatives from developing nations.

The presentation outlined the initial embryonic ICT exposure during the production of the NRM video, noting how the youth responded to this with the resultant outcomes of youth participation and demonstration of learning to the elders and wider community. This, in turn, then led to the development of other youth ICT related projects utilising PV, which in-turn increased their contributions to the usually adult-centric Ngalia development initiatives. PM1 spoke of the empowering impact this had on the community group, how it unearthed unknown talent, allowing the youth to further interact with progressive social media, such as video housing sites, and social networking platforms to share and disseminate their messages and project outputs. With the newly unearthed community talent, the Ngalia were empowered further explore and manage more of their own development initiatives rather than rely on exogenous experts.

The presentation was selected for publication in a special conference addition of the journal *Participatory Learning and Action* (PLA) (<<http://www.planotes.org>>). Someone, other than the authors used the subsequent published peer-reviewed paper (Corbett, Singleton & Muir 2009) as a key case study reference in the theory of 'Web 2.0 for Development' on Wikipedia (<http://en.wikipedia.org/wiki/Web_2.0_for_development>). During the conference, the presenters were also approached by the editor of *ICT Update* produced by the Netherlands based CTA (Technical Centre for Agricultural and Rural Cooperation (CTA) ACP–EU) (see <<http://ictupdate.cta.int/>>), a bi-monthly bulletin on the use of ICT in agriculture and rural development to contribute an article. The article, 'Indigenous knowledge: Saving traditions' (Singleton 2008) resulted. To ensure all information and accounts of activities and outputs were accurate and appropriate for wider dissemination, the researcher provided the Ngalia community with drafts of all publications and conference presentations prior to formal submission for institutional review.

There are professional benefits for both the researcher and the research fellow through the publishing the work with the Ngalia community. The reception of the publications demonstrated diverse interest in and the relevance of Ngalia ICT interactions for international development initiatives. There were important inter-indigenous community networking benefits for the Ngalia community. International peer-reviewed and on-line practitioner publications meant that the Ngalia people would be automatically 'tagged' to the articles, which due to the ICT and web 2.0 themes, would result in their wide dissemination as part of the open-source 'creative commons' type trends for knowledge management and dissemination (see Carroll 2006).

The Ngalia people recognised through their visit to Canada and then the UNFAO presentation they had developed a credible international on-line presence and networking capability. They recognised that this international ICT interactivity could strengthen future funding applications and communicate the quality and impact of their development initiatives.

However, on their return to Leonora, the family found their house had been broken into. The WCC camera was stolen, along with the archive of digital videotapes from all subsequent community productions. Limited backup versions were stored on external hard drives with the researcher. This unfortunate situation highlighted the vulnerability of storing cultural knowledge to WCC participants. More particularly, the story of this international outreaching highlights the significant empowerment and learning experienced by the participants through this new Phase of ICT interaction and new technology opportunities. On the international stage, they found themselves represented at the cutting edge of ICT adoption for developing nation peoples, while back at home facing the marginalised and disadvantaged on-the-ground realities of an Aboriginal community residing remotely in a developed nation. Table 7.5 summarises the key ICT related development agency elements of project phase 3.

Table 7.5: The key ICT related development agency elements of project phase 3

INTERNATIONAL ICT OUTREACHING/NETWORKING – PROJECT PHASE 3				
Participants	ICT used	Participatory approach: ‘Community directed & emergent’	Themes: Advocacy & Traditional knowledge (TK)	Outcome
Ngalia community members	Digital Video, DVD, Internet, Social networking websites.	Decision making and distribution control. Networking power	Endogenous strengths and capacities, community value, internal talent nurturing.	Realisation of a shared international Indigenous disadvantage & development objective Affirming Ngalia efforts and developments as ‘on-target’. Indigenous self-pride.
En’Owkin Centre participants		Reciprocal learning, two-way dialogue.	Community problem: colonial legacy of Indigenous disadvantage.	Realisation of a shared international Indigenous disadvantage and ‘development objective’.
Sookinchoot Youth Centre participants		Reciprocal learning, two-way dialogue.	TK	Cross community strengthening; New ICT applications
The researcher		Observer, communicate Ngalia peoples adoption of ICT	Empowerment	Shared global development realities.
UBC Researchers		Aboriginal community based research (ACBR)	Participant autonomy	Evolved understanding of ACBR
Web2fordev delegates		Reciprocal learning, two-way dialogue.	Web 2.0 for Development	Global development synergies, innovative ICT applications.

7.5 ICT4D and the WCC – Project phase 4

As indicated in the literature review, growing international recognition of the impact of a suite of ICT infrastructure capabilities on development led to the usage of the acronym ICT4D in association with international community development agency. The two previous international experiences of the Ngalia people significantly elevated their interest in the potential to further develop these ICT-related infrastructure and capabilities for the community to explore their use in advocacy and development agency. The next section discusses a number of ICT4D experiences.

7.5.1 Networking the WCC as an ICT resource centre

In early 2008, the WCC received a donation of eight PCs from a local mining company. These were set up and networked with funding and assistance from the DKCRC and its Desert Biz project, undertaking research into enterprises located in desert regions of remote Australia, with the WCC acting as a preliminary case study. The series of networked computers were intended to provide WCC participants with access to the Internet for social (social networking, information access, music and video downloading), and work-related applications (information access, email, VOIP communication, banking). Also, it was suggested at a community planning meeting that the WCC wished to establish digital databases for a number of their project areas, e.g., a flora database, including archives of plants sampled during WCC field trips and related information including usages, locations, and cultural information. This network would ideally incorporate a map interface (similar to those used in PGIMS/GIS projects) (see Jankowski & Nyerges 2001) and a map-based database on cultural information similar to the database used by the government to register heritage sites.

At the planning meeting a number of the core design aspects of this database were identified: allow individual pieces of information to be interlinked and 'tagged' to other interrelated pieces of information using 'tags', i.e., a heritage site marked on a map to have links to related images, songlines (mp3s), flora lists, and art; ensure

access to information held within the database according to Ngalia community protocols, e. g., men would not be given access to women's knowledge, nor uninitiated peoples given access to senior lawmen's knowledge. The design objective was that the series of networked computers in the WCC would encourage participants to become engaged in the technology prior to the development of these databases, and to provide input into their design, as well as develop the required capacities to interact with the databases as they were developed. The front shop section of the WCC was partitioned into two sections; the front section remained focused on the Arts initiative with space for several artists to work, plus display areas for completed works. The computers were placed on desks to the rear and networked to the Internet via 'Ethernet' connections to one central 'router' with Telstra used as the WCC ISP. The computers were loaded with Windows 2003 (win2k3) operating system and several other programs, such as MS Word, MS Excel and MS PowerPoint.

As the WCC operated through the combined financial support of both private investment from Ngalia community members and the CDEP, access was determined by the participant's formal relationship to these funding sources. Not only Ngalia people, but also Aboriginal people from the settlement of Leonora who had signed up to the WCC's CDEP program, were able to utilise both the arts and ICT resources while the WCC was open, usually from 9am to 1pm Monday to Friday. For those not signed up to this program access was at the discretion of key Ngalia representatives. From observations, no one was turned away and interested parties were actively encouraged to sign up to the CDEP program to support their activities within the WCC. However, family relationship histories and kincentric networks played a central role in who expressed a desire to participate. Observations indicated that past conflicts or 'humbug', i.e., negative inter and intra family politics, as common in remote Aboriginal communities impacted on centre interactions.



Source: D. Muir

Image 7.12: The researcher guiding WCC participants on how to interact with the new network of personal computers

7.5.2 Youth FTI short film course

In July 2008, the WCC enrolled four youth in a digital video production short course, at the Film and Television Institute (FTI) of Western Australia. The two week course, aimed at high school age youth, showed participants how to write a script and produce a short film using digital video, non-linear editing and other production software etc. The Ngalia elders wanted to provide the opportunity for the youth to expand on their PV capacities without the reliance on the researcher, and spend some time away from the negative distractions of Leonora, i.e., boredom, negative peer influences and substance abuse. The Ngalia elders asked the researcher to attend course, as they were concerned for the youth's ability to feel confident participating in the collective activities. The Ngalia youth were the only Aboriginal participants from a group of 20, who were largely from relatively affluent and urban Perth families. To overcome this, the researcher acted in as a 'volunteer teacher' for the first three days, supervising the youth to a point at which they showed unsupervised confidence.

The Ngalia youth completed the course and on interrogation two expressed positive sentiments. However, two of the youth clearly did not enjoy the experience. One expressed frustration with a number of the non-indigenous participants for their 'dominance' behaviour. The other youth was notoriously shy, and despite the

course facilitators making efforts to overcome this shyness, their participation in the course was only limited. Interestingly the researcher had previously observed these two youth to actively and autonomously participating in a number of PV related activities with other Ngalia and Wongatha community members. Their limited interactions at the FTI course were not dissimilar to that behaviour previously noted by staff at the Leonora District School. This experience, reaction and outcome highlights the critical sensitivities and responses of Aboriginal youth to various learning environments, which gave further support to observations about their preference for a kincentric learning environment throughout the ICT-related projects.

7.5.3 WCC – exhibiting art and DVD sales

In October 2008, through its arts initiative the WCC had its second art exhibition for paintings at the Kalgoorlie Arts Centre. Over 45 paintings were exhibited, along with wooden carvings, traditional shields and spear throwers. The event provided a further opportunity to screen and sell the youths' *Papinmaru* DVD (Image 7.12). A batch of 50 DVDs was copied, with colour labels, and colour printed covers. Thirty DVD's were offered on the opening night for \$20 each. A small TV played the 10minute DVD on a loop during the exhibition. All thirty copies sold within the first hour and a half of the event, raising \$600 for the WCC's ICT-related projects. The opening attendants were predominantly non-indigenous and associate with the wider Goldfields arts community. Reasons for purchasing the DVDs ranged from educators wanting to use the DVD in school to educate non-indigenous children about local Wongai culture, parents wanting to show their own children, as an archive of local Aboriginal masculine hunting culture, and wanting to pass the video on to other Aboriginal and Indigenous persons.



Image 7.13: The WCC youth video is played on a loop at the Kalgoorlie Arts Centre during a related arts exhibition

This experience further empowered the attendant WCC youth. They received formal acclaim during the presentation speeches from their elders, as well as questions and congratulations from individuals. Next day reviewing the success of the event with WCC members, how well the DVD sold was noted, and that fact that while the DVD was only worth \$20, the volume of copies sold resulted in a similar gross return as many of the paintings and artefacts. As one elder noted, the DVD was over a year old at this stage, yet could continue to be sold through the WCC for some time to come, *'unlike a painting that once sold is gone forever'* (PF6, interview, October 2008). This fact prompted some discussion amongst WCC members on the economic potential of digital media productions within the centre and their potential for returns to assist with associated production costs. Many of the socio-cultural aspects of ICT interaction had been accounted, but this experience led key WCC participants to realise the potential of economic returns through youth-centric media productions. Despite some of the elders having little ICT knowledge, they indicated that the outcome supported their growing confidence in the community's ongoing investment in ICT-related initiatives and infrastructure.

7.5.4 WCC – Web2.0 social networking interactivity

In October 2008, several WCC members decided to replicate the Ngalia website (<<http://www.ngalia.websyete.com.au/>>) using the Facebook social networking site (<www.facebook.com>). A Facebook 'page' was established for the Ngalia Foundation Appeal, providing information on the Ngalia people, their auspice relationship with the National Trust of WA (NTWA) and with links to the NTWA for donations. This action was undertaken without any researcher input. A number of WCC participants had signed up to Facebook, and then 'linked' their personal profile site to Ngalia Foundation Appeal site. Soon other, non-WCC participants, i.e., predominately Aboriginal people from Leonora or the Northern Goldfields region, linked to this their personal profile.

PM1 began to regularly post Ngalia news and events within the site 'news feed' section covering a range of political and advocacy topics, e.g., responses to government policy announcements, local Leonora shire governance issues, local operations of mining companies, and Indigenous employment opportunities. As the nature of the posts diversified from local content, to broader National and International Indigenous themes, the range of people linking their personal profiles to the page diversified. This included a number of non-Indigenous peoples, related professionals, politicians, and wider community members. The sites 'supporters' were able to comment in text form on items posted on the site, and provide support by clicking a 'like' button. Accurately tracking the impact of this site is problematic, however it can be noted for its function of disseminating relevant WCC and Ngalia information to interested parties.

7.5.5 WCC and VOIP interactivity

In October 2008, a number of computers within the WCC (Image 7.13) were equipped for voice over Internet phone (VOIP) operation and loaded with the free-ware program 'Skype' (<www.skype.com>). The only associated costs for the call are the associated Internet bandwidth usage. Users may purchase Skype credits via

an online payment, allowing them to call land line and mobile devices and considerably cheaper rates than some standard call rates offered by telephone service providers, i.e., Skype to landlines calls in Australia at 3c Au per minute and Skype to mobile calls in Australia at 26c AU per minute (see <http://www.skype.com/intl/en/prices/payg-rates?currency=AUD#cc=AU>). The program also offers digital file sharing via their 'messaging' service, video and audio conference calling, and screen sharing.



Image 7.14: WCC participant operating Skype VOIP

With the installation of the networked computers, the researcher and a WCC participant already utilising Skype services, it was agreed to equip the centre with the service to provide participants with the opportunity for lower cost digital communication. As discussed in Section 7.1, mobile phone adoption by Aboriginal people in Leonora had increased significantly. With the high cost and limited range of service providers available due to the degrees of remoteness, VOIP at the WCC would offer participants more cost effective communication. Three USB headsets with microphones were purchased through the WCC for the system to become operational. A Skype account was set up and loaded onto all of the WCC computers.

Some of the WCC participants were informally trained in system operations at a community-planning meeting in October 2008. While only a small proportion of

participants felt comfortable and confident operating the computers, and subsequently showed interest in learning how to make Skype VOIP calls, a larger number of participants were provided with explanations on what the system could allow them to do, as well as demonstrations on how to make calls. However, for the two-month period after the set-up, key WCC participants noted minimal Skype usage. While the researcher and PM1 found the system increasingly effective as a means of communicating and sharing files, such as research reports and funding applications, a lack of broader participation was noted.

Yeah, it's (skype) pretty good. I used it when we were in Canada from Jon's basement to call the police in Leonora and keep (name withheld) out of jail. He killed a bullock that wandered onto his property, for mayi [food] . . . it's cheaper than using my mobile, but more people would need to be fluent in computer usage, and actually have access to computers for it to be really effective, and replace telephones and mobiles. But I can't see that happening soon, at least not at a broader, whole of community level anyhow (PM1 1 November 2007).

The limited time the researcher was able to spend with participants in Leonora, offering training and guidance in Skype operation would have contributed to this outcome. The researcher's budget began to run out at this point and regular travel to Leonora became problematic.

7.5.6 Closure of the WCC HQ

In December 2008, the WCC headquarters were closed. The organisation and its initiatives continued to operate as a 'virtual organisation' with no change to many of the centres activities, including the CDEP, Ranger activities, and participatory video. This decision came after 6 months of internal organisational restructuring involving attempts to reduce the financial input of key Ngalia People, and increase the WCC's participants' ability to self-manage their projects. Unfortunately, the high personal financial costs provided by key Ngalia People became unsustainable, and attempts to source alternative funding models had become problematic. Many Aboriginal organisations and community centres within the Northern Goldfields region had been financially dependent on cash donations from large mining organisations. The shockwaves sent through the mining industry by the global

financial crisis (GFC) resulted in mining companies drastically reducing their philanthropic and community development budgets. In a meeting with several executives from one of the larger mining operators in the region, the researcher was told their 'social' funds being were cut back to 20 per cent of their pre-crisis values. Unfortunately, while the WCC had hoped that the several years of internal funding, and realised community-based outcomes would in time attract external funders, the GFC halted this plan.

A second reason identified for the WCC HQ closure was that key-participants had failed to take on regular and reliable responsibility for the daily management of the centre. This meant the operations of the WCC relied too heavily on one family group. This particular Ngalia family had also become increasingly disillusioned with the quality of the secondary school in Leonora and moved to Perth for a period of time for a better quality of education. The family intended to travel to Leonora regularly with the father continuing his regional work, and the continuation and expansion of virtual WCC initiatives. When interviewed on the closer of the centre, a number of WCC participants indicated that it was not what they wanted but understood the particular Ngalia family reasons. One elderly lady stated she understood the family wished their children to not turn out like many of the Aboriginal children who reside in Nambi Road Village. Numeracy and literacy rates are generally poor among many of these children, and substance abuse commonplace. Of the 10 people interviewed, no individual recognized that the closure of the WCC linked to a lack of the wider community taking the management responsibilities. Table 7.6 summarises the key international ICT outreaching and networking development agency elements for project phase 4.

Table 7.6: The key international ICT outreaching and networking development agency elements of project phase 4

INTERNATIONAL ICT OUTREACHING/NETWORKING – PROJECT PHASE 4				
Participants	ICT used	Participatory approach: ‘Community directed & emergent’	Themes: Advocacy & Traditional knowledge (TK)	Outcome
Ngalia community members	DVD, Broadband Internet, networked PC computers, social networking websites: Facebook, VOIP (Skype)	Infrastructure injection adapted to fit local needs. Local ownership over assets Decision making control	Economic development Endogenous human capital mobilisation Advocacy: Communicating community wants & desires to exogenous groups Innovation	Internally strengthening: Increased self-reliance. Internal & external community strengthening: realising shared vision & support from external parties. Internally strengthening: increased awareness of opportunities for technology adoption. Feeling of leading the way, first to adopt.
Ngalia Youth	Semi-professional digital video equipment.	Decision making control Cultural valorisation	Endogenous capacity building	Internally strengthening: skills and experiences values outside community environment. Empowering (for some)
University IT Staff	Computer network & broadband Internet	Submissive, transmissive	Capacity building	Increased community capacity
The researcher		Observer, facilitator, promote participation	Empowerment	Increased participation in activities; Increased understanding of opportunities.
FTI Staff		Facilitator, promote participation	Capacity building.	Increased video production skill set of Ngalia youth

7.6 ICT and the ‘virtual’ WCC – Project phase 5

The closure of the WCC as a physical space, the movement to Perth of a key leading Ngalia family, and the growing popularity and user-friendliness of social media had significant implications for the shift of the WCC to a virtual community development space in early 2009. This initiative coincided with the end of the researcher’s funding and ability to physically engage with WCC, and Ngalia community members in Leonora. However, with key Ngalia leadership located in Perth, a number of new community development initiatives emerged.

7.6.1 Ngalia indigenous heritage project (IHP) – developing the cultural sites management system (CSMS)

In May 2009, independent to this research project, the Ngalia family initiated a successful heritage grant on behalf of the community to be managed through the National Trust of WA. The objectives of the project centred around the documentation of ‘new’ heritage sites and the development of a digital and Internet-based cultural sites management system (CSMS) for Ngalia heritage. The researcher recognized the significance of this initiative for two key reasons:

1. The Ngalia family were utilising progressive digital management systems to store, manage and evolve their cultural knowledge, and
2. The researcher had no knowledge of, nor input into the design and objectives of the project, making it an ICT example of EnCDD.

Despite being in regular contact with WCC, Ngalia and Leonora community members on other community development matters, recognizing the vital endogenous-driven quality of this agency, the researcher maintained distance from this project, only inquiring about it when the project was completed and ready for formal acquittal. This enabled the researcher to engage with the project as an autonomous Ngalia EnCDD project.

The Ngalia people had received federal government funding to the value of \$100k AU for an Indigenous Heritage Project (IHP) (see

<http://www.environment.gov.au/heritage/programs/ihp/index.html>>). The budget allocated for a number of field visits to identify previously unaccounted Ngalia heritage sites, and the development of a digital cultural management system for the Ngalia community. The project was to be managed through an auspice relationship with the National Trust of WA (NTWA) providing financial management, reporting and project acquittal, with minimal oncost charged. All other project decision-making power resided with the Ngalia people. This type of auspice relationship between the Ngalia and NTWA aimed to provide the funders with confidence in the appropriate management of the funds and thus increased the likelihood of project support. The specific IHP objectives were to:

- Consolidate existing site survey reports, Aboriginal sites register and other literature holding information about Aboriginal sites of Ngalia country
- Train the Ngalia Rangers to record and manage natural and cultural resources in the northern Goldfields
- Develop a Ngalia community-owned register or database of cultural heritage, including songs, family history, environmental knowledge, dreaming tracks, Aboriginal sites, historic events, archaeological sites, other land uses, photographs and artworks, and
- Disseminate the findings of the research project by making the Ngalia Heritage Register and guidelines for Aboriginal cultural heritage recording and management available online.

According to community participants, the funding was released in early 2009 with the project timetable of 12 months. During this time participants, consisting of a range of Ngalia peoples, mostly adults, linked into the WCC and it's 'Ranger' CDEP program, were involved in a number of field surveys where they were trained in the recording and management of natural and cultural resources. These activities were lead by PM1, with field trips identifying a number of 'new' heritage sites. The participant group engaged 'Cultural Systems Solutions' (CSS) (see <http://www.culturalss.com.au/>>) to work with the Ngalia people to develop a suitable digital platform to store and manage a diverse range of their cultural knowledge. CSS is an Australian Indigenous business based in Townsville

Queensland that develops heritage information systems. A CCS spokesperson, described the Ngalia CSMS as a:

[Digital] 'system providing a mechanism for individuals to archive important documents, video and photographs describing sites, areas, tracks, language, artefacts, stories and other heritage objects and values. Information is secured using a flexible security model that can easily be modified to reflect a diverse set of cultural and organisational protocols. These systems have been developed to provide an information archive and also to operate as management tools. By capturing the relevant information, data summaries can be generated to monitor spending on activities, to set work plans and to generate task lists for workers (PM9, via email, 18 May 2009).

The desire to develop the Ngalia CSMS was based on a broad community concern for the chronic breakdown of intergenerational knowledge transfer pathways, specifically the youth-elder pathway. Many adults and elders interviewed felt their stories were disappearing as the youth '*would not listen*' (PF7, personal communication, Kalgoorlie Arts Centre 2007), and the predominant oral mediation meant that with the passing of each generation of elders, Ngalia knowledge was irreversibly lost.

The Ngalia community expressed considerable that knowledge was recorded in an appropriate format that could allow youth to re-visit parcels of knowledge if and when they became re-engaged with their Ngalia histories. By appropriate, they asserted that their cultural knowledge must remain as Ngalia knowledge, including the cultural specificities of their community governance and management practices. In an interview, PM1 (14 August 2009) stated that he was concerned that '*fluid and contextualized cultural knowledge regress to meaningless static information or data*'. Hence, the Ngalia CSMS had to maintain the linkages between interrelated parcels of information, ensuring singular, but related information blocks maintained their status, context and value, interrelating together as cultural knowledge. The Ngalia CSMS had to retain a traditional knowledge access pathway. Access to knowledge stored within the database was structured around the participant's social and biological placement within the Ngalia community, e.g., youth would not

be permitted to access knowledge for initiated men; or men could not access women's knowledge. The Ngalia participants indicated this to be a vital 'living' characteristic for data storage to avoid the fossilization of knowledge, rendering it ineffective as a knowledge-based framework to maintain Ngalia cultural vitality.

Incorporating these Ngalia concerns, CSS designed the Ngalia CSMS with the aim to create the following requisite community benefits:

- To provide a single point of call for accessing information relating to traditional knowledge, cultural sites, objects and other cultural entities and values
- To significantly reduce the risk of losing cultural heritage information
- To demonstrate leading edge cultural heritage information management practices to other related organizations and stakeholders
- To provide opportunities for Ngalia to retain and maintain information relating to heritage assets including objects, sites, and knowledge
- To provide consistent methodology for surveying existing sites and tenement areas and for reporting collected information back to organisations, such as the Department of Indigenous Affairs
- To provide a tool for information management to monitor and protect important sites and areas of cultural and natural significance (Troy Mallie, 18 May 2009).

The Ngalia CSMS consisted of variety of data entry forms used to describe corresponding digital media, including digital forms such as photographs, reports, survey forms, audio files, and video files. The users can upload such media files into the CSMS, and author and allocate text. A series of GIS maps were loaded onto the system for the land area considered to be 'traditional Ngalia lands', to assist with visual representation of heritage site and tenement locations. CCS hosts the CSMS online with remote access given to registered Ngalia users. This means the storage of material uploaded to the CSMS is managed and stored remotely by CSS. Ngalia users could access and interact with their CSMS anywhere they could access an Internet connection, using almost any device capable of web browsing (some 'smart

phones' are incompatible with the system). The Ngalia CSMS includes the following technical specifics:

- Server: Windows 2003
- Web Server: IIS
- Programming/Scripting Language: .NET
- Database: MSSQL

The technical make-up of the CSMS requires substantial specialist IT capacity to create and structurally alter its form or functionality, which means that ongoing technical assistance will be required to manage the platform, and/or develop equivalent internal community-based capacities for this role. Aside from the design workshop with community members, CSS provided a two-day workshop to train participants in effective system usage, while giving ongoing remote technical support services.

At the completion of the IHP, CSS engaged with the Ngalia participants to evaluate the CSMS and workshop future directions for the system. However, observations indicate that to facilitate broader Ngalia community interaction with the CSMS, substantial training of participants in basic computer interaction skills is required. Currently, the majority of Ngalia WCC participants identify as possessing inadequate IT capacities to operate the system to full potential. Ideally, local and appropriately skilled representatives could support this training. To populate the system with new data and update existing data, users also need to develop field-based data collection technologies and procedures. Related training for interaction with data collection devices (GPS, digital cameras, video cameras, and written forms) will be additionally needed. The CSMS will require indefinite web hosting services. The system will benefit from the monitoring and subsequent integration of technological developments that simplify and improve the functionality of the mapping, data recording and entry, and data visualization aspects of the Ngalia CSMS. To further develop the CSMS and collect heritage related data to upload into the system, a second round of heritage funding is required from the federal government. Table 7.6 summarises the key ICT related development agency elements of the 'virtual' WCC project phase 5.

Table 7.7: The key ICT related development agency elements of the ‘virtual’ WCC project phase 5

INTERNATIONAL ICT OUTREACHING/NETWORKING – PROJECT PHASE 5				
Participants	ICT used	Participatory approach: ‘Community directed & emergent’	Themes: Advocacy & Traditional knowledge (TK)	Outcome
Ngalia community members	CSMS (digital database). Digital camera, GPS and GIS systems	Local ownership and decision making control Adapted to cultural requirements	Community problem: TK transfer breakdown	Empowering: endogenously innovating new TK management pathways Internally strengthening: early adopters of ICT for development
Researcher		Observer, facilitator	Capacity building	Endogenous CDD using ICT
CCS Staff		Community directed two way learning	TK	TK management using ICT
NTWA Staff		Local ownership and decision making control	Heritage preservation	Heritage ‘preserved’

7.7: Rising community risk issue of anti-social youth behaviour – project phase 6

Around the time that the researcher reduced time at Leonora, a number of male Ngalia youth and other Aboriginal community members, who had actively participated in many of the previous ICT related research projects, increasingly engaged in substance abuse. The occurrence of this abuse coincided with the closure of the WCC building. The abuse involved the inhalation of paint, sourced through spray paint cans. In consultation with the youths and community adults, the informants indicated that the paint was often taken from the back of mining survey vehicles commonly parked in Leonora as employees visited hotels, motels and public bars. The town school, where spray cans were used to mark grass ovals for sporting events, became an additional source of paint. Regrettably, this

experimentation led to other substance abuse and an on flow of associated antisocial behaviour and crime. The youths, who ranged in age from 11 – 14 years at this time, mostly resided in the Nambi Road Village. Their school attendance during this period became reduced to nil.

The researcher noted a drastic change in their interpersonal engagement with him and participation in community development projects. This substance abuse related change was noteworthy in contrast to their previous demonstrations of unbounded enthusiasm for participation in almost any research, development and WCC activity when the researcher came into town. The youth were subsequently arrested on many occasions, and a court date was set to formally address their anti-social behaviours. Coupled to this, a group of the elders informed the youth that unless they changed their behaviour, they would not be permitted to participate in any of the field related activities, i.e., the WCC ranger program. As it was apparent that they had already detached from a desire to interact with the WCC and its participants, this information has little effect. Several of the adults expressed high levels of concern and grief for this negative community youth behaviour. Indeed, this high concern underpinned a great sense of urgency for the critical implications of future development initiatives for the Ngalia community. Thus, the next two project examples illustrate how ICT-related experiences provided a means to for the community to capture, celebrate and share Ngalia culture and then effectively mediate this externally to the non-indigenous community.

7.7.1 Lesser Stick Nest Rat (LSNR) Project 1 –The Naluti DVD Project

Several months prior to the acquittal of the IHP grant, the researcher was informed that funds remained for one last field trip to collect heritage data for the Ngalia CSMS. The researcher was invited along as a participant in the field trip involving a two night camp in late May 2009 on Wanjarri Nature Reserve, roughly 230kms to the north of the Leonora town site. The community objectives for the trip were to:

- Identify and collect heritage data for uploading into the CSMS

- Accommodate a visiting livelihoods researcher from the Commonwealth Science and Industry Research Organisation (CSIRO) to assist with aspects of their community development planning and implementation strategy
- Form a council of elders and discuss the current youth sniffing crisis in town.

PM1 suggested to the researcher that they used the time to film a short video to summarize the IHP to report back to the NTWA and other relevant parties. He was aware that the researcher was a co-owner of a new video camera ([Sony PMWEX3](#)), which recorded in high quality [HD format](#) (see <http://en.wikipedia.org/wiki/High-definition_video>) and suggested that the researcher draft some content ideas for a short video to discuss these ideas with the Ngalia IHP participants prior to the field trip for consideration.

It was noteworthy at this point that despite many Ngalia participants having been involved in past PV projects, receiving substantial training in PV productions, and having permanent access to the required production equipment, no Ngalia video productions had presently been made without the researcher's participation. Unfortunately, this outcome may be attributed to a researcher related impact, which caused community members to view the researcher as a permanent PV facilitator.

The researcher phoned several Ngalia participants (PF2, PM3, PM4, PF5, PM5 and PF1) to scope ideas for the video content. The respondents noted the trip was to be based on a nature reserve, so subsistence hunting was not permitted. The participants suggested that the video should document the biodiversity of animals on the reserve, and show the WCC Ranger group undertaking the survey and engaging in traditional NRM practices. The researcher reviewed literature on the region's biodiversity, and noted Wanjarri Reserve (A class) was noted as potential habitat for several rare and endangered animals, including *Polytelis alexandrae* (see <http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=758>), and *Leporillus apicalis* (see <http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=136>). This potential was identified

through the review of Dominion Mining Limited report on their proposal to expand the Yakabindie Nickle Project (see EPA 1990). The report stated that:

*Within the project area three species are gazetted as rare or otherwise in need of special protection. They are the Lesser Stick Nest Rat (*Leporillus apicallis*), the Perergrine Falcon (*Falco peregrines*) and the Alexandra Parrot (*Polytellis alexandrae*). The project is not expected to have adverse impacts on these mobile species . . . The adjacent Wanjarri Nature Reserve is of significance, being the only conservation area within the Northern Goldfields Region. This region is ecologically diverse, encompassing biotic assemblages, which do not occur elsewhere and is an overlap zone between arid northern and mesic southern elements of both flora and fauna (EPA 1990, p. 5).*

Further web-based investigations led the researcher and Ngalia community participants to several documents noting that *Leporillus apicallis*, while presumed extinct, may in fact still exist in limited and remnant populations in remote segments of the Northern Goldfield Region (see <http://www.iucnredlist.org/apps/redlist/details/11633/0>). The animal was declassified as 'extinct' and changed to 'critically endangered' within the IUCN Red List in 2008 (Robinson & Burbidge 2008). The IUCN Red List also stated that:

This species is probably extinct, but if it does persist its numbers would almost certainly be very small. There are no confirmed reports of this species since 1933, however, there is a reliable record from 1970 and continued, occasional reports of fresh vegetation being added to old stick-nests.

At a community-planning meeting, this information was presented to participants with the proposal they target the identification of this animal, or evidence of it, within the project area. The participants indicated that this was a good proposal for the following reasons:

- A mining company was keen to extend site operations onto Wanjarri Reserve. A portion of the reserve would be removed from the A – Class reserve classification to allow for the expansion, and a section of a neighbouring pastoral station would be joined to the reserve as compensation

- The Ngalia community was against this development, and identification of *Leporillus apicallis* on the reserve was a possible means of halting the mine expansion through community action, and
- One Ngalia youth was identified to the researcher as having ‘*Naluti Tjukurpa*’ or ‘Stick Nest Rat Dreaming’.

Thus, at the community-planning meeting all participants enthusiastically deemed the identification and preservation of *Leporillus apicallis* on traditional lands a high priority.

Subsequent informal interviews with key participants disclosed that several Ngalia people had travelled through the area (*Wanjarri* and surrounding regions) in the early 1990’s and had located middens (nests) of *Leporillus apicallis* with new material having been attached (personal communication with PM6 and PF9). This observation was consistent with those reported by Robinson and Burbidge (2008), which resulted in the declassification of *Leporillus apicallis* from ‘extinct’ to ‘critically endangered’. Hence, it seemed plausible to the participants that with guidance from these 1990 accounts, the group may locate some of the old middens, and potentially, evidence of recent activity by *Leporillus apicallis*, which had not been seen alive since 1933 (Robinson & Burbidge 2008). During further discussions several informants stated they remembered seeing the ‘*Naluti*’ many years ago, but exact dates could not be given.

The planned video content was identified as a community-led process to identify evidence of *Leporillus apicallis* within the *Wanjarri* Reserve. The participants would evaluate the captured footage in post-production and develop the subsequent narrative structure through participant dialogue. The participants agreed video was the appropriate medium in which they could document the investigative process and communicate their findings to exogenous parties. If any outcomes warranted it, a written report would accompany the video. However, the community noted video as the preferred communication mode as it could capture everyone’s contributions to the reporting of activities, and the end product would be easier to disseminate among families and friends over print media. Video could also reach a

wider segment of the community for internal dissemination, i.e., youth and adults with limited literacy. The technical capacity required to operate the Sony EX 3 camera meant participants would require specific training prior to filming. Participants were keen to utilize the EX3, as it would produce a quality end product. As the researcher had limited experience in its operation, he relied on his more experienced co-owner to film projects. Thus, to gain the high quality advantages of the EX3, the participants recognized that there was merit to engage a skilled exogenous operator for this project on a one-off basis.



Source: R. Mackay

Image 7.15: Participants involved in the *Naluti* recording project

During the three days looking for *Leporillus apicallis* the group (Image 7.15) successfully managed to locate a number of middens. One particular example was more structurally sound and well preserved. Visible 'amber rat' was attached to the chewed stick material, indicating it had not been degraded by rain, as was the case with the other more exposed middens. A number of mouse-like scats were located within the immediate vicinity of this midden. The participants all viewed the site, and a number of photos and video footage was taken. An interview was filmed led by participants covering the objectives of the field trip. Participants returned to Leonora happy with what they had identified. The exogenous camera operator was confident they had captured enough footage to create a short, but informative

narrative. During a post-trip community planning meeting, when discussing who would edit the video, PM1 suggested that the film expert edit and produce the video, with the community remaining directors and responsible to review the content. The exogenous expert agreed to undertake the job for a nominal payment made by Ngalia participants.

The video was presented to the participants in the form of several drafts, with the researcher acting as a mediator between community members and the exogenous expert. The end product was a High Definition digital video 6 minutes 48 seconds in length. The video titled *Naluti – the search for the stick nest rat* includes: an introduction of background information of the IHP; footage of the group locating the middens; an interview with several community members on the project aims; significance of *Leporillus apicallis* to the Ngalia people and its cultural connectedness to surrounding Ngalia Tjukurpa stories. The video ends with contact details for the WCC and the Ngalia Foundation, through links with the National Trust of WA. At the researcher's suggestion, multi-Grammy award winning musician, Lucky Oceans, created a soundtrack to add to the short film's quality production values (see <http://en.wikipedia.org/wiki/Lucky_Oceans>).

The video does not refer in anyway to any mining company seeking to increase operations on the reserve, nor hint of the Ngalia people's desire to prevent any mining activity in the area. This story strategy was a purposeful participant decision made during the review process. The aim was to reduce the politicization of the content to avoid viewers discrediting the participant's message and desired positive impact on the viewer. Participants did not want the video stigmatized as: '*another blackfella video protesting against mining*' (PF3 comment, 25 July 2009). They felt that there was more advantage to leverage viewer empathy with the NRM ideology of the Ngalia peoples, and through an empathetic approach the video could have the greater impact on the mining expansion proposals into the reserve, than a more targeted and politically antagonistic narrative. The final video was screened to the participants at a community-planning meeting in Leonora, held at the local Fire Station facility, as the WCC was no longer available. The participants approved the

video and its content. It was subsequently distributed to participants via USB, hard drives, and DVD disks. With community approval, the researcher created a 'Walkatjorra Aboriginal Ranger Group' account on the Vimeo video sharing site (<<http://vimeo.com/user3177197>>) and uploaded a high definition (HD) version of 'Naluti' (<<http://vimeo.com/12601959>>).

Subsequently, the participants used the video and Vimeo web link as supporting documentation of outcomes of their IHP. The video was screened at numerous meetings, workshops and conferences attended by Ngalia participants in coming months. It was also used as supporting material for Ngalia funding applications produced to demonstrate the type of community-initiated work they actively engage in. Over a period, the Ngalia community have achieved many significant community development milestones including, for example, the successful registration of a Native Title Claim, several arts exhibitions, implementation of a ranger land management project, and substantial involvement in a university NRE project utilizing Ngalia traditional knowledge. However, the positive internal and external interactive experiences gained through the making and showing the *Naluti* video reinforced the potential power and effectiveness of digital media as an effective vehicle to illustrate their autonomous community lead and participatory initiatives. The *Naluti* video was often selected as *the* primary example of their EnCDD capacity.

7.7.2 Photovoice production/book

During a community-planning meeting at the Leonora Fire Station in early August 2009, participants worked with a livelihoods researcher from the Commonwealth Science and Industry Research Organization (CSIRO) to plan aspects of their development strategy, in particular, their ability to communicate to exogenous parties, and to increase the level of cross-participation from non-Aboriginal residents in Leonora within WCC activities. During this meeting, the researcher delivered a collection of printed photos that were shot by various participants during the *Naluti* filming trip. The researcher has a Nikon D70 DSLR camera, and

having shown people how to use gives free access to participants during field trips. The resulting images were regularly printed and distributed back to participants.

As part of their workshop, the livelihoods researcher suggested participants use some of the images taken to create a 'book' to showcase participant activities when they 'head out bush'. 'Photovoice', which uses images with text to illustrate a message and narrative, are a recognised appropriate tool in participatory community development practices. It is considered especially appropriate when there is a need to record and reflect their community strengths and concerns, promote critical dialogue, and reach policy/decision-makers (see Wang 1997). The images were individually projected for participant viewing, with each one either selected or rejected based on the quality of the image and the 'story' communicated. Participants then added a single line of text to each image, to represent a context-based image message. Each image was sequentially ordered and collated to form a lineal narrative of a WCC Ranger Field Trip. The 'Photovoice' produced book was used to accompany a survey that WCC participants conducted on the residents of Leonora. The survey aimed to gain insights into the willingness of non-WCC participants to join them in field-based activities and trips, with the notion to eventually establish an enterprise based around experiential cultural tours. The book was used to give survey participants a quick overview of what they might experience on a WCC field trip with the Rangers. The survey participants were asked if they would be willing to pay for this experience. The responses were used to provide feedback on the feasibility of a local cultural enterprise that could create an economic means to increase the exposure of Ngalia culture and development initiatives to Leonora's non-Aboriginal residents.

A group of six Ngalia participants carried out the survey in front of the Leonora supermarket. The group set up several tables with 10 copies of the book, and a number of photocopied survey forms. The group were surprised to find survey participants keen to purchase the book (simply A4 paper printed and spiral bound). The group began selling the books on demand, for \$10 a copy. At the completion of the survey, only one of the 10 copies remained, as it was retained for the purpose

of informing survey participants. A number of people asked where they could access copies, with several requests to whether they would be producing any future publications. Survey participants, who were all non-Aboriginal, stated the book provided them with visual insights into members of Leonora's Aboriginal population existence; something they knew little about.

Table 7.8 summarises the key ICT related development agency elements in project phase 6, which involved both the LSNR *Naluti* DVD and the production of the photovoice book. Despite ongoing community concern for the rising antisocial and community risk issue of youth crime these two projects marked a strengthening relationship between the community's ICT interaction and rising community recognition of how this interaction worked to strengthen community relationships and achieve an integral and multifaceted development agency outcomes.

Table 7.8: Summary of key ICT relate development agency – project phase 6

Increasingly sophisticated ICT interaction – project phase 6 Naluti DVD and photovoice book				
Participants	ICT used	PARTICIPATORY APPROACH: 'Community directed & emergent'	Themes: Advocacy & Traditional knowledge (TK)	Outcome
Ngalia community members	Digital video, photographs , PowerPoint presentation software, GPS	Community directed, decision making control, inclusive	TK, land and resource management Community problem: Mining industry impact on land access & environmental status.	Outreaching political advocacy: issue & voice raising. Internally strengthening. Cross-community communication. TK: intergenerational transfer. TK: management
Ngalia youth	Digital video, photography	Decision making control	TK – <i>Leporillius apicallus</i>	TK application & transfer
Researcher		Observer, facilitator	TK – <i>Leporillius apicallus</i>	Community collaboration
Exogenous videographer	Digital video	Inclusive	TK – <i>Leporillius apicallus</i>	TK application
CSIRO Researcher		Facilitator	Agency: Walkatjurra Ranger Program, endogenous initiatives	Internal community strengthening, participant empowerment

7.8 Strengthening ICT4D and the WCC – Project Phase seven

Leveraging off the overall positive community strengthening and outreach of the project experiences in phase 6, in 2010, a second stage of IHP funding was granted to the Ngalia people. Based on the achievement of the targeted outputs for IHP1, they received a further budget of \$100k of federal funding for a second phase of heritage-based work.

7.8.1 Expanding the web-based cultural storage management system (CSMS)

Within the IHP2, funding was allocated to continue work on the Ngalia CSMS. This work included a community review of the database, with ongoing work based on a participant review. Funding was also allocated for a number of data-collection field trips, where Ngalia participants would travel on country to collate heritage related data for uploading in their CSMS. AS in IHP1, this consisted of a number of formal and informal visits to country with participants using various technologies to record information. For IHP2, participants began to incorporate more GIS based recordings of heritage sites, along with digital photos, and short (<5min) video segments, recorded on mobile phones, such as iPhones. PM1 collected data from field trips with PM1 and PF 3 sorting and uploading the data into the CSMS.

7.8.2 Addressing youth crime and rehabilitation

In April 2010, a number of the participant youths faced a Court hearing to address criminal charges as related to the previously mentioned a paint-sniffing outbreak resulted in an increase of antisocial youth behaviour. The researcher was present at a series of community meetings called to address their fears in losing the youth to a cycle of detention and crime and the imperative to find a positive solution. This crisis situation was especially alarming in light of their previous youth-oriented ICT participation success. The participants spent a number of weeks proactively negotiating with relevant local authorities and organisations for the youth to be sent to an Aboriginal Rehabilitation facility in the Northern territory as an alternative to detention. After strong resistance and a lack of support from local authorities, i.e., the local Police, Corrective Services, Youth Justice, and the Leonora Shire, the case Judge agreed to this arrangement based on the efforts and collective decision-making demonstrated by the youths' parents and caregivers. While this successful outcome is not ICT-interaction related, it demonstrated to the researcher a marked development of the 'voice raising' and autonomous solution finding and driving capacity in community members in relation to matter of deep concern to

the community. Arguably, this concern for the youth and voice raising capacity development does indirectly relate the positive outreaching and community strengthening outcomes of their ICT-interaction experiences.

Observations confirmed that this Ngalia community driven agency outcome was significantly empowering for the WCC participants. Successfully challenging the authority of powerful exogenous decision makers and, at their instigation, the implementation of an alternative youth rehabilitation pathway, was a noteworthy outcome. This endogenous driven and determined agency reflected growing community recognition of and concern for the high individual and community cost of antisocial and criminal youth behaviour, and collective recognition of the imperative for alternative initiatives that positively focus on youth engagement. The motivational and outcome successes of their past youth-based and ICT-interaction development initiatives contributed to the community's capacity to 'find its voice' in external communication matters. The youth crisis contributed to community awareness that the noteworthy, but short-term youth-based successes were easily undermined by the countervailing temptations of youth risk taking and antisocial activities. This realization affirmed the pivotal need for a longer-term youth engagement strategy. The contrasting ICT related development agency lessons gave further impetus to new and ambitious project initiatives and a more strategic approach to community development.

7.8.3 Lesser Stick Nest Rat (LSNR) Project 2

With the positive impacts that the community identified in the IHP1's 'NRM - *Leporillus apicallis* Identification Project', the WCC participants opted to carry out a second field trip to Wanjarrie Reserve as part of the IHP2 project. The objectives of the trip were to search, locate and identify more evidence of *Leporillus apicallis*, collect biological samples for laboratory testing, and train WCC Ranger participants in formal fauna sampling and ecosystem assessment practices. A video, similar in format to the 'Naluti' video, was to be produced to further support endogenous internal and exogenous external dissemination of WCC activities.

WCC participants were keen to purchase a video camera of similar quality to the Sony EX3 camera used to film 'Naluti', as they were impressed with the quality of the footage and the researcher no longer had access to the camera. During discussions with the researcher, PM1 stated the higher quality video format of *'Naluti' was much better than the previously created videos; It helped their video to stand out among all the other blackfella videos* (PF3 comment), and showed exogenous parties that the WCC Ranger group are *'serious about what they do'* and possess talent for land management and video projects. This view was articulated by one participant as *'getting the real picture of what we do ... it makes it look more like you're there, you know, more like real life, so they can understand, you know'* (PM5, comment).

The high cost of the Sony EX3 kit (AUD\$15,000) was inhibitive and so the WCC participants sought advice from the researcher on a lower cost alternative that would deliver similar quality. At the time (2010), a technical revolution was occurring with the advent of digital single lens reflex (DSLR) cameras capable of recording full-HD format video. This meant that lower cost cameras could now record HD digital video, using the almost full-frame sensor of the DSLR camera, and the high depth of field lenses for around AUD\$4000. The reduced size of a DSLR camera in comparison to a shoulder mount video camera was an additional bonus along with the capacity to record high quality still images from the same device. The researcher suggested a Canon-brand and offered to train them in its operation during the field trip. The WCC approached a local mining company for some financial support to purchase the camera, but they declined, though later offered to provide financial and in-kind support for a number of other project related costs, freeing up some existing funding for the WCC to purchase the Canon 7D body, Canon EF 17-40mm f/4.0 L USM lens, two batteries, and a 16gig CF memory card.

With the increasing amount of ICT activity within the WCC, the researcher suggested participants look into the idea of using some motion sensing cameras on the field trip to remotely capture footage of animals during any fauna surveys or habitat assessments. He was aware that local environmental consulting firms used

such technology in professional habitat assessments, and that they would be useful in either identifying *Leporillus apicallis* or other nocturnal/shy species. Any resulting video footage would be compatible with the Ngalia CSMS, WCC web sites, and any future video productions. The participants agreed this to be a good idea and two Bushnell Trophy Cameras were purchased by the WCC for the trip, at a cost of A\$250 each (see <<http://www.bushnell.com/products/trail-cameras/trophy-cam/119446C/>>).

In July 2010, the researcher accompanied a group of 21 WCC participants involving an even mix of gender and age from <4->40 years, a zoologist, and a professional with additional ornithology expertise from 'Leave no Trace - Australia' (<<http://www.lnt.org.au/>>) for three days camping nearby Wanjarri Reserve.

Participant (WCC Ranger) activities carried out during the trip were:

- Operational training of the WCC Canon 7D camera
- Set-up of motion sensor cameras, record, download animal footage
- Training of participants in basic industry flora/fauna habitat assessment methodology (Image 7.15)
- Bird survey of project area (visual assessment)
- Broader fauna survey of project area (using visual assessment, Elliot traps and DNA hair traps)
- Two habitat assessments (written)
- Identification of several new *Leporillus apicallis* middens
- Formal training of participants in biological sampling techniques
- Collect scat samples from immediate proximity of *Leporillus apicallis* middens
- Participate in 'Leave no Trace workshop' on human/environment impacts
- Document field activities with Canon 7D camera and stills camera, and
- Record all heritage sites identified on GPS, photograph and video where appropriate.

Though the researcher predominantly filmed the field trip using the Canon 7D, a number of participants also had informal experiences in learning how to use it. A Rode Shotgun video microphone was used to record audio, footage was captured each evening onto a laptop, powered with a power inverter connected to one of the survey vehicles. In retrospect, while the Canon 7D offers participants the cheapest means available of recording high quality HD video in a robust and highly portable package, the noted disadvantage is its ease of use. As the device is primarily a dedicated stills photograph camera that happens to record digital video, the operational interface is non-intuitive and requires a greater degree of photography knowledge to generate quality results, as opposed to a dedicated video device, which maybe more 'plug-and-play' user-friendly. This reality translated to higher observed levels of frustration when WCC participants interacted with the device. It also made it difficult to for participants to take control of the device and record footage unassisted during field activities. However, the trip was designed as a training exercise, and once participants gain operational confidence, it may prove more useful in the longer term.

Instructed by the Zoologist, the participants were shown how to set up the two motion sensor cameras. A number of youth participants nominated themselves responsible for these devices. Participants located the cameras at four different locations over two nights, with the hope to capture animal footage for use as data in the fauna survey. The youth participants recorded two animals: the Fat-tailed Dunnart (*Sminthopsis crassicaudata*), and a Sand Goanna (*Varanus gouldii*). For all of the WCC participants, despite the fat-tailed Dunnart being considered a commonly occurring species and the camera having been set up on a rocky outcrop only 20m from the group's camp, this was the first time they had seen one. The goanna was filmed re-entering its burrow early in the morning. A group of boys after viewing the footage became excited knowing its existence, and promptly took off to capture it. They returned shortly with the goanna to show the group, then returned it unharmed to its original location. In the six years the researcher had participated in field trips with WCC members, this was the first time they had witnessed a live captured goanna of this size be returned unharmed during a field

trip. The more common Ngalia practice was to promptly kill, clean, cook and consume the animal, which is considered as high-quality bush meat. In this instance, it was viewed as an NR asset, and discussed and treated accordingly, as if a prop for prompting discussions amongst participants about language, cultural uses etc.



Image 7.16 WCC members participate in in-field training

The group returned to Leonora after three days in the field. Within a broad range of outcomes and resulting material/data, participants had managed to collect a number of animal scat samples from the immediate proximity of several of the well-intact middens. These samples were sent to scientist, Barbara Triggs for visual content analysis. The results confirmed that several samples were consistent with marsupial/rodent composition. This prompted the WCC Rangers to forward the scat samples on to Dr Mike Bunce at the Murdoch University Ancient DNA Research Laboratory for DNA analysis. The results were mixed. Initially one sample matched the lab DNA markers for *Leporillus sp.* However, this result failed to replicate during subsequent testing. The reported cause was either the scat sample was old, i.e., degraded DNA, and too damaged to get it to synch with the lab markers again, or that it was cross-contaminated with *Leporillus sp.* DNA during the sampling process (stored in the middens). In any case, the project provided significant and multifaceted learning for the WCC Ranger Group, who had participated in, and led

an exciting range of progressive NRM projects. The results indicate to the group that the scats likely belonged to *Leporillus apicallis*, and that there is a strong likelihood the animal existed long past its noted extinction date of between years 1930 to 1940 (Robinson & Burbidge 2008). The WCC ranger group are keen to continue sampling for evidence of the animal in this immediate area, and further into the east of Ngalia Country, where extractive industries and pastoralist have had less impact on the natural environment. The final DNA results for this project were released in January 2011. Therefore, the accompanying footage and subsequent project reports had not yet been finalised. The community video is yet to be edited, as participants were waiting for final DNA results prior to workshopping their narrative. The stock footage remains in position of participants.

7.8.4 The new Walkatjurra Web site

Funds to create a new WCC web page (Image 7.17) were allocated within the IHP2 budget. The justification to replace the multiple community-designed Ngalia and WCC sites was one central platform for Ngalia and WCC information on the Internet that incorporated fully functional e-commerce services, document access, video and photo access, and presented in a professional layout. Essentially, the participants wanted to re-create the WCC shop in virtual form, as the 'space' where WCC activities are administered, participant dialogue generated, and project outcomes disseminated. Thus, in September 2010, the WCC contracted Perth-based web design company Ondzine (<<http://ondzine.com/>>) to workshop with WCC participants a new web site design, create the site and train WCC participants in content and site management.



Image 7.17: The new WCC web site

The designer provided three draft sites for participants to review, using feedback from several consultations with participants on what they wanted to achieve with the new site. Once a final version was agreed upon, participants provided the designer with content so the final draft could be completed. This included a number of the best photographs taken by WCC participants during field related activities, written reports and relevant text for inclusion in the new site. The new site was developed using 'Concrete 5' (<<http://www.concrete5.org/>>) content management system (CMS). Concrete 5 is free and open source, meaning the software source code is published and made available to the public (permitting anyone to copy, modify, redistribute it) without incurring any costs. The web designer used this CMS for the WCC site, because it would provide a system for managing content that permitted participants to self-manage the majority of content, without having to rely on an exogenous expert to edit and maintain site content. The Walkatjurra site incorporates scripting languages: PHP 5, HTML, Javascript and CSS. It uses Apache 2.0 webserver, and MySQL 5.2 database service. It is hosted via Go Daddy (<www.godaddy.com/australia>) domain registrar and web hosting company, as WCC participants already used this service.

The new WCC site can be located at <www.walkatjurra.org>. It contains the following sub-pages (layers) at the top menu bar:

- 'About' – a brief introduction to the WCC and its objectives; Community Participants – a list of some of the WCC's participants and supporting community groups
- 'Traditional Knowledge' – an introduction to the context and significance of traditional knowledge in Ngalia livelihood. There is also a link to the Ngalia CSMS login within this window. Ngalia Foundation – links to the NTWA Ngalia Foundation appeal site and contacts
- 'Community Resources' – provides access to information relevant to community members and WCC participants i.e. health, family support, employment
- 'Projects' – lists the two main tiers of projects within the WCC (Ranger and Arts projects)
- 'Media' – links to all the WCC produced videos, a selection of photographs, and download access to selected documents (WCC research reports, publications)
- 'Sponsors' - cites organisations supporting the WCC and its activities
- 'Contacts' – point of contact (email, postal) for the WCC and its members.

Ondzine provided one training session for WCC participants on site and content management using the Concrete 5 CSM. Three WCC participants attended the workshop, and each participant had significant computer experience. Ondzine offered unlimited technical assistance to the WCC and its participants in the future, and has offered to run further training workshops as required.

At the time of finalising this research project, an e-commerce feature had been designed for the site, though not gone live on the site as the WCC was involved in producing and stocktaking participants' art pieces to offer for sale in the near future. The WCC planned to hold an arts exhibition in mid 2012 and aim to run the e-commerce feature in conjunction with this event with the aim that people attending the exhibition will be able to purchase art direct from the gallery and via

<www.walkatjurra.org>, and thus, increase the number of art pieces available for purchase.

A number of community/participant videos were embedded into the Walkatjurra site from the WCC Vimeo account. By using Vimeo as the video hosting site, participants are able to track the number of views per video per day. This Vimeo feature of allows participants to in-effect monitor the impact of WCC videos screened at conference presentations, community meetings, and embedded within media releases, as correlations between the day of screening and number of views can be noted. Two participant community members maintain the new WCC site after receiving training from the site designer. The researcher also contributed to the site. Two other participants have shown an interest in maintaining the site, and there are plans for their training in site operation with the broader WCC participant group supporting this initiative to spread the site management load.

7.8.5 Ngalia mobile phone adoption

At the completion of the case study research in early 2011 WCC participant rates of mobile phone adoption (MPA) had increased rapidly from initial observations made in 2005. Initial MPA WCC participant figures were recorded at 20 per cent, i.e., 5 of 25 participants, owned a mobile phone. This was low to use as a representative of wider MPA. However, researcher' observations suggested that the 25 participants MPA rates were in fact indicative of wider Ngalia and Wongai MPA rates for the region. The main reason given for not owning a mobile phone in 2005 was the prohibitive costs associated with maintaining active network connection.

In 2010, MPA among the same 25 participants was recorded at 72 per cent (18 of 25 participants). Of those who owned and maintained a mobile connection service, 83 per cent (15) used a pre-paid contract, and 17 per cent (3) had phones capable of sophisticated web based activities (e-commerce, email, Internet browsing etc). Several participants owned more than one functional mobile phone at any one time. Ownership by gender was practically even (8 male, 10 female).

Subsequent to the initial observations in 2005, the researcher raised the subject of MPA at a number of community planning meetings and during informal participant interviews. The most frequent response for their increase in adoption/ownership rates was that the reduced costs of maintaining mobile phone, which meant purchasing regular 'credit' was more affordable. Not one participant could give the rates of making calls from their mobile phone, and most were not prepared or unable to recount the exact periodic (weekly, monthly) cost involved in maintain this service. The favoured 'pre-paid' system resulted in highly variable maintenance costs between participants pending usage rates, however most participants agreed they would spend between \$25 and \$100 a week on mobile phone credit, purchased from the local Leonora Post Office. Once they ran out of credit, they would stop using the phone, and borrow a friend or family members with credit, until their next CDEP payment or other income, as derived from, for example, heritage survey consultancy, or traditional owner (TO) payment, was received. Participants also indicated they primarily used mobile phones for person-to-person communication via: a) voice calls, b) SMS, c) MMS, d) email – as per order of frequency. Several participants indicated they would purchase customised ring tones for their phones from printed advertisements found in magazines and newspapers.

All participants were utilising the Telstra pre-paid service, which offered the greatest range of regional coverage in the Northern Goldfields. Participants also where aware that being on the Telstra network, they could pick up a mobile signal when in close proximity (<10 Kms) from one of the region's mine sites. The vast majority of established mine sites in the region had invested in the installation of 'private' Telstra mobile phone services for use by employees and contractors working on the mining tenement. The general public could access these signals if in possession of a Telstra contract and mobile SIM card:

Wongai's know you'll get a signal off a mine site, they'll set up camp in the bush nearby so people can still contact them, when they travel between towns. [They] used to follow water hole routes for travel, now they follow mobile signals (PM1, personal communication 12 May 2008).

Another informant stated that they regularly moved to nearby a mine site when travelling between towns in the Northern Goldfields, especially if they knew someone wanted to contact them, or they had to reach family/friends: *'We got no signal at the camp [south west of the Aboriginal outstation settlement of Mulga Queen, near Laverton], but we go west towards the mine and get one there ... [it's] useful, yeah it's good. Get funeral details, talk to family without going all the way back'* [to Laverton, 150kms away]. (PF1, personal communication 12 May 2008)

Table 7.9: Summary the key ICT-related development agency elements of project phase 7

Strengthening ICT4D and the virtual WCCC – project phase 7				
Participants	ICT used	Participatory approach: 'Community directed & emergent'	Themes: Advocacy & traditional knowledge (TK)	Outcome
Ngalia community members & youth	Digital video, digital motion sensor cameras, Website design software, Internet, mobile phone device.	Asset ownership, decision-making control, autonomy of project objectives, themes, location & timeline. Endogenously driven	TK management Community advocacy: industry impact on traditional resources Natural Resource management (NRM) Effective inter/intra community communication	Outreaching political advocacy: issue & voice raising Community ICT capacity building Empowerment: early adoption of new technologies within peer group. Empowerment: effective inter/intra community communication
Researcher		Facilitator, observer: provide advice & assistance as required.	TK management and transmission NRM Community advocacy	Endogenous community driven development
Environmental Consultant	Motion sensor cameras	Exogenous expert: action learning	Environmental management	TK in practice
Web Designer	Web software, Internet	Exogenous expert: capacity building	Cross-community /external communication & networking, economic development	

7.9 Ngalia community case study completion

While the researcher's voluntary engagement with the community continues, the completion of the phase seven project marks the end of the direct ICT-related research period for this thesis. The story of the various project phases richly illustrate the diverse number, evolving quality and increasing sophistication of community-driven ICT interactions undertaken over that seven year period. The summary tables indicate that a diverse number and range of participants have been involved in the interaction experiences involving a rich variety of ICTs tools. Together, the various project stories suggest that the Ngalia community's ICT interaction experiences have played an increasingly important part in their EnCDD agency and outcomes. The stories indicate that the ICT interaction experiences have had significant impact on individuals and the community as a whole.

7.9.1 Case addendum: Charges dropped – youth aversion strategy planned

In December 2010, the WCC youth returned rehabilitation to attend court. A number of WCC participants attended the hearing, and one WCC member read the Judge a letter outlining the activities undertaken by the youth while in 'rehab', along with statements stating the youth's behaviour had been positive during their stay at the station. The Judge was impressed with the youths' behavioural changes, the effort they had made while away, and the demonstrated support mechanisms provided by the community. Because of this, the Judge dropped all charges on the youth (over 20), and hoped they would use this second chance to stay out of trouble and participate in the community led initiatives. This successful community driven outcome has ongoing implications for the community and its future aims and challenges to engage and sustain the youth in meaningful development initiatives.

7.9.2 IHP Project 3

The WCC participants lodged a third IHP funding application with the assistance of the National Trust of WA and have been informed that they were likely to receive similar finance (around \$100,000) to conduct a third phase of heritage based

projects. Discussions between the researcher and WCC participants indicate they will use this budget to continue to edit and overhaul their Ngalia CSMS, conduct a third field trip to locate evidence of *Leporillus apicalis*, train more WCC participants in content management of the Walkatjurra.org web site, expand their video productions to re-engage the youth who have returned from rehab, and continue to expand their Ranger NRM program, with increased training and field based activities.

7.9.3 Future Ngalia/WCC developments

Throughout the researcher's participation and observations during the seven years of the case study the participants continual engagement and deliberation on planning and mapping activities to realise their long-term community development goals was noteworthy. These development directions were often clearly articulated during conversation, meetings, and email dialogue by key-community decision makers (KCDMs) or 'key agents'. More specifically, the most effective KCDMs are participants with those with competent cross-cultural communication skills (Aboriginal and non-Aboriginal). They are informed about exogenous opportunities, and being well networked and respected endogenously and exogenously are a vital community asset. These KCDMs were pivotal to the articulation of the kincentric community's holistic and long-term development plan with the wider community variously engaged in the deliberation process. In the appropriate socio-cultural context, and more specifically, 'on-country' many of the more introverted participants consistently articulated their views on various elements of this plan, demonstrating a collective and embedded understanding of community goals, objectives, priorities and aspirations.

Observations indicated that while there maybe variable levels of sophistication in expression as related to diverse cross-cultural and literacy competencies amongst the participants, they share a collective and embedded quality of community understanding about key development agency aspirations: The following examples illustrate this deliberative community engagement process and how the ICT-

interaction experiences and outcomes worked as a tool to meaningfully engage the widest range of community participation:

- The KCDMs would articulate the significance to successfully lodge and be awarded a native title claim over a land area of strong cultural significance, describing the required steps to initiate and achieve this objective, along with the projected impact on the Ngalia people.
- Alternatively, while less able to explain the Native Title process, a number of other Ngalia participants would clearly express their desires to maintain physical contact with land areas through field activities within the WCC. While exogenous mining-related forces had reduced their ability to maintain regular access to such lands, they understood that continuing and documenting their cultural connection to this area would increase the likelihood of access (through native title award) being given to them.
- KCDMs expressed their desire to continue interacting with ICT throughout Ngalia/WCC initiatives, as they noted that ICT had provided them with many opportunities and valuable outcomes over recent years that would have potentially been unachievable without these tools.
- Participants not necessarily able to explain key concepts of ICT and their applications within development objectives, but could cite the benefits that these interactions had on the collective, and would vouch to continue utilizing these tools in future projects. This understanding was underscored by the ability of ICT related projects to engage a range of youth to WCC activities and objectives.

Over the six-years, the logic underpinning the community's four key strategic and targeted development agency areas were significantly clarified to the community and the researcher. The four areas are:

1. Preserve and regain access to traditional lands
2. Develop meaningful livelihoods for Ngalia people, ideally on traditional lands
3. Expand Ngalia peoples skills and capacities so to attain any 'life opportunities', available to the mainstream population

4. Preserve, manage and develop Ngalia culture

The case-based story of the Ngalia people vividly illustrates the vital role of ICT-interaction in mobilising this EnDD agency.

The material included in the individual project phase summary tables in this chapter will be further analysed and discussed with regard to the ICT-interaction for EnCDD agency elements framework elements in Chapter 9 and identify impact and the specific lessons learnt by the Ngalia community and the researcher. Chapter 8 presents some minor case experiences that the researcher engaged in consecutively with his ongoing engagement with the Ngalia community. These minor cases offer alternative experiences for comparative analysis.

Chapter 8

Minor ICT and Aboriginal community development cases

8.1 Introduction

This chapter presents a complementary, but diverse, set of descriptive data through observations made during minor case study experiences of ICT interaction at three Aboriginal settlements and community groups. The three cases are from diverse remote and regional locations: the Titjikala community in the Northern Territory (NT), the second Ngalang Boodja Council Aboriginal Corporation from Collie in the south west of WA and a third, a community at Ceduna in South Australia. These case experiences related to the researcher's involvement in DKCRC 'Plants for People' project work (see Evans et al. 2010) and through involvement in a joint project between Curtin University and the Desert Knowledge Cooperative Research Centre, Core Project three (DKCRC, CP3). The aim of these minor case observations is to present additional analysis and reflection 'reality checking' reference points to participant observations of the primary case study, and to contribute to relevant 'lessons learnt' knowledge on the more generalised assessment of the role of ICTs as appropriate tools for community Aboriginal development.

8.2 Minor case study 1: Titjikala

In 2006, the researcher made two purposeful trips to the remote Aboriginal settlement of Titjikala in the Northern Territory. The researcher facilitated several ICT initiatives, which contributed to additional observational data relevant to this research project. One of these ICT initiatives replicated one of the Ngalia people initiatives, and thus, deemed relevant.

8.2.1 Titjikala geo-cultural background

Titjikala (Tapatjatjaka, Maryvale) is located in the Simpson Desert, 107kms south east of Alice Springs in the Northern Territory of Australia. It is connected to the major service centre of Alice Springs by an unsealed road that becomes rapidly impassable during periods of heavy rainfall. A dirt airstrip facilitates seasonal access by plane. The community is located within the boundaries of an extensive pastoral

station, Maryvale Station. It experiences mean maximum temperatures of 37.5°C (summer); mean minimum temperatures of 5.6°C (winter); and 188.8mm of annual rainfall. It is a harsh living environment (Bureau of Meteorology 2011), and a remote Aboriginal community orientated settlement.

While the immediate locality of Titjikala was traditionally home to several groups of Aboriginal peoples, the community is now predominantly made up of first, second and third generation peoples of Arrernte, Luritja and Pitjantjatjara ancestry. These subsequent generations are now all considered to possess a cultural connection to this locality, and it's 'dreaming' (TACC 2011). Primary languages spoken in the community are those of Arrernte, Luritja and Pitjantjatjara dialect, as well as English (TACC 2011).

The community of Titjikala was formed after Aboriginal families moved to Maryvale station for work in the 1940s. The station provided rations to Aboriginal stockmen and domestic helpers. In the 1950s, the population further expanded as Christian missions trucked people there every six weeks for a period of time. By the 1960s, people began leaving their traditional 'humpy' housing, and began building sheds with flooring. Piped bore water replaced the original open well. A school was developed in the 1970s. In 1987 the community obtained freehold title to the land, and one year later the Northern Territory Government formally gazetted a control plan, restricting certain land usages and future developments within the community.

According to the 2001 national census data, the population of Titjikala was 258 people, of which 90.3 per cent identify as Aboriginal. The population is relatively young, with 35.3 per cent below 15 years. Median weekly income was reported at \$245 per individual of working age, however this figure may be inclusive of government welfare payments via CDEP style initiatives (ABS 2001). Titjikala boasts a general store, primary school, women's centre, arts centre, childcare crèche, community laundry, mechanical workshop, shaded basketball court, health clinic and a Centrelink office.

The Tapatjatjaka Community Government Council (TCGC) manages the governance of Titjikala with annual budgets of around \$4m. The TCGC employs approximately 26 people of both Aboriginal and non-Indigenous identity. No permit is currently required to enter the settlement. A tour company (Gunya Titjikala) was established on the outskirts of the community, offering 'deluxe safari tent' style of tourism accommodation and cultural tours. The operation maintained that it employed Aboriginal people from the community, and that a portion of revenue was returned to the TCGC. Gunya Titjikala closed in October 2007.

8.2.2 Titjikala – preliminary research development

Initial contact with the Titjikala community was provided through the university funded DKCRC 'Plants for People' NRE project. Through this contract, the researcher was able to observe the community's enthusiasm for the participatory quality of the ICT-interaction aspects of the research project. All communications with Titjikala participants was initially mediated through the senior administrator, a non-Indigenous male acting as the community's chief executive officer (CEO). The researcher dialogued with the CEO about the potential to facilitate a PV initiative within the community and agreement was given. During the initial visit to Titjikala, the researcher met with community members and observed many of participating in settlement initiatives, most notably, an art based, and a horticulture-based program. There were many other community resources, including a women's centre, a community school and community health facility, though the university had specific project involvement with the arts and horticulture initiatives.

The researcher noted that the ICT infrastructure and interaction in Titjikala was far lower than that initially observed in Leonora in almost every aspect. In 2006, there was no mobile phone service available, and subsequently, no mobile Internet service (Tangentyere Council and the Central Land Council 2007). Phone cards were sold via the community store, to provide access to public phones. There were no public points of computer or Internet access. However, people could unofficially utilize several desktop computers and Internet connection within the Council administration building. These were relatively old, and with limited technical

capacity, i.e., generally not powerful enough for digital media processing, such as video. The community had developed a digital heritage management system, with some similarities to the Ngalia CSMS, but the researcher observed this to be a project largely managed and directed by non-indigenous community staff, and there seemed to be little comprehension or participation in this initiative at the community level. The Council administration building housed a Broadcasting for Remote Aboriginal Communities Scheme (BRACS) system, but it was evident it had not been in service for a number of years and was in a state of disrepair.

Subsequent reflections identified that a lack of meaningful relationship between the research initiators and members of the community was influencing the community members' willingness to volunteer to participate. However, at the time, the researcher overlooked this unwillingness issue, as in his partnered relationship with the Ngalia peoples levels of reciprocal trust were established prior to inception of the research project and there were time constraints. After participating in two community meetings to explain and discuss the proposed project with key community members, a number stated they would be happy for the researcher to submit a proposal to the community CEO, and indicated that they trusted the CEO's judgement to review the proposal. After this initial meeting, the researcher returned to Perth to write a proposal for potential participation in the research project.

The researcher had recently co-planned the proposed a similar PV project with members of the Ngalia community in Leonora. Allocated time and funds were available for the project team, which included the two Canadian research fellows, to conduct a similar initiative in Titjikala as in Leonora. It was proposed to the Titjikala community that the researcher and the two visiting research fellows and their children would travel to Titjikala for two weeks to offer a highly participatory community video initiative to anyone interested in learning digital video production. The allocated time was to be directly after the two-week period spent working with the Ngalia, so the researchers would be able to evaluate the Ngalia project, prior to beginning work with the participants in Titjikala. The community

CEO approved the proposal, and from late April 2006, the researcher and the two research fellows travelled to Titjikala to work on a community PV project on the understood that pending initial outcomes, this Titjikala project initiative would form the basis for an ongoing community research relationship.

8.2.3 Tijkala participatory video project

Prior to the project, the Community CEO was given a list of required equipment purchases; the researcher and fellows selected these items with primary concern for useability and affordability issues. A digital video camera (Canon NV-GS400) as used in the Ngalia project was recommended. Other equipment consisted of a tripod, microphone, and suitable editing computer with a minimum of 2gigs of RAM and 100gig of free hard drive memory. As the CEO could provide in-kind a laptop to the project, the total equipment costs were no greater than A\$1500.

On arrival, the research team spent the first day and a half meeting people within the community and informally discussing what they had recently achieved with the Ngalia community explaining the potential to generate similar outcomes for this community, if they so desired. The researchers met with a senior male elder who facilitated much of their participant contact during the course of the project. It immediately became apparent to the research team that this would be a very different project to that conducted with the Ngalia people. They recognized that the overarching differences between the two participant groups would influence the project outputs, outcomes, timing, and methodology. The key community group differences were noted as involving:

- Greater participant numbers (250 opposed to 25)
- Lower degree of 'shared vision' within the participant group
- Larger range of individual projects within the community, with lower levels of inter-relatedness
- High degree of existing intra-community tensions;
- Exogenous and paternalistic community governance/communication structure

- Lower experience levels of ICT interaction
- Lower levels of existing ICT services and available infrastructure
- Increased remoteness
- Smaller non-Indigenous population

All of these factors combined to reduce the research team's ability to rapidly facilitate the leveraging of desired local 'meaning' within the initiative, as had been achieved in Leonora where the conceptualisation of project outputs easily aligned to community-driven action plans.

This reality proved to be a conundrum for the research team, who desperately wanted the project to produce a endogenously identified local community benefit, but at the same time, also had to acquit the project to the University funders by the pre-agreed outputs of a completed community produced DVD. After having met with a wide range of potential participants over several days to plan the project, no community-identified narrative had been initiated. The research team discussed this dilemma in detail and reluctantly decided to propose content for the community DVD. The research team had noted that there were high levels of intra-community tensions, often cited as 'humbug', which had resulted in recent outbreaks of intra-community violence. Tensions within the non-indigenous governance and management sector of the community were also observed. This tension had contributed to low trust levels within the community, and to even a breakdown in intra-community cohesiveness, i.e., low levels of community member bonding agency. Thus, the research team proposed a DVD production that would highlight the existing activities and initiatives within the community, to showcase many of the positive community-driven activities in place.

This proposition was presented to a group of nine pre-identified community decision makers, i.e., elders made up of five women, and four men, who supported the idea. The group of elders nominated three young men (Image 8.1), in their late teens to early twenties to do the filming. They were shown how to operate the equipment and given ideas for potential material to film. The researcher and one of the research fellows assisted them during the filming process. In this instance, they

took the lead and used local knowledge to identify aspects of the Titjikala community that would be filmed.

The following day, the research team was invited out on a Bardi digging trip with a group of women. Two elder men accompanied 12 women and the research team to a location outside the community. The three young men, who filmed on the previous day, showed no desire to join, presumably because digging of Bardi was considered a women's role. Subsequently, the research team filmed this activity, as none of the participants showed any desire to take this role. The research team later discovered that this location and activity was often used as a 'cultural experience' for the tourism customers of Gunya Titjikala tours.



J Corbett

Image 8.1: Three Titjikala men involved in the video project

By the end of the first week, there was enough footage to edit a DVD narrative. However, the researchers were required to leave the community and travel back to Alice Springs from Friday to Sunday. The following day they met with many of the participants from the previous week to identify a group of participants to edit the video footage and produce the DVD. Despite great efforts, no participants were

identified. People were observed to be either not interested, or did not know nor want to know how to edit video. Again, with great reluctance, the research team were forced to edit and direct the video themselves. Initially, this was done in a location where community members could observe the process, and ideally, encourage participation. However, it became apparent that despite some initial interest from the three young men who had filmed some of the footage, no one was interested in the process. The researcher observed community members purposefully avoiding entering the room in which they were editing the footage so not to create dialogue with the researchers, and to avoid being invited to participate. This was most distressing and disheartening for the researchers, who viewed themselves as well versed in participatory methodology and had successfully assisted in the implementation of many community-based development initiatives, with between them a diverse international range of Indigenous peoples experiences. Thus, the video edit was completed and despite several attempts to have community members review the final draft, it went through to completion with no participant appraisal.

The researchers announced that the DVD would be screened in the community administration office at the end of their final day in Titjikala. Community members, who had participated in the project, were asked to pass on an invitation to view the DVD. Over 80 people attended the screening, representing 31 per cent of the population. Only 9 per cent of the population participated in the production of the DVD. As was observed with the Ngalia people, the DVD was well received by the community of Titjikala. The observers noted that people were excited to see themselves and people they knew on TV, generating much laughter and excitement from the viewers. The Titjikala narrative, which explored the range of community activities, presented images of a cohesive community working towards overcoming the disadvantages of their geographic isolation through their own provision of many community services, and through people working together to achieve collective goals. The DVD title of 'Welcome to Titjikala' suggests that the DVD could have multi-purposes uses as an expose on the community and the activities undertaken

there. Some 30 copies of the DVD were created and distributed to community participants at the completion of the project.

The master project files remained on the community computer and the CEO was capable of creating further copies of the DVD should demand require it. Feedback on the project from the CEO was surprisingly positive. Given the unrest in the community at the time of the project, the CEO stated the DVD had provided a welcome period of collective calm. The CEO stated that the social bonding outcome at the community screening was also important, as many of the participants attending and laughing together, had several days prior to this been engaged in substantial fighting. While the project was offered in the same manner as that conducted in Leonora, its largely exogenous and expert driven action derived from the inability of the researchers to engage community participants at autonomous decision-making level. This participation was achieved with the Ngalia people, and the implication for active participant control of decision making meant the range of 'meaningful' outputs of the project were substantially higher.

8.2.4 Titjikala – further participation

Despite the project's limitations, the researcher was invited to continue working with the community through his ICT research project. Curtin University's involvement in the 'Plants for People' NRE project would provide the vehicle to continue to work with the community and observe ICT aspects of community development. The CEO was keen for the researcher to work with the three youth who had filmed some of this project, and developed a series of video related community initiatives. However, in 2007 the Australian Government, under then Prime Minister John Howard implemented the Northern Territory National Emergency Response (NTNER), AKA the 'Intervention'. Titjikala was named as one of the first communities to be affected by this policy. The lead-up investigations preceding the NTNER caused significant disruption from regular community life from late 2006 through to its announcement in 2007 (CEO Harry Scott personal communication, with Professor Louis Evans). Many of the existing research and development projects running in Titjikala had been placed on hold, as the

community underwent the distress of having military-lead intervention, with significant restrictions placed on their lives. Because of this, the researcher was unable to continue a research-orientated dialogue with members of the Titjikala community. Thus, unfortunately Titjikala was removed as one of the three primary cases to be used in this research project. Table 8.1 below summarises the key ICT related development agency elements of the Titjikala PV project.

Table 8.1: The key ICT related development agency elements of the Titjikala PV project

Titjikala Participatory Video Production – PROJECT 1				
Participants	ICT used	Participatory approach: 'Community directed & emergent'	Themes: Advocacy & traditional knowledge (TK)	Outcome
Senior male	Digital Video, DVD, digital photography	Decision making power, participatory dialogue, content selection, respected opinion	Community cohesiveness: livelihood activities, community-based initiatives.	Ownership of community directed media production. Positive depictions of community life.
Senior women	Digital video	Decision-making power, participatory dialogue, content selection, respected opinion, inclusion.	Connection to country: cultural activities including traditional hunting, arts & child care.	Internally strengthening (bonding): valorising women's participation in community activities. Bridging: livelihood valorisation with exogenous parties.
Male youth	Digital video	Decision making power, inclusion.	Livelihood activities	Internally strengthening (bonding): valorising men's participation in community activities. Bridging: livelihood valorisation with exogenous parties.
The researcher		Exogenous expert technical advice as needed: equipment & editing	Facilitate technology interaction	ICT capacity development in participants
Research fellows		Exogenous expert technical advice as needed: equipment & editing	Facilitate technology interaction	ICT capacity development in participants

8.3 Minor case: Ngalang Boodja Council Aboriginal Corporation

Through the NRE 'Plants for People' project, the researcher had the opportunity to observe participants of the Ngalang Boodja Council Aboriginal Corporation (NBC), located in Collie, as a minor research case. The researcher worked with members of the NBC from 2005 to 2007 as a project officer, involving limited periods of contact during day-long field visits to participate in field-based activities and community planning meetings. Two specific ICT projects were conducted with NBC members. Through this contact, the researcher observed and gained insights into their development objectives, and how ICT interaction was used to address their development agency aims. The researcher assisted in the facilitation of several community produced videos, including one co-facilitated by a partnering university and Aboriginal media production company.

8.3.1 NBC geo-cultural background

The NBC is an Aboriginal Corporation established under the Aboriginal Councils and Associations Act 1976 in September, 1999. Similar to the Ngalia peoples, members of the NBC stage agency related objectives of cultural maintenance, livelihood development, land (re)claiming, increased decision-making capability, inter-cultural networking, NRE and NRM. These advocacy and development agency themes are evident from the stated formal community objectives (NBC 2011):

- Securing land and protect heritage on behalf of Noongar peoples, including communal, group or individual rights, interests, and obligations of Noongar people in relation to land
- Make policy on Noongar land in accordance with Noongar traditions and values for Noongar culture and language
- Seek legal, political and historical recognition of Noongar people's individual, communal and collective rights
- Support the maintenance, development and advancement of Noongar culture and collective language

- Promote harmonious community relations with other members of Australian society
- Manage and maintain land given to the Corporation
- Promote advancement of Noongar people's health, education, social and business enterprise

The NBC is located in the regional town of Collie, 213kms south of the State Capital Perth. It is run by and for members of the local Aboriginal Noongar population, and administered by members of all key family groups within the town. The population of Collie consists of around 7,000 peoples, of which 3.2 per cent identified as of Indigenous heritage, i.e., 1.1 per cent higher than the national trend (ABS 2007). Local Industry activity is related to either the mining of coal resources or the production of power through coal fired power stations. The coal mining industry directly employs 14.4 per cent of the town's population (ABS 2007). Collie's climate is classified as 'Csb' under the Koppen climate classification system, and experiences cool Mediterranean weather, with consistent winter rainfall (BOM 2011). In comparison to the Aboriginal communities in Leonora and Titjikala, Collie is not classified as a remote community; it is a rural town. Thus, its inclusion within this study has limitations. However, Aboriginal members of the NBC share many of the same disadvantages and levels of marginaliation as those located in Leonora and Titjikala. Hence, the observations would produce a set of comparative data.

8.3.2 NBC – video project 1

With the 'positive impact' of the ICT related activity in Leonora and Titjikala noted by the researcher's then supervisor, they were asked to attend a number of NBC meetings with the objective of offering guidance to participants as to how they might embed ICT, especially PV or web based activities, into their community development activity. These meetings generally involved representatives of all of the 'main' Aboriginal families within the town, who formed the NBC decision-making body. Historically, many of these family groups were in conflict, but the NBC provided a forum where the town's Aboriginal groups were able to unite under a single voice and work together to identify and implement a cohesive community

development plan. Prior to the formation of the NBC, resources were difficult for single-family groups to access, as funders would generally not support family-based initiatives. The NBC, and its demonstrated inclusive 'whole-of-community' development agenda had meant Aboriginal people of Collie were increasing their success to generate support for their development activities. With this in mind, the researcher suggested a group of NBC youth, from late teens to early twenties, film a given council meeting to showcase the level of inter-family partnerships. Feedback from NBC participants supported this idea, and stated they would like to create a short video explaining what the NBC is, who it is, and what they want to achieve.

Two males in their late teens filmed the video at several locations around the community. The researcher provided a short period of training prior to the field-based activities. Senior members of the NBC identified and directed the narrative and subject. The NBC had no ICT equipment, and thus, the researcher's equipment was used for the production. It was noted that this was less than ideal, as it constrained NBC participant project ownership to some degree affirming the control of an exogenous expert. However, there was no budget for any equipment acquisition by either the NBC, the researcher, or the University project. This reality presented further equipment issues for the participants, as there was no suitable computer available to edit the video. Further to this dilemma, the researcher was committed to spending significant time in the community at Leonora, and so time constraints prevented a video editing training workshop for NBC members. In collaboration with Professor Louis Evans, the researcher made several draft edits of the video in his spare time, and sent these to the NBC for review and comment. These were acknowledged and a final 'NBC reviewed' DVD was produced and distributed among NBC members. While the process chosen for the creation of the DVD was not as inclusive of participant agency, it is acknowledged that the main aim of the initiative was to expose NBC members to the potential of ICT interaction for community development.

The researcher's supervisor regularly travelled to Collie and worked closely with the NBC, and thus, she provided the researcher with the feedback from the NBC that all

members had approved the DVD. In addition they requested that a further number of copies be sent to them, as Aboriginal people from the broader Collie community outside the NBC had shown interest in this record of a shared community initiative. They also indicated that there was positive value in seeing family and friends on video, in a structured narrative of Aboriginal community development.

The researcher returned to the NBC in Collie some months later, when work demands in other communities were reduced, to give a presentation to NBC members of how they might choose to increase their levels of ICT interaction to benefit their development objectives. The presentation included the potential to generate an NBC web page that showcased community initiatives and industry support, as well as how they might like to formalise a PV program. Response from participants was positive. However, researcher observations suggested that as a group, the individual members of the NBC had little experience in, and understanding of how ICT might be used within their development projects.

During this NBC contact period, participant conversations indicated that the NBC was open to the idea of utilising ICT as a tool, but expressed uncertainties about the process of adopting these technologies. For instance, everyone spoken to liked the idea of having a NBC web site to showcase community successes and offer a contact access point. However, participants stated it would probably be too expensive to set up, and no one really had the skills to manage the site, nor knew much about managing web sites. This mixed NBC participant enthusiasm but caution translated across concerns for the potential adoption and management of a suite ICTs. It is noteworthy that of the four case studies, the NBC is likely to be the least affected by degrees of remoteness and rural connectivity issues, as it is located relatively close to the major regional city settlement of Bunbury and the State capital of Perth. Yet, it demonstrated the lowest levels of ICT interaction and adoptions comprehension. Conversely, NBC participants had the greatest access to digital media (TV stations), 3G mobile carriers, ISP's, ICT hardware distribution and servicing.

8.3.3 NBA – video project 2

In 2009, the researcher was partnered with members of the Kulbardi Centre (<http://www.kulbardi.murdoch.edu.au/>), an Aboriginal-run training centre at Murdoch University that houses a media production initiative: Kulbardi Productions (<http://www.kulbardiproductions.com.au/>). Through a joint grant between Curtin University and the NBC, funds were available to have members of Kulbardi productions assist in the production of a community video for members of the NBC. University staff workshoped potential narratives with NBC members and two narratives were identified:

- The cultural significance of a particular water body frequently accessed by NBC members, and
- The application of TEK within a contemporary community health project

Two male staff members of Aboriginal descent from Kulbardi Production joined the researcher to facilitate the project for the NBC. The production of the two short videos was not highly participatory, as it was filmed by the Kulbardi staff and co-produced by the researcher and Kulbardi staff. This was primary due to Kulbardi operating as a media production unit, not a participatory research unit. Therefore, they approached the task with a universal oriented client – contractor relationship. However, they were well versed in Noongar cultural protocol, i.e., speaking local language, and understanding decision making processes, which ensured the project ran smoothly, and appeased NBC members. The two videos were filmed over two days (Image 8.2) spent in Collie with NBC members. Three senior NBC members representing three separate family groupings directed the video locations and content. The researcher undertook the first draft of post-production editing at a later date in Perth. A draft was submitted to the NBC, and a Kulbardi staff member undertook the final edit after feedback from the NBC.



Image 8.2: Filming the second Collie video project with Kulbardi Productions

The first video, titled 'The Story of the *Narngagudditch Wargal*', depicts the dreamtime story of a local spirit that created the local water body known as Minningup Pool. A senior NBC member narrates the story in both English and the local dialect. The second video acts as an expose into a number of NBC development activities. It includes interviews with a number of NBC members and footage of these activities. Both videos run for ten minutes. NBC members identified the variable target audiences for the two videos. The first was intended for internal viewing and as a cultural asset for members of the local Aboriginal community as a digitisation of an oral history. Participants felt the story is of significance to them as a group, and that preserving it in an accessible format would increase the likelihood of its survival in contemporary Aboriginal society This preservation and archiving concern linked to the reality that there were now few local people speaking traditional language and possessing knowledge that related to the story told.

The second video aimed at exogenous audiences and was designed to showcase a range of NBC development efforts. Similar to videos produced by the Ngalia people in Leonora, the video shows some of the collectives' agency and successes, with the aim to attract further exogenous support for their activities. The video had the potential to be shown at workshops, community meetings with exogenous guests,

conference presentations, emailed to potential project supporters. However, no data is available to assess the Impact of this bridging interactivity strategy. This project marked the end of the researcher’s contact with members of the NBC. The project funding had ended, and unfortunately the removal of another primary community contact for the researcher. Table 8.2 below summarises the more emergent character of the ICT related endogenous development agency elements of the two projects of the NBC case.

Table 8.2: The summary of the ICT related endogenous development agency elements of the two NBC projects

NBC Participatory Video Production Projects				
Participants	ICT used	Participatory approach: ‘Community directed & emergent’	Themes: Advocacy & traditional knowledge (TK)	Outcome
Community Participants	Digital Video, DVD, digital photography	Decision making power, participatory dialogue, content selection, respected opinion	TK, livelihoods, & community development.	Increased understanding of how ICT may be used to communicate their achievements & agency to exogenous parties.
Research fellows		Exogenous expert technical advice as needed: equipment & editing	Facilitate technology interaction	ICT capacity development in participants

8.4. Minor case: Ceduna Aboriginal Community (CAC)

In September 2008, the DKCRC asked the researcher to work on a PV project with members of the far west coast of South Australian Aboriginal community at Ceduna. The researcher was invited to travel to Ceduna for six days and assist in the production of a community directed video as part of a project research targeting desert-based enterprises.

8.4.1 Ceduna – case background

Ceduna is a small coastal town in the far-west coast region of South Australia, 786 km from the state capital of Adelaide. The town boasts a population of 2304, of which 24.1 per cent identify as of Aboriginal descent (ABS 2006d). The climate of Ceduna is considered Mediterranean, with long hot summers and low rainfall. Much of the town's economic activity is linked into the resource industry through the town's regional infrastructure function as a major resource port and shipping facility. Due to its high degree of remoteness, the town acts as an important service centre for the region's broader population and is the last major settlement before crossing the Nullarbor Plain and the Western Australian border.

8.4.2 CAC – training and video production project

The DKCRC directed the researcher to collaborate with several Ceduna Aboriginal residents who have been involved in their NRE projects to assist them in the production of a marketing video designed to showcase their enterprise. A key male member of the community had demonstrated interest to expand his ICT related capacities to focus on documenting Aboriginal events around the Ceduna region through the use of digital video. The community member had previously paid a local business to transfer his videotapes to DVD and the prohibitive cost he had aspired to build editing and production capabilities for his DVD production.

In addition, he had been requested by the female owner and operator of an Aboriginal health and therapy service to make a promotional DVD for her family enterprise. Thus, the aim of the Ceduna visit was to increase the community member's video editing capacities through skills transmission and increased access to the required ICT infrastructure. Through the targeted ICT training process the Ceduna community member would produce a short health and therapy DVD with the support of the enterprise owner and relevant community members. This research focuses on the final DVD produced, rather the participatory processes and activities surrounding its development. As this was essentially an exogenous targeted and transmission capabilities development project the next section

outlines a description of the exogenously determined and directed activities undertaken, the outputs and outcomes and participant feedback.

8.4.3 Description of activities

- Provide Ceduna community member (CCM) with a computer and software suited to edit and store digital video files
- Provide training on how to set-up and film interviews, edit using Adobe Premier Elements and burn to DVD
- Set up a suitable work space for CCM to continue working on his projects within the Ceduna Aboriginal Art Gallery
- Engage with enterprise owner and family members in the interview/editing process
- Assist CCM in delivering a complete and edited version of the DVD to client and project funders
- Maintain a personal support network with CCM for future guidance

8.4.4 Outputs and outcomes

- Increased CCM's capacity to manage his own video projects through practical experience: filming, non-linear editing, managing digital files on a personal computer, and conducting interviews for documentaries
- Provided CCM with adequate ICT infrastructure, i.e., a new PC, and workspace to autonomously continue his projects
- Successfully involve enterprise owner and four other family members in the process of training CCM and the creation of his DVD
- Create awareness within the Ceduna Aboriginal community of CCM's skills and facility to manage similar digital video projects
- Deliver CCM's DVD to client and project funders

8.4.5 Participant Feedback

Throughout the seven-days CCM demonstrated high enthusiasm and motivation to capitalize on all training opportunities working in partnership, as well as

appreciation of the equipment. Over the short-term capacity building process, CCM consistently voiced the desire for follow-up training support for a second, more technical video themed around a visit 'on country' with community elders. He indicated awareness that a more ambitious project would require additional funding. CCM's client indicated her appreciation of the participatory engagement processes throughout the project, noting that her suggestions were acted on for video content, and that through the filming, singing and interview processes a number of her family members directly participated and contributed to the development of the video. She demonstrated appreciation at viewing the final video, indicating that with a previous DKCRC enterprise-based DVD production she had been interviewed and filmed, but unfortunately never saw the final product. This outcome raises concern for whose needs this former video project met?

8.4.6 Impact of Work

- Increased the human capital and resources of CCM to drive and manage their own digital video projects, and not rely on the technical services of external parties. This autonomous agency may flow on to future technology use. Indicative of empowered agency, CCM discussed the idea of filming people speaking in language to accompany the audio files with the manager of the arts centre, who also manages a digital language centre
- Increased opportunity for exposure of Aboriginal client's enterprise – through DKCRC events, within the Ceduna Aboriginal Art Gallery, and enterprise owner identified opportunities
- Demonstrated that collaborative partnerships between Aboriginal people and research institutions, such as the DKCRC, can deliver tangible community benefits to participating members as part of a negotiated benefit sharing agreement. This mutual benefit experience and outcome contrasts to the all-too-often common experience of an extractive approach and agendas of partnering research institutions.

While this partnered community development project occurred over a short period, the above discussion indicates the experiences and outcomes were relevant to the role of ICTs inquiry and participatory themes of this research. Table 8.3 below

summarises the key ICT related development agency elements of the Ceduna community PV project.

Table 8.3: The summary of key ICT-related development agency elements of the Ceduna community PV project

Ceduna Participatory Video Production Project				
Participants	ICT used	Participatory approach: 'Community directed & emergent'	Themes: Advocacy & traditional knowledge (TK)	Outcome
Senior male	Digital Video, DVD, digital photography	Decision making power, participatory dialogue, content selection, respected opinion	TK and livelihood documentation.	Empowerment through capacity building of ICT skills.
Senior women	Digital Video, DVD, digital photography	Decision-making power, participatory dialogue, content selection, respected opinion, inclusion.	TK Enterprise	Bridging: livelihood valorisation with exogenous parties.
Research fellows		Exogenous expert technical advice as needed (equipment and editing)	Facilitate technology interaction	ICT capacity development in participants

8.5 Conclusions

These minor case stories of two remote regional and one regional Aboriginal community ICT related experiences reflect an emergent approach to ICT interaction in development agency with dependence on exogenous expertise and technology. All three derived from an institution-community collaborative relationship and are short-term and targeted in their specific project orientation. The researcher's role and the development agency agenda were exogenously determined and driven. Nevertheless, observations and participant comments indicate that the ICT interaction experiences were valuable awareness raising processes for the

participants. The particular exogenous driven elements of these case projects are useful for comparison with the EnCDD approach of the Ngalia case.

Chapter 9

Analysis

9.1 An emergent and adaptive pluralist approach to development

This chapter addresses the self-reflexive dimension of the research. It encompasses analysis, synthesis and reflection of the contextual and dialogic dimensions of the case-based experiences to identify multifaceted insights pertaining to the research questions. The unfolding, evolving, diverse and long-term character of the community's endogenous driven exploration of ICT4dev demonstrates the reflexive awareness of key Ngalia people of the imperative to self-drive the shaping of their local reality. This research acknowledges the complex contextual factors that have shaped the contemporary development realities of the Ngalia people who, within three generations, transitioned from a culture of traditional bush to town peoples. During this 'bush to town' period, powerful exogenous agents and a colonial culture removed many of their historical 'freedoms' (Sen 1999) thus removing the advantages of the deeply embedded traditions of the Ngalia ancestral way of life on country. Chapter 6, the 'contextualising dimension' (Saukko 2008), discusses how the imposition of colonial cultural values and livelihood assumptions meant that pre-existing Aboriginal cultural values and livelihood capacities came to be deemed marginal and disadvantaged, casting the Ngalia as deficit in prevailing development terms.

This involuntary transition meant the Ngalia people became plagued with what Sen (1999) describes as 'unfreedoms'. These unfreedoms are associated with their systematic and societal disempowerment, marginalisation and constrained ability to make decisions and engage in development opportunities as based on *their* reasoned agency. The background material affirms that the Ngalia peoples share with many international Aboriginal peoples the normative 'deficit' and impoverished interpretation of their development reality and resources. The contextualising dimensions of the case illustrates why for Chambers (2010) these peoples continue to 'face conditions that can be described as local, complex, diverse, dynamic, uncontrollable and unpredictable. Living is an improvised

performance. Continuously they adapt to changing conditions and those conditions change faster than ever' (p. 17).

Despite this involuntary 'bush to town' colonial imposition, Ngalia ontology has survived. Since colonization, the 'disadvantaged' interpretations of the Ngalia community worked to challenge and discredit Ngalia local knowledge, values, capabilities and identity. Despite this, the deeply embedded and meaningful character of the Ngalia way of life meant a high social value for local knowledge, values, capabilities and identity sustained. The historical assimilation efforts of Australian society contributed to Ngalia concern for the trustworthiness of partnerships and relationships. Early observations identified low levels of trustworthiness, even anti-trustworthiness in the Ngalia perceptions of exogenous attempts to reduce Aboriginal disadvantage. Perceiving their culture under threat and de-valued, the community adopted the 'secrecy as a strategy of survival' (Lieberman 1985) tactic, and acted autonomously to pursue EnCDD.

Under these dire 'survive' or 'perish' socio-political circumstances, the adoption of an asset-orientated approach to local knowledge, local values, local capabilities and local realities made strategic sense, along with the need to experiment and explore ways to incorporate these as a local development advantage. Ngalia support for the research reflected recognition of the imperative to leverage Ngalia equality of agency in development decisions and actions; and that such an approach would best incorporate their needs and address their lived realities. Thus, the Ngalia commitment for EnCDD agency was a 'radical' socio-political action. Inevitably, both costs and opportunities are associated with the adoption of radical action.

Endogenous development relies on local participation (Ray 1999), and 'internal' human capital to facilitate development activities. The key Ngalia internal human capital was the community participants and the researcher. Table 7.1 identifies the key development areas for a community to explore through participatory action and ICT interaction for an endogenous approach to identify meaningful outcomes:

- Needs assessment rationale as based on local cultural specificities, practices and lived realities
- An asset and integral 'way of life' view of community knowledge, resources and capabilities
- An ascribed solution – locally determined agency
- Participatory and community driven methods
- Transformation – long-term, meaningful and liveable

The Ngalia case affirms how, over the seven phases of ICT-interaction, the community endogenously explored and reflected on vital lessons related to these key development areas. The pro-active Ngalia decision indicates from the very inception it was recognized that that *they* were best equipped with knowledge on their particular realities, aspirations and priorities, and that engagement in community-driven participatory action would best drive decisions and actions to explore their reasoned agency.

This radical Ngalia action concurs with Chamber's (2010) assertion that a minority of endogenous actors have the insight into how to position their 'local advantage' within the mainstream reality driven by neo-colonial and neo-Newtonian ideologies. This view acknowledges the rare value of such radical action and the importance of Aboriginal leadership for EnCDD. The rarity is pertinent in light of the historical and powerful neo-colonial development ideologies associated in the mining and resource sectors as experienced by the Aboriginals in the Goldfields region. Endogenous commitment to Aboriginal community capability as an asset is an important socio-political action for the disadvantaged and marginalised with push-pull implications for wider societal negotiation of the pluralist exogenous and endogenous agency views on development.

From the late 1970s to early 1980s the Ngalia participants had used ICTs as endogenous development tools in the form of audio recordings, digital word processing, and photography to archive and manage their local community knowledge, and communicate land and resource usage issues. During this time, other Western Australian Aboriginal groups undertook similar practice: e.g. the

short film *Munda Nyuringu* (1983), co-produced by now deceased Aboriginal activist Robert Bropho, communicates issues of systemic Aboriginal disempowerment through alienation from the economic activity generated from mining activities in the Goldfields Region (see <<http://trove.nla.gov.au/work/34472561>>). Similarly, Aboriginal groups in central Australia began to interact with ICT (see Michaels 1994; Ginsburg 1991, 1993, 1994).

The seven project phases involve a number of experimental, adaptive and interrelated examples of Ngalia ICT interaction as EnCDD agency tools. Each of the phases emphasizes how community participation was a key agency element. As such, the seven Ngalia ICT interaction phases align with Chambers' (2010) notion of 'adaptive pluralism', enabling the marginalized and disadvantaged community to express and understand the 'local, complex, diverse, dynamic, uncontrollable and unpredictable realities experienced' (p. 3), and from their position. Accordingly, each of the phases involved diverse ICT-related projects, plural participants, ICTs used, participatory approaches, targeted development themes, and outcomes. The narrative of the seven phases encapsulates the 'dialogic dimension' (Saukko 2008). With each project phase, vital self-reflexive lessons and outcomes resulted for the community and the researcher. In turn, the experiential quality of each project informed self-reflection on decisions and action, for subsequent project participatory methods, ICT choices and project objectives.

These experiential examples of participatory methods underpin adaptive pluralism as a development paradigm: 'This fits with the realities of poor people as adaptive agents and with participatory methodologies seen through the lenses of technology and complexity' (Chambers, 2010, p. 3). In the Ngalia case, the lens of complexity articulates to the local, complex, diverse, dynamic, uncontrollable and unpredictable realities they experience as Aboriginal peoples living in the remote Goldfields region in the developed nation context of Australia. Their approach aligns with Andreasson's (2007) call for 'indigeneity' as 'a genuine communal effort to re-imagine and reinvent goals and aspirations for a better future' (p. 1). The community's ICT-interactions also emphasise what Hunt (2005) calls the soft or

local side of the enabling environment. Thus, the participatory ICT-interaction processes of endogenously driven indigeneity leveraged the community's recognition of local values, knowledge and resources as assets. The unfolding quality of ICT-interaction experiences reflect Chambers (2010) idea that 'Adaptive pluralism embraces, underpins and expresses ideas and practices of reflexivity, continuous learning, value and principle-based eclectic improvisation, co-evolution and continuous emergence' (p. 4).

The Ngalia, as EnCDD agents, reflexively interpreted their case experiences through a coherent and mutually supporting Ngalia kincentric pattern consisting of 'concepts and ontological assumptions; values and principles; methods, procedures and processes; roles and behaviours; relationships; and mindsets, orientations and predispositions' (Chambers 2010, p. 3), i.e., their decisions and actions made perfect logical and meaningful sense to them. The adaptive and pluralist Ngalia interpretive pattern derives from living with an ancient connection to a specific geographic location and deeply embedded Aboriginal way of life as adapted to a post-colonial context. This thesis aligns with Chambers' contention that as such adaptive pluralism potentially 'offers win-win solutions and generates an agenda for agency' (p. 4). The emergent quality of mainstream understandings of the adaptive pluralist development paradigm suggests further analysis and reflection of the Ngalia case study experiences might identify general insights for policy and development practitioners. Thus, the following sections concern reflection on identifying the lessons the wider society can learn from the Ngalia experiences.

Drawing on the development concepts of 'adaptive pluralism', 'indigeneity' and recognition of the importance of the soft side of the enabling environment, the following sections analyse, interpret and discuss each of the key ICT-related development agency elements of the case study experiences as these variously elucidate on aspects of the Ngalia agenda for EnCDD. Each section elucidates on the unfolding adaptive pluralism character of each of the ICT-related case experiences as they 'embrace, underpin and express ideas and practices of reflexivity, continuous learning, value and principle-based eclectic improvisation, co-evolution

and continuous emergence' (Chambers 2010, p. 4) through participation. The story indicates how reflexivity and continuous learning led to ongoing value and principle-based eclectic improvisation for the co-evolving generation of new ICT-related projects, which came to inform the future-oriented Ngalia EnCDD plan. The following sections discuss the key thematic issues, i.e. the participants; ICT used; participatory approach; development themes; and outcomes, as identified in the agency elements of the ICT related EnCDD framework as used to interpret the Ngalia case study experiences. The minor cases in Chapter 8 provide contrasting opportunities.

9.2 Participants

This section engages with the thematic issue of 'who was involved'. According to the *Human Development Report* (UNDP 1993), if people participate in the events and processes that shape their lives there is great potential to generate tremendous vitality and innovation for the creation of new and more 'just' societies. The seven different project phase stories are evidence of how participation in the events and processes that shape the lives of Ngalia people generated tremendous vitality and innovation. By contrast, the Aboriginal participants in the minor cases were either co-opted to participate or passively engaged in an asymmetric exogenously driven and expert-led process. Qualitative indicators of participation can be identified through stakeholder responses, and may relate to stakeholder perceptions, solidarity and mutual support within groups, and group conflict resolution (CIDA 1997). For Chambers (2010), participation relates to participants 'doing' things for themselves – interactively, appraising, analysing, actioning, learning, changing, monitoring and evaluating, not abstractly, but practically. The Ngalia story aligns with this exploratory 'dialogic' and 'doing' notion of participation.

Reflection on who participated during the seven phases identified a small, but diverse number of community participants involving a diverse number of families, with both men and women representatives participating to reflect a balance of gender perspectives, and different age-based representatives for intergenerational representation. The reasons and motivations for participating varied. However, the

participant enthusiasm expressed for project activities away from town and on traditional country was palpable. The change in the more reluctant participants was noteworthy, with those co-opted to partake positively changing their body language during travel to country, and once 'on country' becoming vital and enthusiastic actors. The communal sense of solidarity amongst participants 'on country' was significant. Indeed, the observable change from a negative attitude and hunched over body language to enthusiastic attitudes and upright body language inferred a positive shift in actor identity from the 'deficit' category associated with a life of disadvantage on the margin of town to a sense of being an integral 'asset', a valued member of the community. This positive change indicates the importance of context for active and meaningful Aboriginal participation.

In contrast, participant confidence and enthusiasm was reversed during instances of travel 'out of country', or to major urban centres, suggesting a regressive shift in participant view, symptomatic of their diminished power, capacity, status and authority when in what Chambers' (2010) calls 'neo-Newtonian professional environments', i.e. university and business-led events. For Chambers in these environments high value is attributed to the professional 'best practices' of standardisation, control, measurement, and precision. Without multicultural capacities, these values have no meaning for Aboriginal peoples. The positive behavioural shift in individual and collective actor identity and wellbeing when 'on country' demonstrates how the adaptive quality of 'best fit' approaches Chambers' (2010) draw on vital community resources that make participants feel valued and have something to contribute. This finding indicates that ICT practitioners or facilitators should account for how the physical and social environment influences a participant actor's feelings of self-efficacy and identity when implementing a participatory ICT activity with disempowered people.

Drawing on Chambers' (2010) insights, when in town these disadvantaged participants experience life as local, complex, diverse, dynamic, uncontrollable and unpredictable. Alternatively, when 'on country' strong feelings of trust, reciprocity, shared values and practices drive coherent and mutually supporting and shared

Ngalia kincentric experiences. Early observation of the positive impact of Ngalia participation 'on country' informed the researcher on how this strategy works positively to reframe individual identity and strengthen community bonding. In turn, important social and cultural capital implications of this reframed identity and bonding for the further project-based community action were apparent.

Elder concern for a community 'on country' issue drove the initial PV project. As is common community practice, younger children and youths accompanied the participant adults. The participant children and youths were not directly engaged in the primary outcome of the activity, but partook as sharing a special kin-group event. The shared communal and positive quality of time spent on country created a valuable intergenerational engagement opportunity, a chance for the young to be engaged in a different context to traditional elements of cohesive and mutually supportive pattern of the Ngalia 'way-of-life'. This early observation suggested that projects 'on country' involving three generations of actors had the potential to strengthen intergenerational relationships and knowledge transfer. As 'passive' participants, the children and youths observed adult participation, roles and ICT interaction as related to the project's advocacy and NRM concerns. The lessons for the community had significant implications for the greater involvement and success of the young in subsequent projects.

While the focus of PV Project 1 was on the participation of adult Ngalia community members, the serendipitous meeting of an elder of another kin-group on country broadened participation, working to strengthen cross-kin-group solidarity through sharing perceptions of community issue on country. In turn, capturing the elder's participation on video demonstrates the value of bridging cross-kin group voice and action. This cross community solidarity was noteworthy because of historical 'humbug' or conflict. For broader kincentric communities, the participation of culturally appropriate representatives on country may create the opportunity to build cross-community trust and reciprocity, and reinforce the shared and mutual quality of Aboriginal values and practices.

9.2.1 The participatory role of leadership in EnCDD

Community leaders have a vital intermediary and facilitator role to drive EnCDD. In the Ngalia case, key lead actors represented a vital multicultural 'local advantage' and community asset in the inception and driving of the endogenous approach to the ICT-related development initiatives. Key participant actors hold significant leadership roles within the Ngalia community, and other Aboriginal and non-aboriginal groups throughout the Goldfields region. Aboriginal leaders hold particular and specialist knowledge on traditional law and protocols. Coupled to these traditional leadership roles, key participants possessed significant cross-cultural experience, understanding and insight into the workings of the dominant society, and therefore, had awareness of the opportunities and costs associated with normative 'equality of reason' development approaches.

A key Ngalia leader had a greater ICT experience than any other participants, and perhaps more than the wider Leonora community, Indigenous or otherwise. Apart from this ICT capacity, this actor has unique Western professional capabilities and post-graduate academic qualifications in agribusiness and anthropology. Hence, these high-level and multicultural capabilities make this Ngalia leader a vital participatory resource to facilitate the community's endogenous agency, and engagement with the critical exogenous agents. Acknowledgement of this unique, high-level and multicultural Aboriginal capacity played accounts for the inception of ICT interaction as a participatory development strategy, especially within three fundamental factors of participant interaction:

1. Understanding opportunities
2. Building trust
3. Applying technology to meet participant' needs

It is apparent that this unique leader had the capacity to identify opportunities to use ICT within their EnCDD initiatives, to communicate these opportunities to other community members, and with his high personal and ascribed community trust mobilise supportive participant engagement in project experiences and reflection.

This powerful participatory leader role contrasts to that of the researcher's participant facilitator role in the Ceduna case (Chapter 7). In this project, the researcher acted as an exogenous expert facilitator contracted to further develop the PV and computer skills of a key Ceduna participant. This contracted and targeted capacity development agency was driven by an externally determined and prescriptive response to a pragmatic community need as interpreted by the partnering research institution. The project's limited ten days of ICT capacity development and technology transfer were not ideal, though meant to build on Ceduna community's enterprise activities. From the researcher position, this project work was frustrating. While the key participants were appreciative of this investment, the limited time and conceptualisation of the project meant only short-term outcomes were observable.

The participants in the Collie and Titjikala had limited relative ICT experience, which also meant they were dependent on exogenous experts to facilitate and drive their agency. Similarly, a limited time made achieving meaningful project outputs problematic as the exogenous facilitator was required to rapidly understand the complexities of community realities, and prescribe appropriate ICT applications to fit the agenda of participants in an essentially low trust and contracted context. The expedient quality of this project's conception meant that there were risks associated with the constrained exogenous insights into community capabilities, realities and objectives; exogenously conceived solutions; the appropriateness of ICT choices and interaction experiences; and limited opportunity to build meaningful relationships and trust. These risk issues have implications for project ownership, outcome and sustainability as was apparent in the participatory quality of the Collie and Titjikala projects. If participants fail to see how an ICT application may help achieve goals there will be only limited 'buy-in' to decision-making and ownership.

The contrast between observations of participant experiences and actions in the Ngalia case and the minor cases support the contention that for marginalised agents to adopt ICT and to increase the potential for its innovative application, a

key trustworthy community actor with higher levels of ICT knowledge and capabilities is a vital 'local advantage' to mobilise endogenous community decision and action. Failure to engage and mobilize trusted expertise reinforces a disempowered relationship, and a dependency on exogenous experts. This contention highlights the cultural appropriateness of approaches to training and networking so the requisite multicultural and adaptive technical capabilities required can be found within an Aboriginal community. The Ngalia case emphasises the pivotal role of a local with multicultural and ICT capabilities for the identification of opportunities and the endogenous mobilisation of participatory to meaningfully transform local community disadvantage into local advantage. Arguably, the case's successes also reflect the length of time invested by the researcher and the quality of relationships he developed with the participants over that time.

Key agents can, however, pose risks to development activities. In the same manner that 'elite capture' (Fukuda-Parr, Lopez & Malik 2002) reduces the individual agency and collective output in mainstream community based development activities (see Platteau & Gaspart 2004), key agents may use their power to hijack the collective development agenda to suite their wants and needs. This behaviour was not observed. However, the power of participants with high community status means facilitators need to be mindful of elite capture and the impact of this on participant agency. Indeed, reflection suggests there is a grey area between a key agent representing the concerns of the community, and a key agent shaping the concerns of the community.

9.2.2 Youth participation

Observations highlight the powerful connection between Aboriginal youth participation and ICT interaction. This connection was evident within Ngalia projects. Youth, who were previously disengaged from many aspects of their culture, as well as the adult-driven development initiatives, became re-engaged through interactions with ICT. Early recognition meant that youth participation became increasingly targeted in project activities. The self-driven agency of the youth demonstrated a natural attraction and affinity for video as a mode to

communicate and learn. The youth had prior ICT exposure through school and popular culture. Similar to the multicultural advantage of key adult participants, this youth ICT affinity worked as a 'mobilizing local-advantage' asset rather than 'overcoming Aboriginal disadvantage' deficit.

The Ngalia youth's past ICT experience and capacity framed their observations of the less familiar elders being shown fundamental aspects of camera operation, or management of the footage. The youth's familiarity empowered their self-driven agency and this initiative reframed the adult participants' perceptions of local youth from a negative deficit view to that a positive community advantage. Indeed, the key mobilising role of young people at the intergenerational and inter-community cultural interface, in engaging with and maintaining their culture and associated knowledge within community-based organizations is noteworthy (Singleton et al. 2009).

9.2.3 Reflections on the participatory role of the researcher

In contributing to the participatory role of EnCDD agency, facilitators are required multifaceted capacity for performative and interactive improvisation and invention. They must draw on, combine, and invent methods and approaches on an ad hoc basis for the participant context and purpose (Chambers 2010), hence, the apt nature of the 'bricoleur' label. During this research, the researcher made a conscious effort to reduce the overt facilitator characteristic of his participatory role, adopting a silent observer or an equal problem-solving agent. The aim was to minimise the participants viewing him as an exogenous expert, and to increase participants' empowerment to engage and experiment. Additionally, the aim was to gain 'insider' trust and exposure into knowledge on the existing ICT interactions for EnCDD. Indeed, as a recent graduate with an honours degree in aquatic science, at the inception of the project, the researcher possessed limited ICT experience. This adaptive reality meant he could identify with the uncertainties, difficulties and challenges faced by participants as they interacted with the ICTs. This mutual circumstance meant he shared with the participants the desire to explore and learn reflectively acting to problem solve in partnership with the participants.

9.2.4 Conclusions

Analysis on the thematic concern of participation identifies several issues:

1. The geographic and socio-cultural context matters, i.e. in town versus on country.
2. The engagement of diverse community representatives in action, i.e. plural age, gender, social status participants can create targeted and serendipitous opportunities.
3. Targeted and non-targeted participants are important to development outcomes.
4. The quality of local Aboriginal leadership matters, i.e. cross-cultural capabilities create advantages, and leaders need to be aware of the problem of elite capture.
5. The researcher's role as trusted participant and facilitator and the length of time invested by the researcher impacted significantly on the levels of community participation.

9.3 ICT used

This sections discusses the thematic concern of the ICT used, with focus on the thematic issues related to – what technology was chosen and why. The Ngalia story reveals that the participants interacted with a diverse range of ICTs that related to community needs, issues and goals. The following ICTs were used:

- Participatory video (PV)
- Participatory photography (PP)
- Personal computing
- Web 1.0 (websites, internet searching)
- Web 2.0 (social networking, VOIP, video streaming)
- Digital databasing (cultural sites management system - CSMS)
- Mobile telephones

9.3.1 Participatory Video (PV)

PV was the most frequently used ICT with observations in all four cases. Several factors account for this frequency: the relative cost (low), inclusiveness (broad), and application (wide). These PV experiences align with international development trends. With the availability of lighter, cheaper and higher quality video cameras, coupled with the reduced cost of personal computers and non-linear video editing software, the frequency of PV initiatives rapidly spread throughout the developing and disadvantaged worlds (Chambers 2010). PV initiatives can be established for very little money, engage a wide sector of the community, and be applied to an almost infinite range of agency related issues. Unlike many of the ICTs listed above, PV requires little prior participant experience.

The use of PV as a communicative tool was previously only accessible to the powerful, technically advanced and wealthy. However, rapidly evolving ICT advances meant that in 2011, anyone with a smart mobile phone, such as an Apple or Android system, can storyboard a narrative, film, and upload it to a social media site for broadcast and content dissemination. This interactivity has not gone unnoticed by people in developing economies, or those of repressed, disadvantaged, or marginalized existence (see Chambers 2010).

Affordability is a significant adoption factor for many Aboriginal groups in remote Australia at the individual, household, kin-group, or community level. During the fieldwork phase of this research project, very few private or Government grants were available to Aboriginal community groups for capital purchases, such as video cameras, lenses, microphones, memory cards, cables, and tripods. Thus, the more readily accessible utility of equipment, such as a personal smart phone, is a valuable tool to communicate local issues to external actors and decision makers. Coupled with the issues of accessibility and affordability, particular technology advances, such as the high definition digital single lens reflex cameras (HD-DSLR), now allow for the production of potential high values on low budgets.

The Ngalia case demonstrates the potential of PV to engage a wide range of community participants and overcome the often-discriminatory barriers of age, gender, experience, literacy levels, or language. Indeed, overall the inclusive character of participation in PV interaction strengthened group 'solidarity' and empowered the young to work with adults and elders on agency issues. Similarly, those with little or no PV experience were able to participate at some level, either communicating their message to the camera, or in a technical production role. The literacy issue becomes a less relevant participation barrier, allowing those with either low competency or confidence levels to engage in activities.

Similarly, PV usage helped overcome the language barrier issue. For example, one elder in the Ngalia case who, due to his dialect, accent and the speed at which he spoke, was difficult to understand resulting in his regular silence at community meetings. Thus, despite being an informed, experienced and a respected member of the community, he was unable to contribute to collective dialogue. This individual was interviewed in a PV project, capturing his views on the impact of mining companies operating on traditional lands and livelihoods. The interview was translated and subtitled enabling the PV content to be screened at a national anthropology conference in Canberra. PV enabled him to find his 'voice' and contribute to this community initiative.

PV can work as an introductory technology for further ICT interactions. The Ngalia case demonstrated that because of its (low) cost, (broad) inclusiveness, and (wide) application, PV acted as a practical introduction to mobilise a complex suite of ICTs. With trust in the technology and experience gained, community members may feel comfortable experimenting with a wider and complementary range ICTs. Finally, moving beyond PV as a one off expedient project tool, it can work to mobilise long-term livelihood opportunities. This means that through a single PV project activity a group can realistically identify how this can contribute to larger scale social change (LaFlamme, Singleton & Muir 2012).

9.3.2 Participatory photography (PP)

PP was observed within the Ngalia, Titjikala, and Collie cases. Like PV, the increased affordability of digital cameras and the removal of the need for photo development facilities have increased the relevance of this technology to disadvantaged and marginalized peoples. Within Ngalia projects, a digital SLR camera was shared among participants during field-based activities for individuals to capture key themes of the trips. These images were then viewed by participants, evaluated for relevance to shared community initiatives and used as visual resources for the community. Photographs were either stored on computers (or external hard drives), or printed. Digital images were used to represent various aspects of Ngalia development agency, participation of various individuals, and records of field-based activities. On many occasions, participating youths used digital cameras as an enabling tool for project interaction. Youth, due to gender or cultural restrictions, i.e., uninitiated, were excluded from participating in more adult-centric aspects of projects, but were able to use cameras to report back to adults on what they had learnt during field-based activities, or to visually communicate meaning and value of spending time on traditional lands.

PP provides individuals with the power to democratize image-making dynamics and show and speak their own realities (Clover 2006). Clover links the process and output of PP to explore issues of power and identity within a group of marginalized homeless youth, and concludes that the project participation empowered the photographers to become activist artists; to see and speak publicly through image, symbol, and metaphor; and to creatively address societal dichotomies, such as that between the private and the public spheres. Clover notes that historically, photography has been used by the powerful on the powerless and criticized on the grounds of inequality of power, politics of representation and the objectification of other. PP seeks to transform unfreedoms into freedoms through the transformative agency of participation.

Ngalia participants combined a PP process together with 'photovoice' methodology (Wang & Burris, 1997) to explore some of the issues of power and representation

noted above. Here, images taken through a PP process, along with those of the researcher were screened and selected by participants to represent collective action and participation in community activities. Each image was selected as a representation of 'matter' and 'meaning', and used as a visual means to communicate participant initiative, capacity, value and objectives to other members of the Leonora community. The images formed a visual narrative that communicated a lived reality, on which feedback was sought from the viewer. The 'on country' theme, as related to the Ngalia group's Ranger initiatives, was one example. Viewers were able to see what occurred during the activities, prompting dialogue between the viewer and the participant. This dialogue was then used to collect feedback in a survey on people's views on the Ranger group activities to determine if they would be willing to pay to join them on field trips to learn about country and culture. The use of images within this engagement process helped overcome individual participant barriers of shyness, confidence, historical conflicts, and entrenched mindsets to stimulate the much-needed dialogue between Ngalia participants and the broader Leonora community.

Images were also used as data within the Ngalia CSMS. Images that had been taken on specific field sites were uploaded and linked into the relevant site locations. The images formed the data-backbone of the CSMS, along with GPS readings, video files, MP3 files and digital maps. PP methodology was often employed to capture this data. Community images became valuable assets for Ngalia web sites and for associated reports. The community always maintained ownership of the image. This provided an opportunity for participant to contribute to broader project activities, such as research reports and networking, without the Western literacy pre-requisite.

9.3.3 Personal computing

The Ngalia participants used a number of personal computers (PCs) for project-related work, and to document related development goals and objectives. Hence, computers became a vital gateway communication technology to facilitate the more applied ICT applications. This gateway facility was also observed within the

three minor cases. Most importantly, PCs facilitated the majority of participant access to the Internet, now considered a broad, general-purpose technology and as basic ICT infrastructure (ITU 2010). Within the Ngalia community, PC's were used to facilitate the following interactions:

- Review, edit and dissemination of video and image data
- Design and access to Ngalia web material
- Communication via Web 2.0 technologies
- Management of the Ngalia CSMS
- Access to the Internet and associated web-based opportunities.

PC types versus effectiveness

PCs used by Ngalia participants ranged from 10 year old desktop PCs donated by a local mining company, to a number of current model Apple brand devices, with all networked at some point. Due to the high technical demands of many PC functions, such as video editing, digital image storage, and processing speed, the older machines, while still fully functional and networked, were insufficient to carry out the tasks. The newer Apple brand PCs were purchased to meet specific interaction tasks. Observing interaction between these two types of PC hardware revealed few, if any, specific project outcomes using the older PC machines, with all targeted community work achieved through the purpose-purchased Apple brand PCs. However, a number of participants were observed engaging with the older PCs for personal reasons, such as email, web browsing and gaming, in preference to the newer Apple devices. Despite Apple PCs being equally available, participants not given a specific project task on an Apple device avoided using them. To promote participant interaction with the Apple PCs, individuals needed training from the researcher, or an experienced community member.

Cost

In comparison to the high cost to run project initiatives in remote and regional locations, PC purchase cost considerations were relatively insignificant as an overall cost. During the study, a fully functional PC device could be purchased for \$1000 to \$2500AU, including much of the software for development tasks, such as word

processing, Internet browsing, video/image editing, and GIS data processing. This amount roughly equates to the cost of a one-week 4WD vehicle lease, as required for fieldwork, a return flight to the state capital of Perth, or a two-day consultant fee. While this cost may not be individually affordable, it could be readily considered through the support of a range of community grants and funding opportunities. This reality emphasises the important of cost effective PC hardware for collective initiatives. However, PC costs to the individual are still prohibitive and do not account for networking costs or maintenance. The majority of Ngalia participants relied on State provided welfare as a primary subsistence income, via Centrelink or the CDEP, varying between AUD\$400-\$600 per fortnight. Therefore, the individual cost to purchase a PC equates to one to two months' income. This is prohibitive, without accounting for costs of maintaining a power connection, Internet service provider contract, and other associated software and maintenance costs. For comparison, in 2005 market research identified that the purchase cost to a Chinese rural farmer of a 'basic' computer was equivalent to three months income (UNDP 2006).

Hence, this research contends that community organizations, such as the WCC, provide marginalized Aboriginal peoples with the opportunity to engage with ICTs at a higher level, enabling individuals to overcome relative cost barriers. Community tele-centres also provide this service role, but do not permit the same privacy, choice and decision-making of cultural centres. Tele-centres, such as the Leonora community tele-centre, are pay per use, prohibit users to add software to machines, or store data. This reality affirms the importance of Aboriginal community cultural centres to provide valuable 'freedom' agency and development opportunities.

Security

Security of capital infrastructure, such as computers or cameras, was a community issue. Equipment was primarily located on site at the WCC. During opening hours, the participants, community members, and the general public had access with implications for equipment security. Equally, at night the Centre, while secure, had

no formal security system and could be easily penetrated. The Ngalia experienced theft during the case period with a portable hard drive containing several projects worth of digital video footage lost. As the Ngalia PCs housed much data, information, and knowledge, i.e., their key assets, there was a substantial risk through theft or damage. This risk was countered by backing up documents were applicable and storing them in separate locations, and more latterly through the use of Web2.0 applications, such as Dropbox, to remotely store data. The Ngalia CSMS was housed in a remote server, overcoming risks via physical theft.

Training and skill building

The issue of training was significant across the range of Ngalia development activities. However, the aspect of 'capacity to interact' with such technology must be accounted for. While strong methodologies exist for the participant usage of video and photography (see White 2003; Lunch & Lunch 2006), enabling rapid and strategic ICT interaction, and in ad hoc circumstances, the same strategies became difficult to apply to PC usage. A high number of Ngalia participants had low levels of computing experience, especially actors over 35 years and, especially the men. Alternatively, many women gained ICT experience through paid and unpaid health or community services work. This lack of experience meant that PC usage was not as evenly spread across the age-based groups as were with other ICTs. This disparity can be attributed to several factors. Firstly, despite rapid progress in the ease of PC use over the last decade, they still require substantial levels of operational experience. This barrier limits participation to those who either already possess such capacities, or those who have access to training. Secondly, unlike PV or PP, it becomes more difficult to embed within field-based activities, due to the physical requirements of the technology, as related to mobility, power, and fragility. You cannot hand someone a laptop with little or no experience, provide ad hoc training, and have them apply the device to a spontaneous task as you might a digital camera, video camera, or possibly even a GPS device.

For Aboriginal community groups to realize the benefits from PC interaction they must have access to levels of specialized training as afforded by mainstream

Australian society. Of all aspects of ICT training, and in the context of remote Aboriginal communities, applied PC training is the most fundamental training need. Fundamental PC skills are requisite for further Internet based development opportunities. As a fundamental ICT tool, the PC represents a gateway to the nexus of Internet opportunities as now articulated to a range of ICT connectivity devices, i.e., technical mobile phones and similar web-browsing devices, such as the iPad and other propriety brands.

Impact

The primary impact of PCs within the Ngalia case was that they facilitated the majority of other participant ICT interactions, and that these interactions are considered to have resulted in a range of positive outcomes. Similar observations occurred in the Ceduna case and to a lesser degree in Titjikala. Little formal PC usage was noted within the Collie case, which made it difficult to expand initiatives into community web page design, participant video editing, and cultural databasing. PCs were utilized in almost every instance of Ngalia participant ICT interaction, and were of equal importance as the Internet to leverage participant benefits.

Recommendations

It is evident that PCs were important in Ngalia ICT interaction, and the community perceived they contributed to valuable outcomes. The Ngalia community experience emphasises an endogenous community organization has an important role to facilitate computing related opportunities for remote Aboriginal people, enabling individuals to overcome cost and home security issues. While mainstream community tele-centres offering commercial whole-of-community access are a well cited objective of many global political organizations, and an official target of the World Summit on the Information Society (WSIS) (see ITU 2010), the role of more targeted and specialized community-organisations in facilitating PC access should not be underestimated.

9.3.4 Web 1.0 – websites, Internet searching

When the Ngalia community were first contacted some members were interacting with Web1.0 services, best described as one-way web-based information access, static web pages, and HTML email. Web1.0 is characterized as an information source, while Web2.0 is user-interactive, and evokes a participatory culture (Chambers, 2010). The primary example of Ngalia Web1.0 adoption was their original community website, providing a hyperlink into the Ngalia Foundation Appeal page at the NTWA. For the two Ngalia participants who created the page, the development and maintenance was relatively simple without any external assistance; an autonomous agency characteristic of Ngalia activities pre-researcher contact. However, subsequent Ngalia Web pages required significant external expert assistance to both develop and manage, and this marked a shift in perceptions of external expertise, and assessments of how to utilise such skills without compromising the ownership or decision making aspects of initiatives.

Ngalia participants utilised web-based search engines (Yahoo, Google) to source information on the PC's installed at the WCC. A poignant comparison between Ngalia Web1.0 and Web2.0 interaction phases related to the process of disseminating community views and news. Within their Web1.0 phase, Ngalia participants relied on three digital information dissemination pathways, to share a view, message, or news item to stakeholders or decision makers:

1. Email
2. Formal media outlet (online newspaper)
3. Community Web Page

Email targets a recipient(s), and the volume of email means interactions soon are buried by the inflow. Email interaction is effective for exchanges between individuals, provided they have the language and literacy skills. The narrowness of recipients and life of email meant for the Ngalia community the effectiveness of email as a community strengthening and advocacy tool was limited except for targeted interactions with representatives of relevant agencies.

The Ngalia people engaged with mainstream media sources for outreaching, but noted that this is a complicated process. As marginalised Aboriginal peoples living in a prevailing discriminatory mainstream media context, gaining positive access to mainstream media made this outreaching challenging. This reality meant that all-too-often mainstream media outlets would not support the community's views, news, and advocacy actions. If they did gain access, there were the risks of misinterpretation and misrepresentation, or their successes appropriated by external agencies.

The Ngalia web page was a valuable community representative vehicle with the relatively sophisticated communication technology an important reframing step to leverage community's pride in Ngalia identity. The site opened individuals to the potential for collective self-driven agency. However, the technical nature of this application constrained community members' ability to update page content. The site could broadcast Ngalia views but these remained static for months at a time, meaning they failed to sustain the initial empowerment and positive reinforcement of the more dynamic possibilities of endogenous agency. Despite this constrained community outcome at this early stage of web-based interaction, the advent of Web2.0 technologies opened the door to effective web-based advocacy and development agency for the community.

9.3.5 Web 2.0 – active web sites, blogs, facebook, VOIP, video streaming, digital media articles

Chambers (2010) identified the revolutionary implications of Web2.0 technologies for community development:

With Web2.0forDev, and it's cornucopia of potential through email, internet, video conferencing, participatory GIS, mobile phones, SMS, blogging, Twitter, and beyond, a whole new domain of participatory interaction has opened up... it illustrates the runaway empowering potentials of new combinations of technology (p. 29).

Web2.0 is characterized by its ability to promote new, more informal approaches to knowledge and information sharing, transforming from top-down and one-way to more participatory and interactive communication: one that typically utilizes tools

that are 'free', or indeed low cost (Ashley et al. 2009). This new ecological and multifaceted interactive capability marks a distinct period from the linear flow of Web 1.0 of the 1990s to early 2000s. Prior to Web2.0, professionals held the power of media authorship, dissemination and commentary.

Web2.0 has been used in numerous international development applications (Ashley et al. 2009), contributing to the emergence of 'participatory Web2.0 for development', or simply 'Web2.0forDev' bodies of knowledge. While Web2.0 refers to web services that improve information-dissemination and the production of content for development through collaboration, Web2.0forDev targets the active use of these services for development outcomes (Ashley et al. 2009). The dynamic interactive characteristics of Web2.0forDev increase opportunities for more informal, interactive, transparent, and accountable means of communicating (Chambers 2010).

The researcher facilitated and observed Ngalia participant engagement with a number of Web2.0 tools for development outcomes through activities linked into the WCC, and through their advocacy and social development initiatives. There were a noteworthy number of broad community outputs and achievements, with an identifiable increase in the capacity of the community and individuals to communicate local and outreaching positions. This outreaching capacity meant that there was also a qualitative improvement in interactions for community feedback or support on local issues. The improved and multifaceted quality of Web2.0 interactions and agency worked to leverage Ngalia autonomy and empowerment. Through the utilization of Web2.0 tools within the WCC, the elder participants pursued were four strategic development agendas:

1. Meaningful engagement of Aboriginal youth in an intergenerational process of cultural learning and revitalization, based around TEK and TK.
2. Facilitate an increase in youth participation in – and contribution to – the greater Ngalia community development strategy.

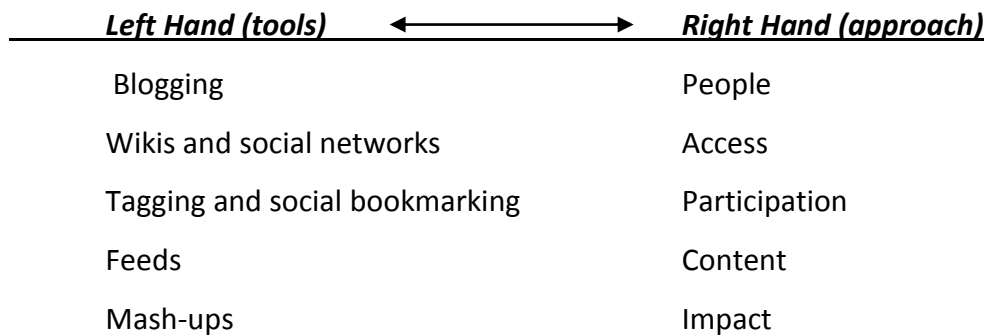
3. Increase endogenous capacity to communicate with and influence external decision makers, through reducing Ngalia people's reliance on exogenous (top down) information dissemination and interpretation pathways.
4. Manage cultural assets such as heritage/geological, ecological, and socio-cultural knowledge.

These four development agendas were mobilised by the endogenous application of specific Web2.0forDev tools including:

- The creation and management of a number of community blogs used to raise local issues;
- The creation and management of several web pages using freeware type design software;
- The creation and management of several digital media sites to display community produced videos;
- The creation and management of several social networking sites, e.g. Facebook and Twitter, to communicate local issues and create awareness and support for these issues; and
- The design of a community managed web page for the WCC to showcase community objectives and communicate successes.

The set of 'components' and 'considerations' for effective Web2.0forDev was presented at the 2007 Web2.0forDev conference in Rome (<http://2007.web2fordev.net/>) (see Addison, 2009). This thesis asserts that the application of such technologies as development tools necessitates reflection on the interactions between the tools and the approaches used to interact and engage with these tools. Addison (2009) represents this interrelationship as a two-hands framework, with the left hand representing the tools, and the right hand representing the approaches (see Figure 9.1). The framework highlights that one hand is no use without the other, or specifically, the 'fingers' on the left hand are no use in development contexts unless considerations have been made for how they can be used to address the 'fingers' on the right hand. Thus, a blog is of little use to participants unless they, or the facilitator account for how it may impact on people,

through access and participation, and what content would be required to achieve this change.



Source: Addison 2009, p. 21

Figure 9.1: Interpretation of the ‘two-hands’ framework of Web2.0forDev application

The two-hands framework is a useful interpretive tool to consider the Ngalia participants’ usage of Web2.0forDev. There were instances when the participants considered the relationship between the tools available to them, the outcome they sought from this tool, and the approach used to leverage this outcome. The example of Ngalia youth engagement through Web2.0 interactions serves to illustrate this (Corbett, Singleton & Muir 2009). The community aimed to increase youth participation in cultural activities as based on the premise that a proportion of the youth and early adults were disengaged from Ngalia cultural maintenance and this reality had advocacy implications for community continuity, and ultimately, survival. The community recognised that strategies were critically required to bring their youth back into the realm of cultural interest and participatory engagement. Through chance, an adult-centric conceived PV project inadvertently re-ignited a spark of youth engagement in culture, and revealed that a number of youth *were* expanding their cultural knowledge through elders and peer observation when ‘on country’. Consequently, a second and more strategic PV project was conceived to engage a group of youth to further empower them through recognition of their capabilities, increase decision making control, and create the opportunity to

reframe and disseminate cultural knowledge as a 'local advantage' to exogenous peoples through Web2.0 interactivity.

Recognizing the crisis level of impact of this disengaged youth reality, the Elders deliberated on *who* should *participate* in this exercise with concern expressed for a group of at-risk youth, many of whom had older siblings and peers with increasing criminal backgrounds. Recognizing that failure to engage the youth meant the community could lose two generations to cycles of antisocial behaviour, the exercise sought to diverge these youth from this anti-social 'rites of passage' pathway. The Elders deliberated on issue of access, and in turn, agreed that the youth had capacity in a range of required video skills to contribute. Beyond giving *access* to the video production tools, the Elders recognised that further training to expand their capacities was required. While the Elders maintained the authority to assess the quality and content of the final production for wider audiences, their aim was to strengthen the youth's participation, talent and capacity, with the hope they would create a positive community ICT product with wider dissemination opportunities.

Access to a wider audience could positively impact on external perceptions of their young people, too often regarded as problematic and dysfunctional. The community was aware that multiple video audiences were achievable through a number of social networking platforms including: YouTube, the Lonely Planet TV site, Vimeo, and Facebook. Mobilising this social network outreaching generated further media interest in the video and expanded its successes. This internal and external success enabled the Elders to recognize how this created additional reframing opportunities for external perception of the community's youth resulting in their support for the youth to partake in a number of on-line interviews and the community media releases about the youths' video and winning entry. In June 2011, some three and a half years after the youths created the video, it has strong web presence, and is accessible via the social media platforms hosting it, including the community web site. Significantly, persons unknown entered the Ngalia youths' video 'Papinmaru' on the National Library of Australia's TROVE register

(<<http://trove.nla.gov.au/work/35288573>>). It now forms part of the national collection on Aboriginal and Torres Strait Islander education, contemporary issue, culture and health (Dewey number: [305.89915](#)).

The participatory aspect in the project was promoted through leveraging the youths' decision-making power over most aspects of the project. Increasing aspects of project ownership through participant decision-making can increase the quality, 'meaning', and relatedness of the outputs in a PV project (see LaFlamme, Singleton & Muir 2012, forthcoming).

Participatory video (PV) is a strategy for social change, and ownership is the central variable to achieve that outcome. Ownership of information, and of the process of selecting which information is important and must be communicated to society, is a position of power for achieving social goals from greater freedom to greater control.

The youth had the capacity and power to shape and manage their project from conception, to production, to presentation. This agency process included the use of a range of technical equipment, e.g. video cameras, microphones, and stands, as well as a driver of an expensive 4WD hire vehicle, content and narrative. The youth deliberated and determined the content with Elders only suggesting that they select a narrative that explores the context and realities of Ngalia youth. This participatory approach is important to the overall PV process, especially as it sought to leverage and communicate an aspect of Ngalia lived reality positively mediated as a 'local advantage'. The whole participatory approach was underpinned by Elder acknowledgement that they do not share the same positionality and situationality as the youth, and thus, dictating explicit content would be inappropriate.

The Elders considered that the project could have a 'process' and an 'output' impact, reflecting on how the youth might benefit from the increased decision-making power, self-worth, empowerment video production process, and how to leverage on these benefits. They also reflected on the impact this process might have on the overall output of the project, the impact the output could have on other community-initiatives, through the broader dissemination of the video

narrative, which worked to reframe their youth as a community asset with Ngalia cultural skills and capacities. This example demonstrates how Ngalia Elders applied the tools and approaches of a specific Web2.0forDev application, and as a result, realised some powerful short and longer-term community development outcomes.

The multifaceted and deliberative participatory elements in this example were prevalent in the Ngalia case, but less noted in the Collie and Titjikala cases, where the exogenously determined agency processes meant that critical levels of community participation and input were not generated. This difference highlights that, while Web 2.0 tools are invaluable to many community-driven development activities, unless participants are truly engaged in the shaping and owning of the application, it is unlikely they will successfully realize the potential interaction benefits, and participants may even be deterred from their social usage.

Additional outreaching potential of Web2.0 technologies was realised through the Facebook page for the Ngalia Foundation Appeal with its National Trust of WA link. In 2011, the page had over 150 followers and was used to voice local issues affecting the Ngalia people. These issues related to socio-political themes concerning local Aboriginal people's relationship with local mining industries and/or Government departments, e.g., announcement for a public uranium awareness workshop highlighting local impacts and issues, or the outcome of a recent native title application hearing. There were a relatively small number of responses to these theme-related comments on the page 'wall'. While the Facebook page was able to house images, video, discussions, and link other Web 2.0 sites, it was most frequently used to relay short parcels of information, usually only one or two sentences long, such as community 'awareness' announcements.

It is difficult to identify if this web-based activity had any direct or indirect impacts beyond contributing to an increased web presence of Ngalia people, their issues and expanded Ngalia voice on primary search engines. When the word 'Ngalia' is entered into Google, a number of associated web links are presented, shared between web pages, news articles, Facebook pages, and academic papers. The

implication is that this diversified web presence leverages Ngalia voice and opinion on advocacy and socio-political issues, such as mining and native title. An additional case example of this impact is subsequently discussed.

The creator of the Facebook page moved the Web 2.0 tool to Twitter, and began using it more frequently than the Facebook page to disseminate community news and issues. *'It's [Twitter] quick, I can do it anywhere really, on my phone, in a meeting, in the field'* (PM1, personal communication, 18 June 2010). As of July 2011, 87 people followed the twitter account, many of who were professionally or personally linked to Aboriginal development issues. A snapshot of the community member's followers included academics, state and federal politicians, government public servants, community members, family and friends. Roughly one 'tweet' per week was made on average. Again, it is difficult to trace the direct impact of these tools on Ngalia advocacy. However, the immediacy and diversity of network created through Twitter interactions warrant further reflection and discussion on the issue of advocacy in subsequent section of this chapter.

9.3.6 Digital databasing – cultural sites management system (CSMS)

At the time of writing, the Ngalia CSMS has been running for three years. It houses a number of site entries, consisting of waypoints, maps, photos, audio files, video files and text files. Two community members made the majority of data entries with two other participants adding data since its inception. In light of the number of Ngalia people, this limited participatory involvement warrants reflections on claims of its value as a community resource. The CSMS was designed and directed the participant leader with multifaceted professional and multicultural identity capacity. Several additional kin and law-related factors are implicated in determinations of the value of the digital heritage management system as a Ngalia community resource. The participant leader's parents had historically used text, i.e., typewriters and later, computers, to archive Ngalia history. This documentation process was a secretive cultural survival strategy with the participation of other Ngalia people rarely sought. Both individuals had high-level traditional Aboriginal ceremonial status. Because of this traditional law and ceremonial status, the two

individuals held deep knowledge of cultural protocols. They drew on this knowledge to inform their archiving and preservation documentation process documentation as a resource to ideally facilitate future Ngalia interactions. The wider societal value of this important Ngalia archiving resource is affirmed by a number of their collective publications being archived in the Battye Library, with the State Library of Western Australia.

PM1, who largely designed the Ngalia CSMS in partnership with the design firm, is a son of these individuals, and thus, this cultural archiving history and participation in law ceremonies and cultural training have been significant in his personal formation. This background underpins his current Ngalia lawman leadership role. In addition, he is also a practicing professional anthropologist, educated to Masters level and this background underpins his high-level multicultural Ngalia and Western knowledge and capabilities. Both are vital to accurately record, manage and preserve Ngalia culture. Together, these capabilities are unique and a vital resource for the Ngalia community, and the broader Northern Goldfields Aboriginal peoples who share many cultural traits, i.e., language, ceremony, and oral history. Through the adoption of digital tools, such as the CSMS, he is able to offer future Ngalia participants a more interactive and adaptable interface on which to interact and navigate through documented Ngalia culture beyond the more traditional text-based archiving methods. Due to the cultural access restrictions of Ngalia protocols, all individuals, other than PM1, would have limited access to the CSMS.

Unfortunately, from a cultural protocol perspective, the requirement to have an overall manager of the system, results in PM1 having access to all levels of information, which breaks with the traditional protocols associated with prohibitions to access women's knowledge. However, overall participants did not view this concession as a major detractor from the many benefits of the CSMS. The CSMS also provides other regional kincentric networks of Aboriginal people with a case example of cultural knowledge management, of which they might use to shape their own cultural maintenance strategy.

The low level of Ngalia participation in this ICT interaction knowledge system is an issue. However, importantly because of the unique position and situation of PM1, Ngalia cultural knowledge is being maintained in a format that offers future generations of Ngalia community members a usable information and communication technology framework for cultural learning and knowledge management. Three factors influence low community participation levels:

1. Contemporary elders do not possess the necessary computing or database experience to manage Ngalia cultural knowledge, so find the technology system daunting and do not engage.
2. Many of the young adults capable of engaging the technology are detached from the process of cultural valorisation and learning.
3. Ngalia youth do not possess the required capacity to engage the technology.

Considering these factors, the Ngalia CSMS may yet prove a valuable knowledge management resource and interactive tool if the current youth develop and expand their ICT skills, or the presently dis-engaged young adults could become re-engaged with their culture. However, current elders would require substantial ICT training and technology access for it to become a viable tool to elders.

9.3.7 Mobile phones

There has been a dearth of specific literature on Australian Aboriginal mobile technology adoption (Dyson & Brady 2009) over the last decade, with more recent interest (see Dyson & Brady 2009; Brady, Dyson & Asela 2008; Sinanan 2008). This research project only considered the issue of mobile phone adoption (MPA) within the Ngalia case. The data gathered contributes insights into the role mobile technology serves within remote Aboriginal communities. The two primary mobile technology observations were: the widespread increase in MPA, and the usage of mine site signals to overcome a lack of regional signal coverage in remote regions. These two applications have significant implications for the participants' ability to achieve their development goals through the primary need to build and maintain the capacity to communicate.

Chapter 7 noted the dramatic increase in Ngalia MPA throughout the 5 years of researcher contact from 20 per cent of participants in 2005 to 72 per cent in late 2010. Prior to this increase, the dominant reason given for not owning a mobile phone was 'prohibitive cost'. Interestingly, wider Australian societal consumption trends showed a substantial increase in MPA from 24 per cent in 1996, to 72 per cent in 2002 (ABS 2007e). The low annual price inflation (0.9%) of telecommunication services, coupled with annual increases in wages and government welfare contributed to this MPA growth (ABS 2007e). This trend could account for the delayed 'trickle out' impact of remote Indigenous adoption, which began to increase among participants in late 2007.

Once established as a vital tool for the Ngalia participants, mobile phones became the primary ICT used for inter and intra community interaction. Up until this point, Ngalia peoples, and indeed, other Aboriginal peoples living in Leonora largely relied upon public communication resources, i.e., public fixed line phones. For a period, there was a card operated public phone at the disused community office at Katumpul Village, which was frequently out of service due to vandalism and technical complications. There were several public phones located on the main street of Leonora, but a significant distance from people's houses, i.e., 800m from Katumpul Village. This reality meant making urgent or late night calls problematic for both the village young and old. The route from the village to the public phones was long and passed two of the towns public bars. At night these bars became hangouts for the intoxicated and involved traversing through unlit lanes. For the youth, this exposed them to associated dangers, and for elders the distance was problematic. For this reason, some participants, mostly youth and elderly women, expressed relief at not having to access public phones at night.

Dyson and Brady (2009) note that as private ownership of fixed-line phones and home computers were very low, public ICT assets such as phones were of substantial importance to remote Aboriginal people. For the Ngalia community, a more independent shift occurred as owning a mobile phone in 2007 became more financially feasible. From then on there were at times several functional mobile

phones in any one house at the village, and the majority of individuals were willing to share these resources as needed. Sinanan (2008) argues that Aboriginal use of communication technologies supports the reciprocity aspect of a kincentric culture, a vital societal characteristic of an Aboriginal community. Women maintained the majority of mobile phone ownership in Katumpul Village. While men were observed to own phones, it was the women who more frequently maintained a service connection, but the size of the participant group was too small to make an inference to broader Aboriginal phone usage. Nevertheless, this observation suggests further investigation into the issue of gender and mobile phone service maintenance is warranted.

Two usage trends observed within the Ngalia participants concur with Dyson and Brady's (2009) insights, i.e., younger users, especially females, showed a preference for mobile messaging, i.e. SMS, texting, as a cost effective means of communicating. By contrast, the older community members, especially elders with poor eyesight, commonly caused by the high occurrence of diabetes among Aboriginal people, preferred to make landline calls. As phones were purchased from either the Leonora Post Office, which had a very limited range, or from Kalgoorlie, with price the main determinant, no preference for phones that facilitated easier reading and sending of messages for those with poor eyesight were noted. The availability of mobile devices that facilitate ease of use for low income or welfare recipients with poor eyesight as related to age and/or diseases, such as glaucoma and diabetes, has policy and industry implications.

The regular Ngalia usage of the mobile phone signals provided by mine sites was noteworthy. Aboriginal people in this region experience some of the lowest coverage rates in all of Australia, with mobile signals limited to major service centres, and mine site signals. As stated, when travelling 'on country' the Ngalia people were viewed mine sites as connectivity hubs. There are numerous mining operations scattered around the Northern Goldfields Region, especially between Leonora and Wiluna, which broadcast mobile signals. Hence, participants regularly used these signals to communicate their movements when away from town, and

travelling remotely for funeral or ceremonial purposes, especially if they suffered mechanical vehicle issues, which were often of poor to very poor condition. As of 2011, for the Ngalia people privately owned mobile phone communication has become the primary method of non face-to-face communication, replacing public phones around 2007. Therefore, mobile usage has a vital development agency role – to maintain relationships, share information and make decisions, indeed, in all inter and intra community communications.

9.3.8 Conclusion

The Ngalia case demonstrates the positive value of community interaction with a diverse and evolving range of ICTs in pursuit of EnCDD. The case illustrates a range of issues pertaining to the use of particular types of ICT and the multifaceted nature of lessons participants learnt through their use. Together, the diverse and evolving suite of ICTs used by the community illustrate a holistic interaction approach with ICT choices variable according to their particular development agency needs and goals.

9.4 Participatory approach

This section discusses the concern of participatory approach employed in projects with focus on thematic issues, e.g., what modes of community direction, decision and action were employed? To test the effectiveness of ICT as an EnCDD tool, the research initiatives had to feature endogenous decision-making and agency.

Participant agency direction is a pre-requisite of participatory action research (PAR) methodology, one in which marginalized groups set the research agenda, provide their insights into the problems they identify, and suggest solutions (Willis 2010).

The researcher's agreement with the primary case study meant that the decision-making power rested with community participants. Alternatively, in the minor case studies, agency direction was primarily exogenous with a targeted participant agency direction. In this context, 'direction' relates to the broad themes of individual projects, and the desire to ensure participants are positioned within the

project to best suit their wants and needs. The more specific decision making points within the projects are discussed in Section 9.2.

There is a significant contrast between the internally directed 'transformative' approach of the Ngalia case and that of the minor case studies, where the participatory agency related to an externally directed and 'transmissive' approach. The Ngalia case was conceived to increase local interaction and ownership, and shift the power of direction away from the exogenous experts to the conventionally powerless participants. Many aspects of the Ngalia case demonstrate how an endogenous and transformative approach enabled 'disadvantage' to be reframed as a local 'advantage' in the participants' minds. The contrasted transmission and transformation participatory case experiences emphasise how, guided by Ngalia ontological assumptions, the evolving EnCDD agency direction made more appropriate, useful and meaningful community sense to the participants than the short-term, targeted and exogenously determined agency direction cases. The various project phases illustrate how EnCDD agency direction formed the participatory framework to introduce ICT related projects, and how community determinations of local advantage motivationally worked to drive and shape the subsequent application of technology.

The evolving Ngalia project phases illustrate the multifarious ways the participant directed agency related to the emergent, but meaningful quality of development themes, i.e. advocacy, cultural maintenance, strengthening, and economic, through the evolving ICT-related activities. There were instances when the researcher provided input and assistance of a technical and professional nature. However, this transmissive-facilitator participation did not shift the community agency direction from the purview of the participants and their community development objectives.

In comparing the impact of the project direction in the primary and the minor cases, several inferences can be made. Firstly, in almost every instance there was a positive correlation between higher degree of 'community direction' and expression of 'participant approval' of both process and output achievements. In the instances

where the researcher had taken the lead to design, influence and shape ICT interactions, lower levels of participant approval were noted. Participant approval was noted in responses during participant observation and feedback, as well as inferences on future project directions. For instance, a project that resulted in the development of subsequent follow-on projects through endogenous direction would be deemed to house participant approval. One-off projects that received little appraisal from participants and were not used to build or shape further community projects were deemed to house low participant approval.

The first PV project conducted with the Ngalia Ranger group, the researcher, and research fellows exemplifies this pattern. It is useful as a practical example as it was replicated in separate community environments under almost equal environmental conditions. Ngalia participants were given timeframe control of the project from the onset, and the participatory opportunity to shape the project from the ground up, while the three exogenous 'experts' facilitated the ICT use in the form of PV. This agency direction was a requirement of the researchers' funding obligations. In this regard, the similar institution-driven Titjikala project failed to capture the same level of local direction from participants. Indeed, the three exogenous experts provided almost every aspect of project direction. Consequently, the limited short-term and institutionally targeted project output resulted and the Titjikala participants considered the project to be of little positive outcome, i.e., relevant meaning, for the community. The frustrations experienced by the researcher in his participant role as expert and facilitator crucially informed his need to reflect on this experience and explore the international development literature for alternative explanations on development agency and direction processes.

Reflection on this first phase project enabled the Ngalia participants to unearth a previously hidden pattern on TK transfer between generations. Through the project, they realized a valuable role for the youth within their development activities. They realised that the PV project gave them the ability to communicate their reasoned views on local water resources to exogenous decision makers. Capturing and advocating their 'voice' on the issue worked to internally strengthen the group as

verified by statements expressing feelings of empowerment. None of these participant identified outcomes of the PV project were foreseen or targeted by the researcher. Their realization was due to the participants' shaping of the direction of the PV project. The participatory and empowering quality of the experience enabled them to recognize that they were the best equipped to understand the context and the 'how and why' with which to explore the PV opportunity.

The PV project in Titjikala failed to capture local direction. Therefore, as the researchers were at that time void of the local ontological assumptions, they were forced to provide project direction as best they could under the circumstances. While arguably their targeted ICT outcome, as a media representation of community cohesion, was achieved, and the participants responded positively to the final product and its content, the project was observed to produce minimal longer-term opportunities and outcomes. As evident in the primary case, the initial Ngalia PV project acted as a 'seeding project', instigating the community to venture into a range of ICT related applications. Arguably, had thematic direction not been given to the Ngalia participants in this initial project, perhaps they would not have been confident to further invest in ICT activities? More productively, interaction and reflection on the experiences and lessons associated with the participatory processes in the PV project worked to lay down a more trusting relationship between the researchers and the community, a pivotal issue informing the next phase of project initiatives.

Concerns for the quality of participation in the Ngalia projects led the researcher to reflect on the risks associated with project direction. What are the risk implications for the transformative quality of participation for the whole community if key individuals dominate the decision-making and agency direction? The dominance of several participants in Ngalia project decision-making and agency is noteworthy and this endogenous 'elite capture' (Fukuda-Parr, Lopez & Malik 2002; Plateau & Gaspart 2004) has positive and negative implications for the quality of agency experiences and outcomes for other less directed participants. This endogenous elite capture can be attributed to several characteristic participant factors, such as

their formative background, level of education, communication skills, opportunity awareness, and community status and position.

Together these multifarious participant attributes underpin the high level capabilities of the key participatory informants. The key informants with higher-level multicultural knowledge and capabilities are best equipped to act as community leaders and role models within community development agency. As community leaders they are best placed to offer guidance, advice and proposals to other participants based on community consultation and deliberation. The risk associated with this elite community-based participatory structure is that key community directors may fail to capture the voice of more silent individuals and minority groups, alienating them from the empowering potential of collective direction. As a result broader community direction is not achieved and the project decision-making and agency is manipulated by minority objectives.

In the Ngalia case, observations and reflective assessment affirms that despite the pivotal participatory leadership role of key informants, collective participatory direction *was* communicated and captured in projects. The ongoing and evolving community support for and participation in subsequent projects indicate this assessment. Thus, through the diverse case study observations concerning the quality of participatory experiences, this research contends that, 'community direction' is a vital requirement of ICT interaction for Aboriginal group development agency. However, reaching a critical level of community direction can take time. Realistic assessments of the requisite time frame required for project initiatives to achieve a critical level of community direction may conflict with pragmatic exogenous measurement and efficiency oriented project logistics and commitment levels.

9.4.1 Local ownership – decisions making, and leadership

Li (2005, p. 133) stated that, 'it is thought that only when local communities are involved in decision-making, can their benefits be ensured and their traditional lifestyles and values respected.' While 'local direction' relates to participants

tailoring ICT application and project outputs and outcomes to their needs, 'local ownership, decision making and leadership' relates to the broader issue of equity. Ownership and its resolve, relates to how marginalized and disadvantaged peoples can use ICT to overcome knowledge and information related power imbalances. Local knowledge is increasingly viewed as an asset, and for Indigenous peoples, it may be their primary asset upon which they choose to drive their development. Therefore, negotiating and increasing the equity of ownership of knowledge assets is a prime process and outcome for ICT development applications. Many Indigenous groups maintain cultural protocols, i.e., restrictions, of knowledge access and dissemination. Hence, local ownership, decision-making and participant leadership should seek to address the cultural interface of knowledge as a restricted asset. Both ICT interaction and the community discussion on EnCDD facilitate greater degrees of local ownership, which stems from increased decision making and subsequent leadership in development initiatives. The role and importance of local ownership, decision-making and leadership within the Ngalia case is clear. The Ngalia people demonstrate an understanding of how endogenous control over both knowledge-based assets, and development planning and implementation help them achieve their wants and needs.

In all the examples of Ngalia ICT interaction, ownership, and the ultimate decision-making power was maintained by appropriate participants and the community collective. In all three of the minor case studies, lower degrees were maintained. Subsequently, the Ngalia participants leveraged meaning from the ICT interactions and generated a wider range of meaningful project outputs and associated outcomes. This meaningful character could then be recognized by a wider range of community members, who were able to see the potential for further ICT applications, and assist in the development of flow-on initiatives. This wider community recognition and commitment provides the basis for longer-term ICT initiatives that build in past project successes, and avoids costly and high-risk 'one-off' ICT projects.

The first Ngalia PV project was driven through participant decision-making and was locally owned. The researchers acted as guiding facilitators, where necessary. This project's impact on the participants and targeted stakeholders meant that other Ngalia people became willing to interact with the technology, and thus the inception of the youth PV project. The participant youths owned their project outright. Participant feedback on these projects' successes related to the unearthing of the youths' capacity to manage a project and encompass their cultural heritage view within the narrative. This was achieved by providing the youth with ultimate decision-making powers over the project. The serendipitous competitive success of their video by a prestigious organisation, such as Lonely Planet, affirmed wider recognition of the importance of Ngalia ownership, decision-making and leadership.

The creation of the CSMS database as a valuable ICT output for the Ngalia people is noteworthy. This project was initiated without any input from the researcher or exogenous parties, and represents completely autonomous decision-making and local ownership. Notably, it acts as bridging project linking to all past community directed developments while a highly valuable resource for future development initiatives. Past heritage efforts can be linked into the system providing cultural resources for the community in current and future land rights negotiations. It acts as a basis for language revitalization projects. Digital media produced by the youth can be tagged to works of past generations, bridging efforts to maintain Ngalia culture. Arguably, this pivotal ICT project fits neatly within the holistic Ngalia development plan because *they* formed the idea and shaped its development. The project was designed and managed at the cultural interface, formed and directed by participants who naturally infused cultural influence and fitting practice. By contrast, the initiatives within this study that delivered the lowest participant benefit, i.e., Titjikala, and Collie, were associated with greater levels of the researcher's direction, decision-making control and leadership.

Recognition of the merit for local input to increase local output is not surprising considering that the three highly developed capacities that distinguish humans from

other species are our ability to learn, make decisions, and solve problems (Mithen 1990). Denying people one of their most powerful and motivating 'human agency' (Bandura 1977, 1995) capacities works to disempower, which in turn, articulates to disadvantage and their constraining 'unfreedoms' (Sen 1999). The findings affirm that ICT can be better utilized as a tool for development when ownership, decision-making power and leadership capacity are endogenously provided.

9.4.2 Engagement strategy - trust

Besio (2010) contends that 'By beginning research from an attitude of building trust with others, we frame research ethics positively, proactively embracing the uncertainties of human interactions, such as those embedded in care relations and respecting the agency of those researched' (p. 563). Besio draws attention to the essence of how the researcher chose to qualitatively engage participants, noting that forming 'trust' in a research relationship is preferable over 'doing less harm', which stems from inequitable institutional powers. Trust in a research relationship is constantly under negotiation, and not always evenly distributed, nor reciprocal (Besio 2010). To generate trust in a researcher – participant relationship, Besio proposes that 'care relations' need to be addressed, i.e., 'the proactive interest of one person in the well-being of another and as the articulation of that interest (or affected stance) in practical ways' (p. 563).

From the onset, the researcher sought to be reflective within the project and document the research through a reflexive lens. The participants, concerned for their particular positionality and situationality, encouraged this relational care and trust building approach through their assertive, but negotiated, terms of engagement. Initially, the researcher did not understand this ethical care relationship reading the assertive stance as a defensive response to the frustrations of past researcher experiences, power asymmetries and conflicting agendas. This community-directed relationship forced the researcher to understand the participants' positionality and situationality from a particular endogenous point of view. The subsequent development of understanding and empathy for their particular lived reality underpinned the development of the researcher's care for

the participants, and ability to be attentive to their circumstance. A degree of reciprocal trust resulted and the researcher came to better understand the participants' situation, i.e., their dilemmas, unfreedoms, and development barriers.

To support this transformation, during the early period of the primary case study, Ngalia participants would frequently question both the researcher and other exogenous actors as to whether '*they were on the same page*' in understanding expressed community sentiment, a strategic plan, or project proposal – Did the exogenous researchers genuinely comprehend the reasoned agency of the community participants from a particular Ngalia position? Did they understand the 'bigger picture' from the Ngalia point of view? As time went on, this question was asked of the researcher less frequently, to a point, four years into the relationship it disappeared all together; the point at which the researcher gained the trust of the Ngalia participants. This lengthy timeframe indicates that the researcher had begun to develop a cross-cultural Aboriginal interpretive sensibility and capability, which implies that building trust and a care relation with Aboriginal community participants requires a proactive and long-term investment. Only then would they reveal further levels of information, to enable him to 'see the bigger picture' from their point of view.

ICT-interaction lends itself to this type of researcher – participant engagement strategy. As an ICT tool, it is highly adaptable to suit the varied reasoned agency of a range of positioned and situated participants. This allows the researcher to shape the research context to suit the wants and needs of the research subject. The findings of this research suggest that programs seeking to evaluate the further potential of ICT for development outcomes of marginalized people, meaningful outcomes could be increased by taking the time to 'get on the same page' as participants, engage a 'caringscape' (Poke 2006), develop trust and adapt the research targets as required. When this qualitative care and trust approach was not followed, as in the minor case studies of Titjikala, Collie and to a lesser degree Ceduna, the participants expressed less participatory enthusiasm and benefits from the project outcomes.

9.4.3 Conclusion

The findings of the Ngalia EnCDD case affirm that the participatory approach employed in ICT-interaction initiatives has significant influence on the development outcomes. The findings highlight how the thematic issue of participatory approach, as related to community direction, decisions and action, variously impacted on the quality and nature of outcomes. The findings affirm the underlying importance of trust and respect between community agents and participant researcher/facilitators and that a two-way reciprocal teaching and learning process is a fundamental part of the participatory approach required to achieve meaningful outcomes.

9.5 Development themes

This research involved observations of a range of ICT interaction by characteristically similar Aboriginal participants. This range of ICT interaction share a development agency function and aim to facilitate and increase of local control and ownership of this agenda. As the issue of power and who holds it plays such an important role within human and societal development, increasing local ownership of decisions is a legitimate aim to increase overall participant' status and development agency. Within the broad endogenous development agenda through ICT interaction, four distinct yet interlinked development sub-themes were identified.

- Advocacy
- Cultural maintenance
- Strengthening
- Economic

These four sub-theme areas are discussed in relation to their role within the participants' development agendas. Table 9.1 indicates the agency implications as related to the four development themes that emerged through the various Ngalia ICT interactions. Discussion of these four sub-themes works to identify the benefits or limitations of the ICT interactions to achieve these development agendas.

Table 9.1: Development agency sub-themes elements of the ICT-interaction related development themes

Advocacy	Cultural maintenance	Strengthening	Economic
Awareness	Preservation	Capacity development	Assets
Change	Engagement	Mobilization	Cultural valorisation
Access	Transformation	Endogeneity	Livelihood
Communication	Assets realization	Empowerment	Internal human capital
Dissemination		Networking	
Management		Ownership	
		Local advantage	

9.5.1 Advocacy

As a consequence of the powerless feeling their views, wants and needs are underrepresented within political or social decision-making in societies with asymmetric power imbalances, they may seek to influence or lobby the powerful to make decisions in the interest of the powerless (Rao & Walton 2004). As Aboriginal views are historically underrepresented within policy debate, and they face increasing levels of top-down discriminatory pressure from industry and government, within the Ngalia case, advocacy was an important theme within their development objectives. As marginalization within all societal decision-making areas impact on them, tools that increase their levels of advocacy are deemed highly valuable. For the Ngalia people, the societal power given to international mining companies over decisions related to their traditional country exemplifies this disparity. The following discussion highlights the relationship between ‘advocacy’ as a development agency theme and the ways in which ICT interaction mobilises awareness, change, communication, dissemination and management of Aboriginal voices.

The advocacy imperative, as derived from the expansion of mining company operations on to Ngalia Traditional Lands, was primarily related to tension between

the community and mining companies with the government as an intermediary decision maker. As of 2011, the Ngalia people have not been awarded any Native Title to provide a more robust legal voice to dialogue this issue with mining companies and the government. Wall (2010, p. 26) cites Ritter's (2009, p. 25) explanation of the legal and agency importance of Native Title for Aboriginal advocacy:

Traditional owners, who want their cultural status recognised, are required for legal purposes to officially lodge a claim as set by the Native Title Act. Traditional owners who have not lodged claims would not have the statutory eligibility that gains them access to particular rights. They are, however, regarded as 'traditional owners' even when they have not yet lodged claims. Claim groups who are successful in their claim have to become or be represented by prescribed bodies corporate (PBC) so that they can exercise procedural rights on behalf of the recognised Native Title holders.

Without Native Title, the Ngalia people have limited opportunity to formally appeal to the government, federal or state, to either block or revise site expansions. Yet, despite formal community submissions, few successful outcomes have been achieved through this legal mechanism. Throughout the region, royalties, i.e., financial and in-kind, are offered to traditional owners as compensation to offset the negative impacts of the mining operations. Some Ngalia people previously accepted royalty payments. However, there was a strong sense within the group that this removed of their primary asset for negotiations – their traditional lands and attachment to it. Applying an endogenously driven Ngalia advocacy-themed strategy aimed to communicate the undesirable impact the mining operations have on their lives, their wellbeing, and their ability to operate at the cultural interface to exogenous decision makers, endogenous community members, and general public. The maintenance of oral histories and cultural practices are deeply connected to the protection of physical and sacred places. In an Australian national community that claims to value cultural pluralism, the Ngalia wished to evoke empathy for their situation from powerful exogenous parties. This survival imperative underpins the

advocacy logic of the agency sub-themes: change, access, communication, dissemination or outreach, and management.

Conventional media modes, such as newspaper and television, used to communicate advocacy positions rely on secondary interpretations of community voice and positions. The community had little control over the disseminated message, and its representational content. Powerful institutional voices, such as corporate representatives of the resource sector are highly influential in mass media discourse. Indigenous rights issues in Australia are historically under-represented in the Australian media, and reflect the discrimination and marginalisation of Aboriginals. Prevailing media discourse tends to signify Aboriginality issues as problematic: as outsiders, troublemakers, greedy, different, unreasonable and criminal. 'Media images of and messages about Australian Aborigines are constructed by non-Aborigines operating within the dominant Anglo-European framework for consumption principally by those who share this framework' (Jennett 1983, cited Mickler 1992, p. 310). In 1990, Mickler was commissioned to research the media representation of Aboriginal people and issues in Western Australia and his findings concur with Jennett's view situating 'certain news media practices within an array of technologies of repression within an ongoing process of colonization' (p. 310). Little has changed in mainstream media discourse in the last 20 years. The net result is little empathy is created for their circumstance, and thus limited government and industry support for their endogenous development agency.

Experience with this discriminatory mainstream media reality underpinned the Ngalia utilization a range of ICT to drive their advocacy activities. An advocacy agenda was fundamental to the purpose of the web-based communication, i.e., using web2.0 platforms, such as, blogs, web sites, twitter and Facebook, and digital media. The Ngalia participants produced several advocacy themed PVs to communicate their concerns relative to resource and land access with their most recent production being July 2011. These were screened at community meetings,

academic conferences, and in the public domain via social networking sites, such as Facebook, Youtube, Blogger and Vimeo.

Together, these ICT-interactions, as vehicles to mediate Ngalia advocacy, form a suite of important 'voice' finding and leveraging participatory agency actions for the community. In such an asymmetric societal power relation context, it would be naive to assess the singular impact an individual advocacy production, article, post or tweet had on a targeted socio-political issue. However, observations suggest that over the course of this project, each individual advocacy ICT interaction formed a larger collective pool of Ngalia views and sentiments within the public domain, which together worked to generate some awareness and empathy within media and community circles. Arguably, this growing public social media presence places community pressure on representatives of the resource sector and the government to respond to Ngalia development agency. Evidence of this growing media presence is illustrated by a Google key word search of 'Ngalia' and related words such as 'protest', 'mining', 'appeal', and 'foundation' with the result of a substantial range of articles and links that present the Ngalia communities sentiments towards heritage and mining. A web-based search emphasises the assertiveness of the Ngalia people, and their desire to stand up to pressures from larger decision makers and power brokers.

The impact of this assertiveness is significant. For example, in 2011, the researcher accompanied several Ngalia members to a meeting with representatives from a tier 1 international mining company, i.e., one meeting the highest level of listing requirement for exploration and mining companies of the Toronto Stock Exchange (see http://concordiaresourcecorp.com/resources/Mining_Listing_Requirements.pdf). The agenda was to dialogue on how the mining company might support, financially and in-kind some of the community's development activities. During preliminary discussions, the comments of the two company representatives were noteworthy: the first stated that *'some members of the Ngalia people possess a very sound understanding of how to utilize available media resources to*

communicate their anti-mining positions to the public'. The second that *'this anti-mining material was impacting on the company and its profile in a negative way'*, and they would like to *'manage'* this impact. The implication of these comments was that if the company were to support the Ngalia people, some agreement would have to be made to address the community's volume of anti-mining media. In response, a Ngalia representative stated they had never been *'anti-mining'*, and made an eloquent distinction between *'ethical mining'* and *'unethical mining'*, arguing that all their broadcasts targeted unethical mining and no agreement would be required unless the company was seeking to conduct unethical mining on Ngalia lands.

This corporate concern affirmed the effectiveness of the advocacy outreach of the ICT-interactions. As far as the researcher was aware, none of the ICT-interactions involved campaigns by the Ngalia people against the powerful international company, or at least the sub-company with which they were meeting. Yet, the corporate representatives openly stated that the Ngalia media efforts to discredit the company were impacting on their reputation. This corporate issue raising indicates they had given it prior consideration and that the company's corporate reputation in the media sphere to be one of their primary concerns. This reframed discursive 'David and Goliath' power asymmetry suggests EnCDD ICT-interaction an invaluable advocacy resource for Aboriginal communities to leverage their voice and position on development initiatives on their country. This outcome is indeed empowering. If it enables them to put pressure on one of the largest global mining companies to improve its relationship and practice with a group of Indigenous stakeholders, EnCDD ICT interaction for development advocacy is vital for the Ngalia people.

This outcome and conclusion suggests that the Ngalia's EnCDD ICT interactions have not only had an empowering internal community 'voice' leveraging impact, but also a pivotal outreaching advocacy impact – both vital components for their 'cultural survival' development agenda. The vital role of a key elder with multifaceted cross-cultural capabilities driving the Ngalia community ICT interactions was previously

discussed. The impact of the advocacy themed ICT interaction, suggests that further investment in participatory interaction that allows the Ngalia to transparently and strategically increase the effectiveness of their advocacy efforts to influence key decision makers may lead to benefits for the community. Alternatively, this advocacy agency may support neo-colonial representations of the Ngalia as problematic: as outsiders, troublemakers, greedy, different, unreasonable and criminal. This outcome highlights the potential benefits and costs for a minority group aiming to increase voice and power inequities through using ICTs as a tool to create and sustain more equitable dialogue between community, industry and government. The outreaching capability of web-based ICT interaction suggests the additional advocacy potential associated the on-line links to other Aboriginal community ICT interactions for development.

9.5.2 Cultural maintenance

All the cases within this research involved examples of ICT interaction for cultural maintenance. The following discussion illustrates how through ICT interaction mobilising the development theme of cultural maintenance articulates further the sub-themes of preservation, engagement, transformation and asset realisation. According to UNESCO, culture has intrinsic value for development, social cohesion and peace (UNESCO 2009). Diversity of culture is a driving force of development, both within economic frames but also emotional, moral, intellectual respects. Culture can be described as a form of intangible heritage: a set of cultural expressions that have been transferred through generations, and evolved in response to individuals' environments. Importantly, they contribute to providing people with a sense of identity and continuity (UNESCO 2009). Understanding the intangible cultural heritage of different communities helps with intercultural dialogue, and encourages mutual respect for 'other' ways of life (UNESCO 2009).

The development imperatives of the Ngalia people are a key concern of this thesis. Hence, this research contends that leveraging understanding, mutual respect and value between dominant and minority cultures as pivotal for more equitable decision making between industry, government, and Aboriginal groups. The

particular positionality and situationality of the Ngalia community makes the interaction issue of dialogue, understanding and mutual respect in negotiations between mining companies, the government and the community pivotal to determine mutual benefits. According to UNESCO, the significance of intangible cultural heritage is not simply the cultural manifestation itself, but rather the broad wealth of knowledge and skills that are transmitted between generations. This becomes of high social and economic value for minority groups within a dominant state, and the state itself as it mobilizes development (UNESCO 2009). This view emphasises the preservation and asset value of cultural maintenance. However, only when the communities, groups or individuals that create, maintain and transmit intangible cultural heritage recognize it as such, can it be classified. This classification conundrum underpins the thirty years of Ngalia attempts to document their cultural heritage. Nobody else can decide for them that a given expression or practice is their heritage (UNESCO 2009). Thus, there is a strong requirement for an intergenerational view of cultural maintenance for an EnCDD development agenda. This intergenerational view emphasises both the preservation and transformative value of cultural maintenance with related concern for the issues of engagement and asset realisation.

Hence, maintaining culture and preserving select aspects of heritage become an important component of a community's reflexion and forward visioning and why a group's development strategy must be largely driven and directed through an endogenous community-based momentum of participation and decision-making agency. Wall (2010) alerts to the cultural paradox in how the traditional owners, the Goolarabooloo and Jabirr Jabirr peoples, attempt to negotiate equity with Woodside Energy Ltd, Chevron Corp, Royal Dutch Shell Plc, BP Plc, BHP Billiton Ltd, and the Western Australian state government with regard to the establishment of resource industry on their traditional lands: 'how do Indigenous people negotiate agreements with state and mining companies in such a way as to maintain their distinct cultural understandings of themselves and accumulate adequate financial resources to safeguard their cultural survival?' (p. 26). Wall alerts how the destruction of physical heritage sites breaks linkages to Aboriginal ontology,

creating a conundrum for fixing meaning and worth to future development activities. For Aboriginal people, cultural maintenance, as a process and outcome can influence and impact upon a wide range of issues that ultimately relate to their ability to develop as a robust and functioning cultural interface and community entity. The Yindjibarndi people of the Pilbara region of Western Australia face similar negotiations with resource company Fortescue Metals Group. Represented by the Yindjibarndi Aboriginal Corporation (YAC), they have taken to the use of ICT such as video, social media and blogging to seek greater voice and autonomy over decisions that related to how a powerful mining company immorally engages with them over land rights, royalties and the management of Yindjibarndi heritage (see LaFlamme, Singleton & Muir 2012).

Further to this, Michael and Dunn (2006) present a case for the use of ICT to promote continuing presence of Aboriginal (Badimaya) culture. A combination of digital document archives, content management through multi-media clips, and a portal framework through geographic information systems could combine to provide a mode for the people to preserve aspects of their intangible cultural heritage. However, the authors note that while ICT is well suited to managing tangible knowledge, it struggles to maintain context-rich tacit or intangible qualities of Aboriginal knowledge. This concern for tacit cultural knowledge differentiates it to the static and abstract quality of archived cultural knowledge.

In the Ngalia case, they sought to overcome the perceived limitations of ICT heritage management by utilizing an independent Aboriginal database firm to assist them in the development of a system that would allow their tacit knowledge to be stored in a format that facilitated evolution of the information, and maintained access and interactions at the cultural interface. As Christie (2004) cautions, non-indigenous programmers making databases for indigenous knowledge owners can make information architecture problematic, as databases themselves house and promote their own ontology. Because of this risk, Ngalia people actively sought to have their CSMS database designed in partnership with Aboriginal programmers and community members, who share a similar Aboriginal ontology, with the intent

that they would have greater understandings and appreciations for the cultural requirements, aims, objectives and applications of the database. That the Ngalia participants personally invested in this unique and innovative Aboriginal enterprise is noteworthy.

The Ngalia CSMS was technically successful. However, at the time of writing, broader Ngalia community participation was limited. Several factors constrain its potential as an effective ICT interaction vehicle to collectively manage their heritage-based knowledge:

1. Access to the CSMS is limited and restrictive. Community members must approach a key individual for CSMS user registration. Historical and cultural conflicts may influence peoples' likelihood to approach, and this individual has the power to refuse access. Access to the CSMS is over the Internet requiring users have access. This constrained access issue has cultural protocols, participation and the community management of internal relations implications.
2. Despite programmer efforts to simplify the CSMS operation, it is still a relatively complex system to access, navigate and edit. This technological sophistication limits participants to those that are versed in computing and database systems. This ICT characteristic has implications for the ICT literacy levels of the potential users.
3. The language and ICT literacy requirements of a web-based CSMS have capacity building implications for wider community access.

Nevertheless, the innovative asset realisation capacity of the CSMS offers the Ngalia people the potential to identify transformative freedoms through its cultural archiving component. However, many individuals lack the required capabilities to realize this potential. Thus, the accessibility, affordability and capability barriers of the technology identify characteristic unfreedoms that articulate to the disadvantaged and marginalised character of remotely located Aboriginal peoples. Further research is needed to determine how these participatory barriers can be addressed for transformative development agency.

In 2009, prior to the development of the CSMS, the Ngalia people relied upon a mixture of traditional methods, i.e., oral, performance and drawing, and western methods, i.e., written, digital, audio, and image, for managing, maintaining, transferring and preserving their culture. Traditional methods were becoming increasingly ineffective as intergenerational knowledge transfer pathways, and knowledge was being lost as elders died. Modern methods, while effective at recording information, often failed to facilitate access to and evolution of the knowledge at the cultural interface. This archiving method meant that information was de-contextualised and kept in singular and unrelated parcels, making applied and in-context access to the knowledge problematic.

The Ngalia and contracted Aboriginal programmers designed the CSMS to overcome the shortcomings of the previous methods and aimed to capture ways to address traditional protocols for knowledge access and evolution, and maintain context and meaning of the information. The previous discussion on the accessibility, sophistication and capability constraints associated with the technology highlight the CSMS shortfalls. However, the Ngalia CSMS represents substantial advances in the field of indigenous knowledge databases. The autonomous and collaborative Aboriginal agency employed to maintain the cultural specificities of the Ngalia knowledge and practice within the ICT system is noteworthy. Firstly, who has access to what information is a foundation of Aboriginal culture. To undermine this cultural characteristic would remove a cultural characteristic of the ontology of the information being stored, reducing its value as a cultural asset, and breaking cultural protocols. Therefore, the feature of the CSMS that traditional Ngalia knowledge access protocols can be maintained is a positive design objective in the journey towards more effective Aboriginal database models.

Secondly, databases historically turn multi-dimensional knowledge into one-dimensional information or worse, static data (see Christie 2004; Michael & Dunn 2006). To overcome this limitation, information must be placed in a system that maintains meaning and context to the knowledge, and defines relationships around

the content (Michael & Dunn 2006). Simply using digital technology to store knowledge will not overcome this dilemma. Many of the earlier ICT attempts to maintain knowledge replicated the limitations of earlier analogue methods, but in a digital form. They became frozen snapshots of knowledge from a given time, and subsequent interpretations of this data will vary (Veltman 2003).

The Ngalia CSMS attempted to address this information management issue by designing a system of interlinking each piece of data to other related data, forming a system of navigational entries based on their relatedness and cultural meaning and context. For example, a video produced by the community that presents a given area of country and its significance to the Ngalia people can be opened and viewed. This page has links to other parcels of data that may relate to this video and the area. These may include a song (mp3) of a dreamtime story that relates to the area, images of the area, written stories or transcribed songs of the area, GIS maps, language or words used to describe the area. This system of 'tagging' data entries is used widely throughout many Internet platforms, including the navigational system employed by the online thesaurus <www.wikipedia.com>, where highlighted links lead readers to other related pages of content. This feature of the Ngalia CSMS allows collective memory to be stored in a mode that better captures the context and relatedness than singular parcels of data.

Beyond the imperative to preserve culture, additional instances of ICT interaction for development themes of engagement, transformation, and asset realization were evident. The community videos produced with participants from the Ngalang Boodja community aimed to engage a number of their youth in their cultural traditions. The video told a story of their connectedness to a particular geographic feature. The production process was highly participatory and inclusive, encouraging interactions from the youth to generate interest and engagement. Similarly the Ngalia participants used video to engage youth under similar circumstances (Singleton *et al.* 2009; Corbett, Singleton & Muir 2009; Laflamme, Singleton & Muir 2012). This youth engagement strategy through PV production was also observed in Titjikala and Ceduna. As youth variously became engaged in these activities, and

subsequently the cultural aspects of the tasks, the adults were able to unearth insights into the youths' strengths, desires, interests and capacities. Through exogenous interest in the productions and their content the youths' view culture was reframed as an asset, and adults came to view the youth as an endogenous community asset.

In light of these observations, this thesis finds that ICT4EnCDD has the potential to serve as a valuable development tool to achieve both preservation and transformation cultural maintenance outcomes through community engagement and asset realisation. In examples, such as databasing, further experimentation and evolution are required to refine its cultural appropriateness, user-friendliness and participatory engagement characteristics. However, the cases demonstrate the multifarious ways that ICT interaction offers very real present-day opportunities, such as PV, photography, and the engagement of youth, transforming views, and the unearthing of community-based cultural assets. The risks to communities in engaging in ICT interaction is determined to be minimal in comparison to the overwhelming cultural threats and external pressures many Aboriginal communities as a result of the discrimination and marginalisation of their Aboriginal culture.

Risks do exist, however, and should be identified and acknowledged by potential participants. These will likely differ depending on the positionality and situationality for each group with multifarious implications at a local level. However, broadly they might include the misrepresentation and fossilization of information stored within digital databases. If the lived and physical components of people's cultural heritage, i.e., performance, respect, value, and land forms, are not preserved in context with intangible cultural heritage stored within the databases (stories, paintings, images, maps), context, connection, the ontology and purpose of the knowledge may be lost and unable to be revived by future generations in an accurate format. The ability for a wide range of community participants to easily interact with digital databases is a concern. They still require substantial levels of literacy and computing capacity. Within the Ngalia case, participation due to literacy and computing capacity substantially impacted on participation levels. These cultural

maintenance issues articulate to the importance of such ICT interactions strengthen individual and community Aboriginal culture and identity.

9.5.3 Strengthening

The comprehensive works of Amartya Sen and Martha Nussbaum were identified in Chapter 3 as informing the notion of the 'capability approach' (CA). CA is a multifaceted framework for increasing the empowerment, capacity and overall well being of the marginalized. CA has been applied to ICT interactions by marginalized peoples for a number of years, with Garnham (1997) cited as an early example. More recently, CA has been specifically applied to ICT4D (see Vaughan 2006; Sen 2010; Coeckelbergh 2011; Kleine 2011; and Oosterlaken & Hoven, 2011), and Australian ICT4D projects (see Vaughan 2011). The CA posits there is central importance to individual human capabilities, and that these underscore freedoms and available opportunities for people to achieve their defined wants and needs relates to the individuals well being, empowerment and overall equality (Oosterlaken & Hoven 2011). It is these capability factors that form a basis for the 'development' to which ICT is applied. Therefore, the CA can be used as a normative-ethical framework to discuss how ICT changes people's capabilities – increases or decreases, or simply influences what people are able to 'do' (Coeckelbergh 2010). CA implies that for meaningful development to occur, an individual must possess suitable levels of freedoms within these areas: life, body health and integrity, senses and thought, emotions, conceptions, affiliation, play, and control over ones environment (Coeckelbergh 2010). The relationship between ICT and the CA is not based in simply access to ICT, but rather whether an individual can access the tool, and have the capability (freedom) to use the tool effectively for their chosen activities, resulting in beneficial development change. The research observations identified a common 'strengthening' agency theme in many of the Aboriginal participant applications of ICT. Projects variously included a common 'strengthening' aim to improve, mobilize, develop, build, enhance, and empower a range of participant freedoms. Hence, the sub-themes of capacity development, mobilisation, indigeneity, empowerment, networking, ownership and local

advantage articulate to the development agency theme of 'strengthening', as nominated in Table 9.1.

As the majority of projects were run by and for community participants drawing on endogenous human capital, the strengthening or enhancement of participant capability was often stated as a project aim and output. The term 'strengthening' is used because it implies a range of agency outputs that are often tagged with ICT4D literature. The wide-ranging, long-term, lived, relational and qualitative character of this research constrains measured assessments of the impact of ICT interaction on capacity development, empowerment, and ownership. However, the planned and serendipitous ways the ICT interactions worked to variously strengthen participant identity, engagement and capabilities are noteworthy.

The literature review demonstrated why capacity development and capacity building are necessary components for effective EnCDD. The Ngalia case emphasises how the capacity to interact with ICT can also have substantial implications on an Aboriginal community's ability to effectively use ICT for their wants and needs. In this regard, capacity is a key to the mobilization of a freedom for Aboriginal people to effectively utilise ICTs for their endogenous development needs. Several Ngalia community members possessed high levels of ICT capacity in comparison to the other participants giving them higher levels of freedom to pursue the community's development. Participants with lower ICT capacities were able to be informed of potential opportunities by these individuals, and guided towards and throughout ICT interactions, i.e. Ngalia youth and PV, elders and the CSMS. During these guided processes, individual capacities were strengthened as participants learnt from one another. For example, at the beginning of the Ngalia case several participants had never used computers or video cameras, and by the end of the research, almost everyone had participated in a PV project, and contributed to the development of a number of community videos. Similarly, contributions of data for the CSMS increased.

Several Ngalia participants expressed strong resistance to the usage of terms such as 'capacity building' or 'capacity development', because the terms denote community disadvantage and worthlessness, that individuals have deficit capacity. They preferred a term to encapsulate the idea that everyone possesses capacity, and that the task was to identify capacity in the form of talent. These Aboriginal concerns for rhetorical choices are valid. In response, as it implies baseline and specific human capacities in individuals and communities, the researcher applied the term 'capacity enhancement' to cover these strengthening themes in discussions.

The enhancement and strengthening of participant capacity was observed beyond ICT operational capacity. Many Ngalia participants had endured a low freedom existence for prolonged periods and so any positive experiences generated through ICT interactions had observable on-flowing capacity, e.g., through achieving outcomes within a PV project participants demonstrated increased capacity to participate in other community activities. This indicates that ICT can form the platform for individuals to increase technical capacity, but also levels of self-worth and role-valorisation and thus, has significant implications for participant empowerment.

With enhanced capacity and a greater understanding of how individuals might be able to contribute to community activities, a number of participants manifest signs of empowerment, and thus, transformed how they were positioned within the Ngalia development activities. The number of ICT projects conducted over a long period allowed participants to reach new levels of understandings on how ICT might aid them and reflect on their collective development targets. The positive experience of these consciousness raising and capability enhancement processes through participation in the various ICT projects enabled individuals to gain greater input, control and understanding of the community's intent. For individuals, the positive participation experience created a sense of personal empowerment. Thus, by inference, the Ngalia community was collectively empowered through their use of ICTs. This inference is further evidenced in the discussion on the themes of

advocacy and cultural maintenance. Their interactions with ICT provided them with new opportunities to advocate, protest, lobby, communicate, disseminate, network, and influence others. This opportunity provided the Ngalia with greater 'freedom' within these thematic EnCDD areas through the empowerment gained by the interaction with a holistic suite of new technologies.

However, some ICT related projects were identified to disempower Ngalia individuals. Observations suggested that for some Ngalia individuals, the introduction of ICT into community activities was disempowering in areas of ownership, access, and operation. Much of the Ngalia ICT equipment was purchased, owned and stored by the community representative body, the WCC. This meant there was little personal ownership by individuals unless they could afford to own their own camera, computer, iPhone or Internet connection. Thus, those who were able to privately purchase their own devices improved their ICT capacities at a much faster rate than those who could not. When engaging in field-based activities, those individuals with ownership and private access to ICT were observed to naturally assume greater roles in an ICT project than those without. Individuals who relied on shared access and had lower capacities would withdraw resulting in a participatory hierarchy. Thus, ownership and access are a pivotal barrier issue in the empowerment/disempowerment nexus of ICT. With increasing affordability of many ICT devices, will increases in personal ownership and access levels lead to increased use of ICT interaction for Aboriginal EnCDD? Mobile phone adoption would indicate yes. Inevitably, an individual's ability to operate an ICT dictates whether the interaction may be an empowering experience or a disempowering one. Unable to rely on internal capacity during the interaction process, a participant with low ICT capacity may experience disempowerment, yet, be empowered by a positive participatory outcome. The Ngalia experiences indicate the complex ways in which ICT interaction strengthens individuals and the community through their multifaceted impacts on capability development, mobilization, endogeniety, empowerment, networking, ownership and the emergence of a sense of local advantage.

9.5.4 Economic

In general, ICTs were developed to facilitate societal economic growth and improve efficiency. However, this research is less concerned with ICTs' ability to improve economic opportunities for remote Aboriginal peoples. The literature review identified the imperative to move beyond narrow economic growth definitions of 'development' and engage with more multifaceted and multicultural views, which value the pursuit of a meaningful and transformative livelihood approach through EnCDD agency, especially for marginalised indigenous peoples. Hence, the sub-themes of advocacy, cultural maintenance and strengthening are understood to be relevant to a long-term approach to the economic theme of development in terms of identifying assets, cultural valorisation, livelihoods and internal human capital, as included in Table 9.1. The socio-political and cultural development-oriented Ngalia activities as instigated and actioned by the Ngalia participants in an evolving process of execution form a more holistic and long-term set of development concerns, targets and objectives that importantly relate to agency concerns for community survival and meaningful development. Similarly, the three minor cases involved ICT interaction as predominantly cultural maintenance and strengthening exercises with improved enterprise marketing targeted in one case.

Within the Ngalia case, a desire to improve the financial income of the WCC through the trial of ICT applications was evident and this intent is not surprising for an economically impoverished community. The sale of community produced DVDs and online art sales featured in several community activities and this small economic outcome was empowering. In several cases, the sale of DVDs merely covered the cost of printing the products and left a small profit, but without taking into account the large costs of running the PC project and producing the DVD. Arguably, the symbolic value attained through the sale of DVDs was of greater significance along with the realization that a diverse range of people were willing to pay for their DVDs than a profit and loss assessment of the overall project. The symbolic value of this minor economic activity worked to both valorise Ngalia culture and empower of the participants. As such these DVD sales had a reframing

agency impact, opening the participants to further explore commercial livelihood opportunities, which drew on internal human capital through ICT-interaction.

Several Ngalia web sites had e-commerce functions. On more than one occasion these were functional, albeit as managed in an amateur fashion with irregular product updates, poor product image quality, and lack of information about products. However, despite this mixed quality investment, the Ngalia people were unable to sell any products on-line using these tools. The sale of products through the community centre, the WCC, proved to be more effective, but as costs significantly outweighed income and the WCC had no external financial means of support, the shop and the on-line sales feature were closed. This closure should not be assessed as a community development 'failure', but rather a catalyst for change. The early community interest and enthusiasm for this ICT experiment engendered important reflective lessons for the community leaders, and this experience informed the advocacy, and cultural maintenance, strengthening the direction of the next wave of ICT interactions. The high frustrations experienced, affirmed that the endogenous determination of a meaningful Ngalia and livelihood transformative direction and agency for community development and subsequent ICT investment should be the long-term goal.

Similarly, the Aboriginal communities associated with the Ceduna case have an on-line e-commerce presence (see <http://www.visitaboriginalart.com/artsite/welcome.cfm>). Likewise, the Leonora-Laverton Cross Cultural Association (LLCCA) also has an on-line e-commerce presence (see <http://www.laverton-outback-gallery.com.au/index.php?pageId=llcca>). The LLCCA is a not-for-profit organisation, operating in Laverton since 1997, whose aim is to 'provide and enhance the employment, training and economic development and retention of Aboriginal people'. The LLCCA receives the exogenous sponsorship of a number of powerful resource companies and state government departments. It is largely managed and directed by a non-Indigenous member of the community. As such, the LLCCA represents a conventional and exogenously driven economic approach to Aboriginal

community development, where local Aboriginal people have a reduced role within the overall management of the Centre, yet can arguably still benefit from its operations. In the example of the WCC, without this exogenous financial and labour support the Ngalia people were unable to employ individuals to oversee specific roles to manage e-commerce activities, or invest in training that could develop these capabilities within the community. A better balance between the local autonomous decision and control WCC model and the passive and exogenous supported LLCCA model may lead to a more authentic and sustainable community-based cultural centre within the Northern Goldfields region.

The overall Ceduna project agenda was to provide community-driven externally facilitated experience and training to participants in a family enterprise promoting video subsequently screen at several National Indigenous enterprise expos, and the Ceduna Community Arts Centre

(<http://www.visitaboriginalart.com/artsite/default.htm>). However, no assumptions can be made on the economic impact of the ICT interaction component of this. Within the Ngalang Boodja case, economic impacts were not a project agenda. Overall, the limited number of economic oriented ICT applications limits the value to draw any conventional economic development meaning from them. Nevertheless, the multifarious insights drawn from the Ngalia ICT interaction experiences, processes and outcomes emphasise a more multifaceted and holistic view of 'the soft side of the enabling environment' (Hunt 2005) of Aboriginal community development. These insights affirm the more complex, long-term and interrelated ways that ICT-related advocacy, cultural maintenance, and strengthening agency may work to inform and drive endogenous community driven development for economic impacts through their role in enabling the identification of community assets, cultural valorisation, livelihood opportunities and internal human capital.

9.6: Aboriginal ICT adoption case study conclusions

9.6.1 An adaptive pluralist cultural survival approach for transformative EnCDD

Extrapolating from the previous discussions, this section concludes the case-based research on ICT and remote Aboriginal ENCDD with summary responses to the following 5 key research questions:

- 1) Was there a role for ICT within the Aboriginal EnCDD activities?
- 2) What key themes were identified within Aboriginal EnCDD involving ICT-interaction?
- 3) What factors contributed to meaningful ICT participation and interaction?
- 4) Which ICTs present the greatest development opportunities for Aboriginal peoples?
- 5) What are the limitations of these findings?

Together, the summary responses to these five questions throw light on this thesis' key question: Is ICT-interaction an appropriate tool for remote Aboriginal EnCDD?

9.6.2 Was there a role for ICT within Aboriginal EnCDD activities?

The analysis of the primary case provide evidence that ICT interaction played a substantial agency role within a broad range of Ngalia development activities. This finding was consistent with similar observations within the minor cases, albeit of lesser significance. The credibility in this finding is strengthened by the following factors:

- The broad range of ICTs that featured within Ngalia activities
- The diverse range of locally determined development applications to which they were applied
- The longer time-frame of the observations
- The high levels of endogenous agency, direction and decision-making exhibited by community members during ICT development activities.

9.6.3 Key development themes identified within the Aboriginal EnCDD involving ICT-interaction

The development framework applied in this project posits that mobilizing no one development theme through ICT interaction is of greater importance than another. Only individual agents can themselves identify their wants and needs using their ontological assumptions and positionality and situationality to inform an appropriate pathway to actualise their reasoned agency. This logic underpins Chamber's (2010) adaptive pluralist notion of meaningful development. The four key development themes were either targeted or emergent through ICT interactions, but in the minor cases exogenous agents mobilised the decision-making and the development theme-related agency, whereas they were endogenously driven in the Ngalia case. The following themes, sub-themes, and order of significance are identifiable:

Advocacy – This was clearly a long-term and targeted socio-political objective of the Ngalia people, and ICT interactions demonstrated this sub-theme to have internally strengthening and externally outreaching impacts. Advocacy agency derives from the systemic and historical marginalisation of Aboriginal peoples in general, as documented in Chapters 2 and 3 – in the Ngalia case their very imperative to survive. If people feel they are underrepresented politically, socially and culturally, and have reduced decision-making capacity, some will seek to raise their voice and influence to address this power imbalance. Within the Ngalia study, the suite of ICTs used variously addressed this socio-political sub-theme by leveraging particular voices within the community, outreaching their voice and concerns to other Aboriginal communities and the wider society.

Cultural maintenance –A diverse range of Ngalia ICT-interactions supported this theme, because of their appropriateness to capture archive and transfer TK, with minimal negative ontological impact. The Ngalia cultural maintenance outcomes demonstrated in the suite of ICT interactions affirm the internal community strengthening and empowerment impacts of this

vital identity and knowledge-related development theme. Similar effects were demonstrated in the cultural maintenance themes of the minor cases, but arguably, the impact was short-term. The long-term and endogenously driven character of the Ngalia ICT-interactions affirms evolving community understanding of how this theme crucially articulates to their survival as culturally distinct peoples. The motivational and meaningful nature of interactions related to cultural maintenance worked to drive a more holistic and strategic approach to ICT interaction for community development.

Engagement – interaction with a range of ICTs consistently motivated the youth to engage with culture. Aboriginal youth disengagement from cultural learning is a prominent feature of contemporary Australian Aboriginal life, thus this observation is noteworthy. However, the primary case demonstrated that, because of their mainstream popular culture and educational experiences, the youth have an affinity with ICT interaction, and thus, the technology should be seen as a vital tool for intergenerational cultural learning. Because the youth possess greater ICT interaction capabilities they have vital ‘freedoms’ to engage to actively participate in cultural maintenance if they choose. The findings affirm this as a more effective approach than expert driven agency, which positions youth as passive learners and may not accommodate their particular Aboriginal specificities.

Capacity enhancement – The Ngalia people demonstrated enthusiasm to explore and expand on existing endogenous capacities, reducing reliance on external experts. The ICT-interactions variously demonstrated their suitability as more appropriate tools over the literacy barrier of formal text-based mediums. The collaborative character of production methods, especially when on country, facilitated greater participant inclusivity, thus encouraging and expanding individual and collective capacity. This enhancement is noteworthy, as EnCDD requires high levels of internal human capital to drive its community functioning.

Resource mobilisation – As EnCDD relies on internal community capacity and capital, the mobilisation of assets becomes central to a group’s ability to drive and direct their own development agency. The projects demonstrated how the various community participants held different Aboriginal capacity and capital resources, e.g., Ngalia elders, men, women, and youths, as well as mainstream capacities and resources. The projects demonstrate ICT-interaction was an effective tool for the Ngalia people to adaptively engage individuals in development activities and with observable beneficial bonding, bridging and resource mobilizing outcomes for individuals and the whole community.

9.6.4 Factors that contributed to meaningful ICT participation and interaction

Several participatory and interaction factors that contributed to the community’s ability to realise meaningful outputs are identifiable:

Presence of key-agents – who provided unique leadership, capacity to identify opportunities, communicate opportunities to other individuals, mobilise trust, engage other participants, multi-cultural navigation, and apply tools to diverse and locally characterised objectives. The quality of these key-agents is deemed vital for unearthing the meaningful quality of local EnCDD.

Fitting practice – many of the Ngalia ICT interactions resulted in both positive and longer-term outcomes for participants because they harmonised with a pre-existing and locally specific development imperative. ICTs were used as applied tools to increase efficiency, impact and outputs of existing causes, wants and needs. They were based on locally determined needs assessments and an integral view of how community knowledge, resources and capabilities might contribute to an ascribed and participatory community-driven agency, as facilitated by particular experimental engagement with ICT-interaction. Indeed, this research supports the

contention that an endogenously driven community/participant development 'plan' enables the effective identification of appropriate ICT interactions that are more likely to result in long-term and meaningful change.

Engagement and trust – This was low in the minor cases and the resulting projects demonstrated little sustained agency impact or positive outcome for participants. However, within Ngalia activities, trust between the researcher, community key agents and broader community participants enabled more targeted ICT applications. Similarly, the higher degree and collective quality of engagement resulted in greater levels of active participant ownership and influence over ICT application decisions. Developing participant trust helps to gain insight into community wants and needs, thus aids in making collective choices concerning fitting practice. As an important element for EnCDD, higher participatory levels of engagement and trust have implications for other community members gaining collective understanding of development agency and objectives and the appropriateness of ICT interactions.

Remoteness versus access and ownership – normative levels of ICT uptake based on accessibility would predict higher uptake levels in urban and rural setting. This was not observed to be the case. While arguably the Ngalia participants had far lower levels of access to ICT infrastructure and services than Collie and possibly Ceduna and Titjikala, their agency demonstrated a high level of need to access, capture and disseminate information and knowledge. This need worked to override any spatial barriers, and as a collective their output demonstrated that they actively sought new ICT-interaction strategies to increase their access to knowledge capture and management. Overcoming the impediment of remoteness through ICT-interaction is attributable to the key leadership, professional and cross-cultural capabilities of a key community agent.

Project agency that positively leveraged and valorised Ngalia culture and identity – The exploration and accumulation of all actor assets and capabilities pool together to create freedoms to counter the mainstream assumptions of Ngalia marginalisation and disadvantage, and reframe them internally and externally as peoples in possession of valued and useable cultural traits.

9.6.5 The ICTs that presented the greatest development opportunities for Aboriginal peoples

The following ICTs showed the greatest development opportunities:

PCs – used most frequently and by the largest number of participants making them a keystone ICT. While the rapid evolutions of ‘smartphones and tablet’ style devices now perform many of the tasks once limited to a PC, their use is limited. The appropriateness of PCs within the areas of indigenous heritage management is noteworthy. Predictably, this will change as ICT devices continue to rapidly evolve.

The Internet – a vital tool within the Ngalia case providing access to information and a means to disseminate it. The Ngalia CSMS demonstrated that, as increasing efforts to digitally and remotely store and manage their traditional knowledge are invested, the Internet becomes the lifeblood vehicle for their evolving heritage management system. Their experimentation with the Internet demonstrated how this could facilitate their advocacy-oriented news dissemination, and as such acted as powerful intermediary tool to create awareness of their causes. The Internet bypasses many of the powerful conventional media structures that prohibit grass roots community organisations taking control of their information access and dissemination. The Ngalia CSMS is a noteworthy example of an EnCDD outcome, specifically designed and implemented to overcome a present and enduring issue of cultural knowledge loss and intergenerational transfer breakdown, while importantly addressing the community need to control culturally appropriate internal and external access to the knowledge and information.

PV – also a powerful tool used within all case studies as it enabled the engagement of a wide range of community participants. In addition, it is relatively affordable, overcomes often-discriminatory age barriers, experiences, literacy levels, and language. Most importantly, the projects demonstrated that PV can be applied to a wide range of community themes, and used to produce outputs targeting internal and external audiences. It can deliver both process outcomes, i.e., internal decision-making, empowerment, bonding, engagement, and output outcomes, i.e., awareness, bridging, lobbying, and external decision-making.

Mobile phone – adoption dramatically increased within Ngalia case study. This transformative shift freed individuals from a reliance on the public phone system, and enabled overcoming the barriers of home phones ownership which include: the need for a regular stable home address; the ability to maintain a financial contract with a telephone service provider; the inability to control and monitor home phone usage by non-residents; and the requirement to maintain electricity to the home. These barrier factors are prevalent throughout remote Australian Aboriginal settlements. The ability for mobile technology to enable individuals to maintain contact while travelling through remote areas is significant, and that mine sites offer service connections where there would otherwise be none is significant. The opening of new mines and the closure of old mines may impact Aboriginal mobility through remote areas and the impact of this issue warrants further research.

Web2.0 – demonstrated growing community awareness of the importance of social media and Web2.0 as appropriate ICT-interaction tools and how these tools diversely interlink with other ICTs. Through Web 2.0 interactivity, the Ngalia PV and PP projects leveraged new and long-term development agency impacts. The life of a projects were extended to have variable agency impacts over an extended and future period and across a wider range of community activities, achieving a broader range of agency outcomes. Agency outcomes included knowledge archiving and participation during production phases, to influencing external decision-makers and creating exogenous awareness to community issues through social media dissemination, opportunities not available prior to Web2.0.

The Ngalia case demonstrates the value to reflect on the appropriateness of a suite of ICTs as interactivity tools for development agency in particular contexts. The case demonstrates that when ICT interaction is experimentally and innovatively applied through an experimental and innovative endogenous process it can tap deeply into community worldviews, values and practices, address the particular positionality and situationality of individuals and groups, and mobilise the reasoned agency of individual and groups. The case comprehensively demonstrates how, through an EnCDD approach, ICT-interaction can support the production of locally determined 'best fit' interpretations of a diverse range of locally meaningful development objectives, actions and outcomes.

Figure 9.2 presents an overall holistic summation of an ICT4EnCDD Participatory Action Framework Model as derived from the multidisciplinary theoretical assumptions and endogenous participatory action processes and outcomes of the Ngalia case study. While the figure derives from the particular contextual, dialogic and reflexive dimensions of a specific case, this research posits that drawn together, the contents build a useful framework for conceptualising a more general ICT4EnCDD participatory action model. This research contends this framework to be a useful tool of the case-based research.

9.6.6 Limitations of these findings

It would be naive to assume that the diverse range of available ICTs do not come without associated risks. From an ontological or Aboriginal worldview position, the use of digital tools to maintain a traditional culture is likely to cause some level of transformation (Christie 2004). However, the analysis of these impacts is not within the scope of this research project. The thesis aligns with Rao and Walton (2004) argument that for a culture to sustain meaning and hence viability, some adaptation and transformation are fundamental.

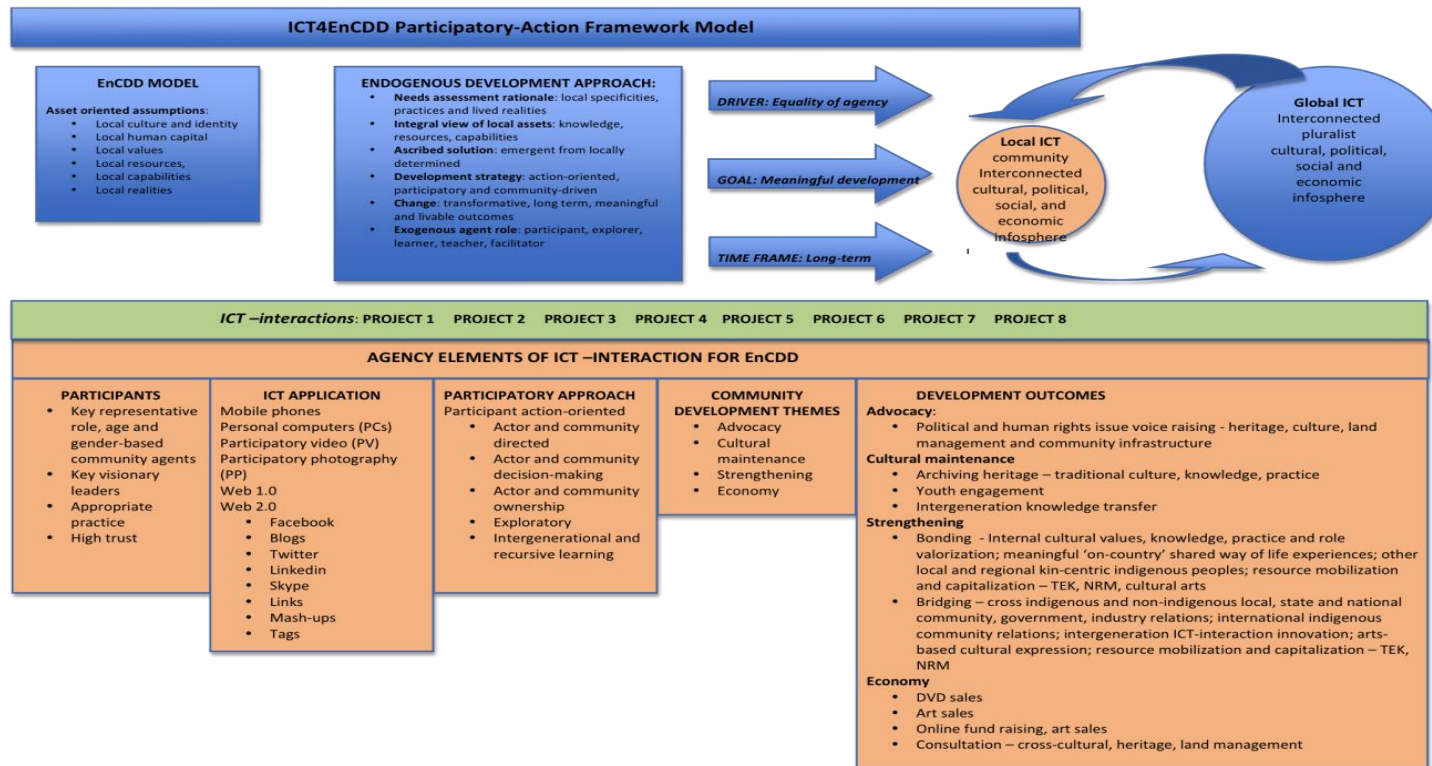


Figure 9.2: ICT4EnCDD participatory action framework model

The small number of approximately 60 Ngalia people case participants limits the credibility of claims to extrapolate the findings in a pan-Aboriginal manner. The findings were mainly derived from an in-depth review of interactions within a specific participant Aboriginal community living in a specific remote geographic location. However, the thesis contends these findings have broader implications for community development and ICT-interaction beyond the participant community. Reflection on the lessons learnt through the participant observations of the community and the researcher as they experienced the EnCDD agency framing to their ICT interactions suggests that more general extrapolations maybe relevant for further action and research. Hence, these more general implications are discussed in the final chapter.

Chapter 10

Conclusions

10.1 Preface

Many Australian Aboriginal peoples endure a legacy of long-term and multi-generational disadvantage and marginalisation across wide areas of society. They do so at far higher statistical rates than the nation's non-Indigenous population. Affirming this, the fifth SCRGSP (2011) report focused analysis on the 'patterns of multiple disadvantage' across the areas of education, income, health, housing, crime and violence. This pattern is especially apparent for those people located within remote regions of Australia, including Western Australia, where mainstream development opportunities are largely influenced by international and local extractive industries. Yet, citing the Centre for Aboriginal Reconciliation some eleven years ago, the SCRGSP report stated that there has been widespread endorsement of the vision embodied in the report of a society where Aboriginal and Torres Strait Islander peoples should enjoy a similar standard of living to that of other Australians without losing their cultural identity. To experience Aboriginal marginalisation is to experience a society divided between fractured endogenous attempts to maintain cultural meaning and function with under-represented decision-making, and a mainstream Australian society that largely undervalues cultural diversity and difference. This fractured socio-political environment can be problematic for Aboriginal people who seek to engage in development that targets selected capitalist aspects of mainstream society, while evolving and maintaining their Aboriginality.

As they exist at the frontline of two widely different cultural worldviews, Aboriginal communities throughout regional and remote Western Australia are particularly vulnerable to such conundrums. One worldview involves the Western positivist environment driven by normative development assumptions dominated within regional WA by powerful resource sector values about jobs, income, housing, training, and cultural materialism, i.e., materialism as security, progress and success. The other worldview involves the contemporary evolution of a pre-

settlement Aboriginal Australia with Indigenous socio-cultural assumptions framed by a deep connection to country, i.e., today, the remote community outstations, and a desire to maintain cultural practice; ceremony, place meaning, custodian, kinship, and cultural law. While one is driven by progress, efficiency, uniformity, self-interest, and capitalism, the other functions through its historical connections with the physical land and its interrelated spiritual and tacit knowledge. Indeed, development opportunity does exist for many Aboriginal people throughout regional Western Australia through an association of multiplier-effects from the resource sector, a complex Government welfare support system (CDEP), and broader Western-centric opportunity. However, this environment can become problematic for Aboriginal people as many of the available normative development opportunities fail to mobilise the reasoned agency of their particular Indigenous worldview. The prevailing view focuses on quantifying and teasing out the 'deficit' qualities of Aboriginal lived realities, while the alternative hopes to valorise the 'asset' qualities of an Indigenous worldview. The deficit notion affirms the need for a paternalist, prescriptive and interventionist approach: 'Fundamental long term change will require concerted action on the part of governments, the private sector, the general community and, not least Indigenous people themselves' (SCRGSP 2011, p. 79). How Aboriginal people navigate such a contentious space is a complex development phenomenon, with broader implications for national and international Indigenous populations.

This disadvantaged and marginalised development pattern and complex environment is not isolated to Australia, or remote Western Australia. As previously discussed in detail, international development theory and practice has evolved to acknowledge the complex and often conflicting development environment that many Indigenous peoples face today. The field acknowledges that Indigenous people's development often occurs within local, complex, diverse, dynamic, uncontrollable and unpredictable lived realities. This lived reality contrasts to the easily identifiable, consistent and replicable realities (Chambers 2010) underpinned by the normative mainstream development paradigm. Further, they often exist within this environment as minority cultures.

Under the normative logic of the mainstream development paradigm, Indigenous people are positioned as 'adaptive agents' who must seek to overcome multidimensional deprivation (Chambers 2010). Subsequently, within the context of this locally adaptive agency the notion of participation is acknowledged as the keystone to address the asymmetric worldview and power issue to enable development to take on more meaningful attributes for Indigenous peoples. Interpretations of the notion of participation have shifted from simply interaction between agents to become a broad thematic issue for a development ideology affirming people of little voice, marginal beliefs, suppressed opportunity and minority-culture status, i.e. high level unfreedoms, must be allowed greater levels of input, autonomy and decision-making control within *their* development matters, largely because they best know *their* development wants and needs. The literature review emphasises that the ability of individuals and communities to exercise control over decision-making and governance is vital for effective and meaningful participatory processes. The case study story affirms this view.

The review cites Hunt's (2005) call for the 'soft' or local side of the local enabling environment to be acknowledged in Australian Aboriginal community development, where a broadened notion of individual and group capabilities becomes relevant to promote local ownership of development initiatives. Under this logic, participation becomes the keystone to identify Aboriginal people's freedoms, and to meaningfully facilitate their development. The literature review emphasises that an EnCDD approach focuses on the micro-level of the enabling environment, on how the participatory agency of individuals and groups can translate to collective decision-making and action around vital issues that relate to and shape specific peoples' day-to-day lives. The Ngalia story demonstrates the potency of endogenous participatory agency at the micro-level of the enabling environment.

At the inception of this research, there was a dearth of academic research into the role of ICTs in Aboriginal community development. Recognition of the role of ICT as a powerful driver of participant-led development is growing, especially within the

paradigm of Indigenous development. Australian examples include: Gunther and Williams (2012), Turk and Hillard (2012), Horner (2011) and Kral (2011).

Understanding of the role of ICT in development is shifting from that of a tool to increase corporate reach and efficiency through globalisation, to a means for more widespread, equitable inter-human communication and adaptive socio-cultural functioning. The revolutionary evolution of ICT developments within the early to mid-2000 period has implications for interaction cost reductions, increased opportunity awareness, cultural adaptability functions, and broader participant interactivity, creating for Indigenous people the opportunity to explore their freedoms through the use of these tools in their development agendas. The Ngalia experiences affirm the veracity of this statement. The potential synergies between interaction opportunities and targeted development needs mean that there is a vital potential interrelationship between ICT4D and remote Aboriginal Australia. Acknowledging that synergistic potential, Bandias (2010, p. 47) stated that 'the impact of mobile telephony on Indigenous communities, Indigenous use of the Internet, and telecommunications policy in regard to remote Indigenous communities, are some of the areas that also warrant further research'. The findings of this research make some contribution to the emergent understandings of the impact of interaction with various ICTs in the context of remote regional Australia.

This research set out to observe the ICT interactions for the development outcomes of marginalised Aboriginal groups, and unpack the multifaceted complexities faced at the micro-level of the environment to provide the reader with holistic understandings of the successes and failures of Aboriginal ICT for development. Initially framed as a partnered university-community research collaboration investigating aspects of Aboriginal development enterprise opportunities, the project evolved to focus on EnCDD and ICT interactions that avoided the intervention and direction of exogenous expert agents. The endogenous conceptual framing and the long-term nature of the project meant multifaceted research outputs were derived with relevant implications for the use of ICT by Indigenous peoples, the role of participation within development projects, Web2.0forDev,

endogenous community driven development (EnCDD), and post-positivist research methodology.

The research sought to question the role of ICTs in addressing the development imperative of remotely located Australian Aboriginals. The key findings of the study are:

- There is a significant role for ICT with Aboriginal EnCDD activities;
- Aboriginal EnCDD involving ICT interaction can create various participatory opportunities to capture advocacy, cultural maintenance, strengthening and economy development themes;
- Endogenous community direction, decision-making and ownership contribute to meaningful ICT interaction;
- The full suite of ICTs created diverse and exploratory development agency opportunities for individuals and the community, and together they created a holistic ICT interaction strategy to pursue meaningful EnCDD experiences;
- The limitations that derive from the case-specific nature of the research findings indicate further research into how ICT technology tools are being utilized by marginalised and disadvantaged peoples is warranted.

The next section discusses a series of insights drawn from critical reflection on the research findings, and ties the major research outputs of a context-specific ICT for EnCDD framework to further research into Indigenous ICT4D, Web2.0forDev, and Aboriginal community development.

10.2 The research framework: EnCDD and ICT interaction for meaningful development

‘Meaningful development’ and ‘EnCDD’ are two key terms that directly shape the logic framing this research’s discussion on the functioning of remote Aboriginal ICT4D. The terms emphasise both the interdependent relationship between the quality of agency processes, i.e., the agent direction, ownership and interaction, and the quality of outcomes. If the imperative for the development opportunities of

remote Australian Aboriginal people is acknowledged, then *their* identification of 'meaningful development' as the targeted outcome becomes vital for actors to determine how to meaningfully improve their standard of living while supporting their cultural identity. The concept of meaningful development can be further unpacked in association with the agency notion of 'adaptive pluralism', where agents act to leverage local meaning to solve problems and achieve wants and needs. As EnCDD relies on local human capital to leverage the reasoned-agency and freedoms of participants in development activities, this research affirms the ICT4EnCDD framework's (Figure 9.2) potential as a guide for the pursuit of meaningful development outcomes. Acknowledging EnCDD as a powerful agency model for meaningful development necessitates closer focus on the participatory elements encompassed in the model, i.e., agentic direction, ownership, and interaction processes, and assessments on how ICT-interaction mobilises meaningful interactions and development agency outcomes.

This research sought to observe how ICT might act as a tool to facilitate EnCDD. The case findings throw significant light on how ICT increases opportunities for agents to participate in EnCDD. ICT was demonstrated as a tool that expanded the opportunity, efficiency and impact of EnCDD across development themes. The findings support this thesis' conclusion that ICT are a useful tool to achieve EnCDD, and to achieve more meaningful development for remote Australian Aboriginal peoples. However, research also identifies that simply engaging with ICT does not ensure that EnCDD will occur, and that outcomes will not necessarily be meaningful for all participants. The findings indicate that ICT practitioners or facilitators need to account for how the physical and social environment influences a participant actor's feelings of self-efficacy and identity when implementing participatory ICT interaction with disempowered peoples. The findings affirm that a number of key-interaction factors must be present in order to achieve the targeted meaningful interaction impact. Extrapolating from the research findings, this thesis contends that for ICT to mobilise EnCDD the following key ICT interaction factors are likely to increase the meaningful quality of development agency:

- ICT access
- Opportunity understanding
- Key neutrally inclusive community agents
- Targeted development aspirations and strategic plans that are collectively identified
- Embedding ICT projects within strategic development plans
- Broad actor participation, i.e., broad networks of participation formed by the pooling of localised kincentric networks, family, language and geo-spatial groups
- High levels of trust between participating agents
- Minimal expert-intervention, which is adaptive, transformative and accommodating of agents needs
- Diverse agent participation representation, i.e., young, old, men, women
- A secure and purposeful physical space for ICT4dev activity to occur
- Wider community recognition and support could provide the basis for a more effective and longer-term approach to ICT-interaction initiatives to build on the lessons of past projects and avoid the investment risks associated with 'one-off' ICT interaction projects.

Marginalised Australian Aboriginal peoples can draw a rapidly evolving range of digital technologies to facilitate development. To overcome the constraints and limitations of normative approaches to development, and capture 'local-advantage', this research affirms the merit of ICT interaction activated through an EnCDD strategy. 'Sixty years of development experience tells us that the pathways to development are varied, guided by different visions, different strategies, and different definitions of progress' (Nallari 2011, p. 4). As stated in the previous chapter, reaching a critical level of community direction takes time and assessments of the requisite time required for project initiatives must recognize that this need may conflict with pragmatic exogenous assessments of project logistics and commitment levels.

10.3: ICT and EnCDD: Global valorisation, implications and future investment areas.

The Millennium Development Goals (MDG), identified in 2000 through strategic input from the UN, Organisation for Economic Cooperation and Development (OECD), World Bank, and the International Monetary Fund identified eight international development goals targeting more equitable human development outcomes. The eight MDGs, as agreed to by the then 123 UN member states, were to be achieved by 2015. The relevance of the MDGs to this research is MDG Target 8F: 'In co-operation with the private sector, make available the benefits of new technologies, especially information and communications' (UN 2001). Specifically, the targets sought to advance:

- Telephone lines and cellular subscribers per 100 population
- Personal computers in use per 100 population
- Internet users per 100 population

(see <<http://www.un.org/millennium/declaration/ares552e.htm>>). In-line with MDG Target 8F, the International Telecommunications Union (ITU), a specialised agency within the UN responsible for ICT investment, developed the World Summit on the Information Society (WSIS). The WSIS identified specific development sub-targets to achieve Target 8F of the MDGs.

The WSIS 2010 mid-term review stated that 'ICT underpin almost every activity within the modern world, and affect almost everyone alive today' (ITU 2010, p. iii). Subsequently, the ITU identified ten ICT specific Targets sought to achieve by 2015 to realise MDG Target 8F. As detailed within the *World Telecommunications/ICT Development Report 2010*, Target 4 sought to 'Connect public libraries, cultural centres, museums, post offices and archives with ICTs' (ITU 2010, p. 69). The WSIS mid-term review discussed the proposed benefits from realising each target, and provides case-examples as indicators for progress and impacts in working towards achieving these goals citing the following case as an example of ITU Target 4. The early stage of the Ngalia case is cited as an example:

Connecting cultural centres can be useful in preserving cultural heritage. For example, in Western Australia as part of the “Saving traditions” project, between 1980 and 2003 a small group of the indigenous Ngalia people generated a lot of cultural research material, including a full Ngalia language dictionary and thesaurus, digital song archives, complex databases of genealogy records, and maps of culturally significant resources — using GPS receivers to plot locations such as waterholes, rock formations and rivers. In 2006, the Ngalia community expanded their work to a youth participatory video project, in order to build on the interest shown by young people in using ICTs. The video project yielded many positive outcomes, including young people using traditional language, referring to plants of cultural significance and explaining their traditional uses. A second video, filmed and edited entirely by four Ngalia boys, further raised interest in the cultural history and provided a marketable product for the community. The Ngalia have continued to take advantage of new technologies to improve their communication facilities, notably by connecting the community cultural centre to a wireless network in 2007. Furthermore, an advocacy-related group around the Ngalia movement — the “Indigenous Land Justice: Ngalia Foundation Appeal” — was created using Facebook (ITU 2010, p. 69).

The implications of the citation of the Ngalia ICT EnCDD activities as an indicator for the international MDG are noteworthy. Not only does this citation indicate and affirm synergies between the theoretical underpinning of Ngalia ICT interaction and the evolving thinking and understandings at the international level on transformative character of development, but it also affirms that an isolated and marginalised Aboriginal community in remote Western Australia can contribute to development evolutions of global relevance and with applicable implications for the Indigenous populations across the world. Lastly, it confirms that criticisms claiming this project’s ICT interactions as superficial, i.e., ‘kids playing with video cameras’, or ‘Aboriginal people downloading music and spending time on Facebook’, if strategically applied to a community development plan, can represent greater development oriented technology adoption, evolution, and progress than casually assumed. It is hoped that this research elevates awareness of the need to invest

into further Aboriginal ICT4dev and EnCDD research to contribute to the ultimate development target to eradicate Aboriginal disadvantage and marginalisation.

10.4 Reflections on the research project

This research project was highly adaptive to the particular development agenda of the participating communities. As such, it was constantly at risk of partnering with communities who no longer wished to interact with ICT as their wants and needs shifted. From its initial conception, three equal case study communities, i.e., Leonora, Collie, and Titjikala, were targeted. During the implementation phase, it soon became apparent that a participant group from within the Leonora community were the only ones expressing a significant desire to embed ICT within their development trajectory at a substantial level. This meant that the researcher would be unable to gain similar high levels of interactivity, and thus, data from either the minor case participants. Hence, the project was adapted to include the Ngalia people of Leonora as the primary case, and the minor cases representing researcher intervened and directed ICT experiences. This responsive and reflexive research structure, focus and project timeframe allowed the researcher to maintain a rich source of participant observations from a community that was 'in control' of directing and owning a multifaceted and adaptive development strategy that incorporated ICT.

The study confirmed the meaningful role of a range of ICT within the Ngalia Aboriginal EnCDD activities i.e., the interactions were:

- Participant instigated,
- Embedded within an endogenous strategic development plan,
- Interlinked with past and present participant defined objectives and outputs,
- Avoided expert intervention or assistance whenever possible,
- Able to contribute towards collectively identified outcomes,
- Noted to have improved efficiency of other endogenous development activities,

- Created multiplier opportunities, impacts and outputs for participants,
- Increased levels and depth of community participation within select areas of their development activities,
- Facilitated bypassing a number of historical development barriers (youth disengagement, media (mis)representation, lack of information access).

The fact that ICT was utilised within a broad range of development themes by Ngalia participants further validates the conclusion that they can be used to leverage more meaningful EnCDD. As discussed in Chapters 8 and 9, the various ICT applications mobilised interaction involving the thematic development areas of advocacy, cultural maintenance, and strengthening, which encapsulated engagement, capacity enhancement, and resource mobilisation agency. These development themes are well cited as the vital voice raising, cultural valorisation and capability agency aspects of people-centred and action-oriented development by marginalised groups, especially for Indigenous peoples.

However, the lack of follow-on projects and strategic embedding of ICT projects within community initiatives in the minor cases produced less positive outcomes.

This result was due to:

- Low history of participants using ICT for development applications
- Limited understanding of how ICT may be applied to their development aspirations to improve efficiency
- Vacancy of a 'key community agent' well versed in ICT4D applications
- Low trust levels between researcher and participants
- Limited capacity for the researcher to maintain ongoing physical contact with participants
- Lower levels of ICT access.

The Ceduna case outcomes sit between the successes of the Ngalia people and the failures of the Collie and Titjikala initiatives. While the Ceduna project was researcher facilitated and short term, more positively a community participant

shaped the activities, had identified their need, and communicated the need of expert training and guidance. Hence the following endogenous agency direction aspects were included in the Ceduna case:

- Presence of an emerging 'key-community agent', who was motivated and experienced in ICT (PV) for cultural maintenance.
- Comprehension of how video could be used to achieve a community identified goal.
- Existing participant – institution trust that enabled the researcher by association to leverage trust for his interaction, i.e., past experience meant that the participants trusted the institutional representative to bring in someone who would respect them and their needs.
- The presence of a community centre, i.e., the Ceduna Aboriginal Arts Centre, where an ICT base could be established giving local participants' ownership over activities and equipment.
- Available finance to purchase specialised ICT equipment, giving participants ownership of task-capable hardware.

Drawing together these multifaceted assessments of the research, the findings indicate the usefulness of the thesis's ICT4 EnCDD framework model to guide future research and practice into the functioning of remote Australian Aboriginal ICT4D.

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Every reasonable effort has been made to acknowledge the owners of copyright material. I would be pleased to hear from any copyright owner who has been omitted or incorrectly acknowledged.

Appendix

PhD Interview Questions (Working Draft):

Semi-structured interview: Communities with ICT

1. Tell me about your involvement in projects within the community;
 - a. *What is your role?*
 - b. *Did you choose this role, or did someone else give it to you?*
 - c. *Are you happy with this role?*
 - d. *Why is this so?*
 - e. *What would you like to be involved in?*
 - f. *Why?*
 - g. *Is there anything stopping you from acting in this capacity?*
 - h. *Why?*

2. Tell me about your views on the direction of the community development projects?
 - a. *What are your views on the community-based work?*
 - b. *Why is this so?*
 - c. *Is there anything you would like to change within the projects?*
 - d. *What?*
 - e. *Why?*
 - f. *Do you understand everything that is going on in the community-based projects?*
 - g. *What don't you understand?*
 - h. *Can you think of anything that might be preventing you from understanding the projects better?*
 - i. *Would you like to understand it better?*
 - j. *Do you think other people are clear about the purpose and objectives of the projects?*
 - k. *Who?*
 - l. *Why?*

3. Have you been involved in any of the multimedia work within the projects?
i.e. digital photography, filming, editing, recorded interviews, web design, skype, email, conference presentations on work, data-base creation etc...
 - a. *What are your thoughts on this work?*
 - b. *Do you think it positively contributed to the community projects?*
 - c. *Why?*
 - d. *How?*
 - e. *Where you directly involved in any of this work?*
 - f. *What was your level of involvement?*
 - g. *Did you contribute to any decisions relating to the type of digital work carried out?*
 - h. *Would you like have to been involved?*
 - i. *If yes, in what aspects?*
 - j. *If not, why?*
 - k. *What don't you want to be involved in?*
 - l. *Why?*

4. Did you have all of the skills and capacities required to interact with the ICT?
 - a. What capacities did you possess?
 - b. What capacities didn't you possess?
 - c. What existing capacities did you build on?
 - d. What new capacities did you develop?
 - e. What capacities would you have liked to build on or develop, but for some reason or another could not?
 - f. Why do you think this was the case?
 - g. How could this situation be changed?
 - h. Do you think this affected your ability to engage with the project?
 - i. Why
 - j. Do you think it affected the overall output of the project?
 - k. Why

5. Have you seen any of the videos, photos or web pages produced in this project?
 - a. *Which ones?*
 - b. *What did you think of them?*
 - c. *Were they interesting?*
 - d. *What are some of the key-uses for these items?*
 - e. *Do you think they positively contribute to the greater development projects?*
 - f. *Why?*
 - g. *Have you shown them to anyone else?*
 - h. *If yes, who?*
 - i. *What did they think?*
 - j. *What is their relation to you?*
 - k. *How might they be more interesting?*
 - l. *What did you think of the information in the videos?*
 - m. *Was it accurate and allowed to be given?*

6. Who can give information to go on the videos, data-bases and web pages?
 - a. *Did these people give the correct information?*
 - b. *Are there any issues with miss-representation?*
 - c. *Who should be allowed to give information on a particular subject?*
 - d. *Who should be allowed to view the information on the videos/web page?*
 - e. *Why?*
 - f. *Does information contribution and access cause problems and limitations when working with digital technology?*

7. Did you learn anything by viewing the videos/web pages?
 - a. *What?*
 - b. *Why?*
 - c. *How?*

8. Do you think anyone else learnt anything form viewing the videos/web page?
 - a. *Why was this so?*
 - b. *What did they learn?*
 - c. *How could this be improved?*
 - d. *Do you think they learnt anything from being involved in the creation of the videos/web pages?*

7. What were some of the applications used for the video's, databases, Web page?
 - a. *What makes you say this?*
 - b. *What was the outcome?*
 - c. *How could this outcome be further improved?*

Consent form for PhD Project Titled:

“Information Communication Technology (ICT) and endogenous community-driven development: a remote Australian Aboriginal case study”

Student / Staff: Guy Singleton 12188451 / 224924H

Muresk Institute of Agribusiness,

Curtin University of Technology.

PROPOSED CONSENT FORMS FOR PROJECT PARTICIPATION, INTERVIEWS AND COMMUNITY MEETINGS.

- 1. Audio recorded**
- 2. Non audio recorded**
- 3. Consent form for parents, guardians, and trusted community members
Audio recorded**
- 4. Consent form for parents, guardians, and trusted community members
Not audio recorded**

Muresk Institute

Consent form (Participation, Interviews and Community Meetings)

1. Audio recorded

PhD Project Title: "Information Communication Technology (ICT) and endogenous community-driven development: a remote Australian Aboriginal case study"

Researcher's name:

I have received information about this research project.

- I understand the purpose of the research project and my involvement in it.
- I understand that I may withdraw from the research project at any stage.
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential.
- I understand that interviews and community meetings may be audio taped if all participants agree, and that my identity can be masked if I request this.
- I understand that the researchers may take notes during interviews and community meetings.

Name of participant:

Signed **Date**

I have provided information about the research to the research participant and believe that he/she understands what is involved.

Signature(s) of Researcher:

Date:

Muresk Institute

Consent form (Participation, Interviews and Community Meetings)

2. Not audio recorded

PhD Project Title: “Information Communication Technology (ICT) and endogenous community-driven development: a remote Australian Aboriginal case study”

Researcher’s name:

- I have received information about this research project.

- I understand the purpose of the research project and my involvement in it.

- I understand that I may withdraw from the research project at any stage.

- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential.

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Name of participant:

Signed **Date**

I have provided information about the research to the research participant and believe that he/she understands what is involved.

Signature(s) of Researcher:

Date:

Muresk Institute

Consent form (Participation, Interviews and Community Meetings)

3. Consent form for parents, guardians, and trusted community members

Audio recorded

PhD Project Title: "Information Communication Technology (ICT) and endogenous community-driven development: a remote Australian Aboriginal case study"

Researcher's name:

- I have received information about this research project.
- I understand the purpose of the research project and’s involvement in it.
- I understand that may withdraw from the research project at any time.
- I understand that while information gained during the study may be published, will not be identified and my personal results will remain confidential.
- I understand that interviews and community meetings may be audio taped if all participants agree, and that’s identity can be masked if I request this.
- I understand that the researchers may take notes during interviews and community meetings.

Name of participant:

Name of parent, guardian, or trusted community member:

.....

Signed **Date**

I have provided information about the research to the research participant and believe that he/she understands what is involved.

Signature(s) of Researcher:

Date:

Muresk Institute

Consent form (Participation, Interviews and Community Meetings)

4. Consent form for parents, guardians, and trusted community members

Not audio recorded

PhD Project Title: “Information Communication Technology (ICT) and endogenous community-driven development: a remote Australian Aboriginal case study”

Researcher’s name:

- I have received information about this research project.
- I understand the purpose of the research project and’s involvement in it.
- I understand that may withdraw from the research project at any time.
- I understand that while information gained during the study may be published, will not be identified and my personal results will remain confidential.
- I understand that interviews and community meetings may be audio taped if all participants agree, and that’s identity can be masked if I request this.
- I understand that the researchers may take notes during interviews and community meetings.

Name of participant:

Name of parent, guardian, or trusted community member:

.....

Signed **Date**

I have provided information about the research to the research participant and believe that he/she understands what is involved.

Signature(s) of Researcher:

Date:

Participant Project Overview

Plain language Statement for Research Project titled: *Information*

Communication Technology (ICT) and endogenous community-driven development: a remote Australian Aboriginal case study".

What is this project about?

This ethically approved (Curtin University, 2006) PhD project aims to investigate how various Aboriginal community groups use Information communication technology (ICT) such as computers, Internet access, video camera's and digital photography as tool's to help develop their community based objectives, such as natural resource enterprise, cultural maintenance and revitalisation, individual engagement and capacity enhancement.

Many other Indigenous groups around the world have found that ICT can be a particularly useful community tool, used in a wide range of applications such as recording/sharing cultural knowledge, planning/managing community development initiatives, improving literacy skills of individuals, encouraging younger generations to partake in cultural and community activities and initiatives.

This project seeks to review these applications in a contemporary Aboriginal environment.

What will this project involve?

The researcher, Guy Singleton (Curtin University) would like to engage interested Aboriginal community groups and such as yours and partner with you to assess the use of ICT.

Should you decide to partake in this project, Guy would hope to gain an understanding of your community group and what issues/projects you are currently working on or would like to undertake in the future. We would then look at what multimedia technologies we could potentially apply to your community projects

and discuss a) how to apply them in a culturally sensitive manner, and b) how the application of these technologies may empower or disempower you to achieve your aims and objectives.

We would then aim to embed select ICT (chosen by you!) within your initiatives as directed by you; this is a community driven project and you the participants will make the decisions! At the end of the project we want to know if there was any benefit in using multimedia technology to you and your community groups. Did it help you to achieve your goals? Has it allowed you to do things you never thought you were capable of? In order to do this, we need to record information during the project to identify if such technologies do actually help you and your community.

Any information recorded will be kept highly confidential and will pose no risk to the participant through exposure to third parties. Names will be replaced with codes, so if your name is John, you might be given the code "person F." This code would be used in place of your name in all reports, ensuring data cannot be traced back to you.

Please contact Guy directly on either 0400024417 or at guy.singleton@gmail.com should you have ANY further queries regarding this project or your involvement in it.

Thank you for your participation in advance!

Regards,
Guy.

End of Document.