

# **An Action Research Approach to Strategic Information Systems Planning in a Non-Profit Organisation**

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## **Abstract**

*Strategic Information Systems Planning (SISP) in non-profit organisations (NPOs) has not received adequate attention in the research literature. This study addressed questions of how (and how well) Soft Systems Methodology (SSM) could be employed for conducting SISP in an NPO. Action Research (AR) was used as the primary research method in this study, supplemented by a survey of participants at the end. This paper exemplifies AR through the description and analysis of the use of SSM and other tools both for the provision of benefit to the organisation and for qualitative data collection and analysis in support of the research.*

## **INTRODUCTION**

The paper explicates the research process in an Action Research study undertaken to address the need for conducting Strategic Information Systems Planning (SISP) in a non-profit organisation (NPO). SISP has been studied widely by researchers in the past two decades (Lederer and Sethi 1988; Lederer and Sethi 1992; Earl 1993; Falconer and Hodgett 1996a, 1996b; Brown 2004). However, most of the research literature that addresses SISP issues concerns large, for-profit organisations, overlooking small-medium businesses and non-profit organisations (NPOs). Furthermore, there has been very little attempt made in the literature to distinguish between for-profit and NPOs in the context of strategic information systems planning. Even though NPOs form an important sector of the Australian economy and provide important services to the community, there is a lack of SISP studies in NPOs in Australia. The present study addresses this gap in the literature.

## **LITERATURE REVIEW**

### **Strategic Information Systems Planning**

Lederer and Sethi (1988 p. 445) define SISP as “the process of deciding the objectives of organisational computing and identifying potential computer applications which the organisation should implement.” SISP has been found to rank high on the agenda for senior IS and business executives in the for-profit sector both in advanced and newly industrialized countries (Pervan 1994, 1997; Palvia and Palvia 2003; Luftman et al. 2006). The process of SISP, however, is generally quite challenging and resource intensive. Based on their survey of small, medium and large businesses in Australia, Falconer and Hodgett (1996a p. 95) found that “although many recognize the value and importance of information in their organisation, a large number do not formally undertake information systems planning. The quality of information systems planning, where it is done, is questionable, with most organisations failing to produce a portfolio of projects.” While most SISP related research concerns large for-profit organisations, Travis (2004) has illustrated the importance of a soft approach to IS planning in the context of small businesses through SSM based SISP studies carried out in the case of small pharmacies in Western Australia. However, there is no equivalent study of SISP in the case of the non-profit organizations.

### **Non-Profit Organisations**

There are about 700,000 organisations in the non-profit sector in Australia and their economic and social contributions are significant (Philanthropy Australia 2003). McNamara (1999) highlighted some key problems relevant to strategic planning in non profit organisations:

- Most non-profits have small staff size and budgets, but the magnitude of community needs that they deal with may be quite large. Therefore, while other types of organisations face challenges in planning, the issues become particularly complex for small non-profits.
- The lack of adequate funds and career development opportunities makes it hard to attract and retain management and key staff. This leads to frequent loss of expertise and impediments to the organisation's ability to make progress.
- The focus of planning in non-profits tends to be on quickly addressing immediate issues rather than on sophisticated and comprehensive strategic planning due to the perennial lack of time, money and adequate resources. The major challenges for the facilitator in this setting is to introduce staff to the concepts and processes associated with planning and help the organisation focus and sustain its limited resources on the planning process so that appropriate strategies can be developed.

Given the challenges in conducting strategic planning in NPOs and the need for accurate and timely information in these organisations, the necessity for undertaking SISP processes in these organisations cannot be ignored. Reliable information is of particular importance to non-profits for identifying the requirement of certain services in the local community, determining the optimal service delivery mechanisms and evaluating outcomes (Went 1995). While internal uses of information systems may include the tracking of donors, management organisational resources and financial record-keeping, external uses may include providing information about services to the local community, educating members of the community, solicitation of funding and making operations transparent to government agencies and donors (Klemz et al. 2003).

### Soft Systems Methodology

Information may be embedded in organisational structures, routines and procedure, attitudes of groups or individuals, informal social networks and organisational stories. Therefore more attention should be given to the informal, social and political nature of an organisation during IS planning or development processes and a soft approach to these issues is desirable (Abrahamson 1991; Galliers and Swan 1997). Soft Systems Methodology (SSM) provides a way for tackling real-world problem situations which require an understanding of an organisation's culture in order to find an appropriate solution (Checkland and Scholes 1990). The two-stream process model of SSM used in this study is shown in Figure 1. Two streams of enquiry that interact with each other are undertaken to debate issues and seek meaningful changes. The cultural stream of enquiry consists of an examination of the intervention itself as well as of the situation as a social and political system. In the logic based stream of enquiry, suitable human activity systems are defined and models based on the root definitions of these systems are compared with the real world situation.

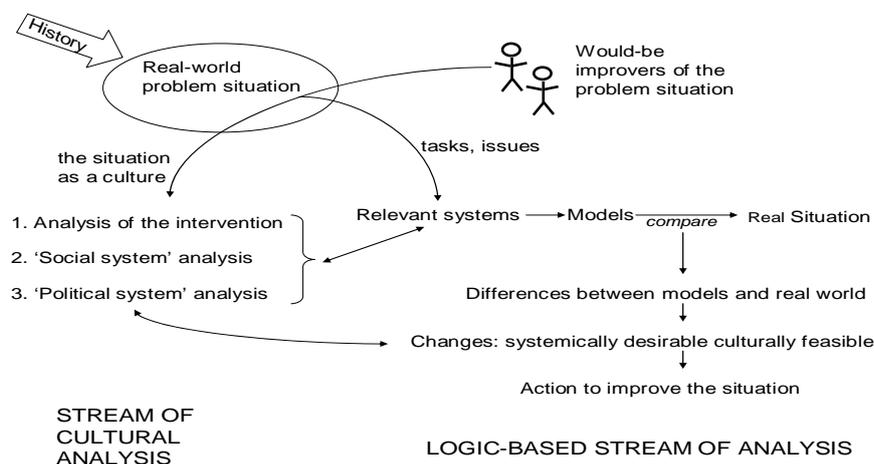


Figure 1: The two-stream enquiry process of SSM (Source: Checkland and Scholes 1990 p. 29)

## RESEARCH METHOD

The aim of this research is to explore the use of Soft Systems Methodology for conducting SISP at a community based non-profit organisation in Australia. The overall research question is:

*How can SSM be adapted as a framework for strategic information systems planning in a community based non-profit organisation?*

This study used Action Research (AR) as its research method. As described by Wilson (1984), AR is identified by its unique nature which involves “simultaneously bringing about change in the project situation (the action) while learning from the process of deriving the change (the research).” It was an appropriate method for this study for the following reasons:

- The problem outlined by the research question can best be learned about in a real situation.
- The study involved intervening in a problem situation and researching a way to act and bring about improvement in that situation. This was done through the process of facilitating SISP using SSM in the NPO.
- Apart from the advancement of knowledge, there was a need to provide value to the organisation at the end of the study, in order for the organisation to agree to participate in the study. The agreed upon practical outcome for the organisation was a strategic IS plan.

Figure 2 illustrates the seven-step process of action research as described by Checkland and Holwell (1998). In the context of this study the steps can be broadly outlined as follows:

1. The problem situation or area of concern (A) was defined by the need for undertaking SISP in a specific NPO, the Asthma Foundation of Western Australia (AFWA). However, what issues the SISP process should address and how it should be carried out were not clearly understood at the beginning of the study, making the study an ideal candidate for an SSM based Action Research approach.
2. The role of the first author of this paper was to act as the onsite researcher and the facilitator of the SISP process using SSM. The second author acted as the supervisor on the research project and guided the first author through the process of planning actions and reflecting on the experiences from actions taken in the context of this study. The members of the management team at AFWA and key operational staff acted as participants in the SISP process.
3. Systems thinking provided the framework of ideas (F) and this was embodied in the declared methodology (M) – SSM (specifically the two-stream model of SSM).
4. The onsite researcher took part in the change process by facilitating the SISP process using SSM and then delivering the final strategic IS plan to the organisation.
5. The process of applying SSM required the authors to think and rethink about how best to adapt SSM to the study setting. This included building support for the study amongst management team members and identifying champions (Bhattacharjya and Venable 2006a, 2006b), simplifying the language of SSM and relying more on one-on-one interviews rather than workshops.
6. The approval of the strategic IS plan by the CEO and the management team marked the point of exit from the study.
7. Reflection on the study was carried out through the maintenance of a research journal throughout the study. The learning experience with respect to F, M, and A was also aided by the discussions between the onsite researcher and her supervisor throughout the course of the study. The findings of this paper summarise the reflections from this experience.

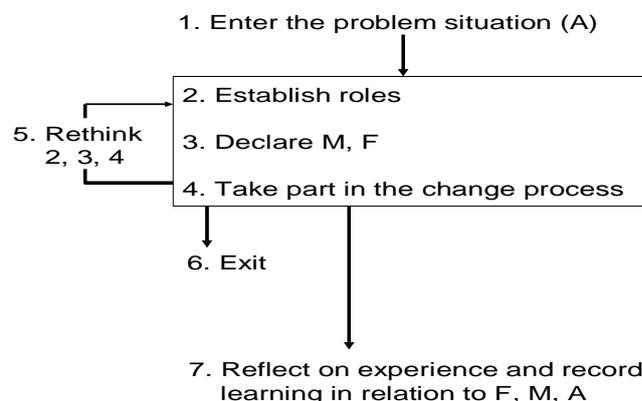


Figure 2: The process of action research (Source: Checkland and Holwell 1998 p. 15)

The data gathering process conducted by the researcher involved the development of a rich organisational text suitable for interpretive analysis, including the analysis of documents, a number of one-on-one interviews with

management and operational staff, and a couple of management workshops. The actual timeline of key events in the data gathering and analysis process will be discussed in a later section describing the SISP study using SSM.

## **THE NON-PROFIT ORGANISATION SELECTED FOR THE STUDY**

The study was undertaken at the Asthma Foundation of Western Australia Inc., a small community based non-profit organisation in Australia. The AFWA provides quality asthma education and support services to community members with asthma, their carers and families (AFWA, 2004). The AFWA also funds local medical and scientific research into asthma. It has a number of major corporate and government sponsors. The Foundation is a member of the Asthma Foundations of Australia and plays a significant role in the development of strategies and implementation plans for the treatment of asthma on a national level. It collaborates with various national bodies and government agencies on important issues to ensure the delivery of services in a cohesive but state-specific manner. It has 26 staff members and also relies on the support of over 200 community volunteers.

## **THE SISP STUDY USING SSM**

### **Preliminary examination of the real-world problem situation**

In early 2005, the school of IS at the authors' university approached the Asthma Foundation with the possibility of a student researcher at the school undertaking an IS planning project under the co-supervision of the Asthma Foundation management and a faculty member at the school. The project was well timed, since with a new CEO at the helm and the recent review of the organisation's strategic plan and existing IT infrastructure it was becoming fairly obvious to the management that their existing information systems were not meeting their business needs. Two pre-project informal interviews were held with the CEO and the Senior Project Officer before mounting the study. At the first informal interview, held in April 2005, it was agreed that the CEO and the Senior Project Officer (who reports directly to the CEO and was responsible for various supporting activities such as brochure development) would jointly supervise the project. The interview was also useful for the researcher to explain her background and gain an initial understanding about the scope of the study. It was agreed that the study would commence in mid-June 2005.

The second informal interview held in mid June 2005 was used to discuss the planning methodology with the CEO and the Senior Project Officer. The researcher broadly outlined the planning methodology, SSM, using simple language and explained that the methodology was flexible and allowed discussion and debate amongst staff. This was thought to be particularly useful in this situation as the CEO felt that the staff's perception of IS issues in the organisation may be different from his own and these perceptions needed to be brought out during the planning process.

A number of important documents, including copies of the organisation's strategic plan, business unit plans, the last annual report, a summary of the organisation's IT infrastructure and application portfolio created by the organisation's IT service provider, newsletters and organisational chart were obtained during the course of the interviews.

It was decided that interviews with management team members would be arranged first, followed by interviews with some of the staff. It was felt that business unit heads (who were also members of the management team) would be able to provide some recommendations regarding who in their units should be interviewed for the purposes of the project.

The researcher also explained that an analysis of the problem situation would be undertaken by the researcher based on the documents provided on that day and the interviews to be subsequently conducted. The results of this analysis would be forwarded to the CEO and the Senior Project Officer for feedback. Then a decision would be made regarding who amongst the interviewed staff needed to be involved in the discussions for the development of IS strategies for the organisation and the planning and prioritisation of appropriate systems. These discussions would be undertaken in workshops facilitated by the researcher. The final plan would be created based on the discussions at the workshops.

However, a short one-on-one discussion between the researcher and the Senior Project Officer immediately after the joint interview, gave the researcher the first indication that the project might not go according to plan. The Senior Project Officer seemed to be of the opinion that staff members might not be willing to participate in workshops due to other commitments and would want only limited involvement with the project. She felt that the project would be best conducted through a single one-on-one interview with each staff member to be involved with the project. An excerpt from the researcher's journal in this context noted that: *"It was unclear whether the Senior Project Officer's lack of enthusiasm for a facilitative process was because of her own lack of desire to be too involved with the project or because of her lack of influence with other senior staff members or a combination of both."*

The interviews with staff members were each approximately half hour long and carried out between 22 June and August 31 2005. The reason for spreading out the interviews over this period was the lack of availability of staff

members. The set of interview questions were emailed to each interviewee a couple of days prior to each interview. The questions were aimed at getting to know the staff members and getting a broad understanding of who needed to be actively involved during the course of the project. The interviews were taped, but the interviewees were told that the contents of the interviews would be kept confidential.

Overall, the interviews revealed that there was a general consent among management that this study was essential for aligning the organisation's information systems with its business needs, but, there was also an initial reluctance on the part of most interviewees to commit to a close involvement with the project due to a number of other demands on their time. It was clear to the researcher that to ensure continued engagement of all participating staff with the IS planning process it would be essential to demonstrate to participants the usefulness of their input and to build participants' trust in the researcher's ability to lead the study in the right direction. The interview summaries were emailed to participants and feedback was received via email.

### The stream of cultural analysis

SSM's cultural stream of analysis consists of three different types of analysis: an analysis of the intervention, an analysis of the organisation as a social system and an analysis of it as a political system (Checkland and Scholes 1990). This analysis was carried out by the researcher based on the pre-project informal interviews, the documents provided, and the subsequent interviews with staff between June 22 and August 31 2005. The purpose of the social and political system analysis was to help the researcher understand the culture within which the project was being undertaken, in order to keep the study on track. The analysis was continuously refined throughout the duration of the study. One of the key outcomes of the analysis was to identify senior members of the management team who could clearly see the long term value of the study and motivate their colleagues to engage in the study and join in the workshops (Bhattacharjya and Venable 2006a).

### The logic based stream of analysis

Based on the individual staff interviews between June 22 and August 31, 2005, the following analyses were carried out: 1) An analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT) in the context of the organisation as a whole, 2) an analysis of Critical Success Factors (CSFs) for the organisation, 3) analysis of the organisation's Value Chain, and, 4) Porter's Five Forces analysis in the context of the non-profit sector. The details of these analyses are presented elsewhere (Bhattacharjya 2006). An overall rich picture (Figure 3) was also composed from partial rich pictures sketched during the individual interviews with staff members.

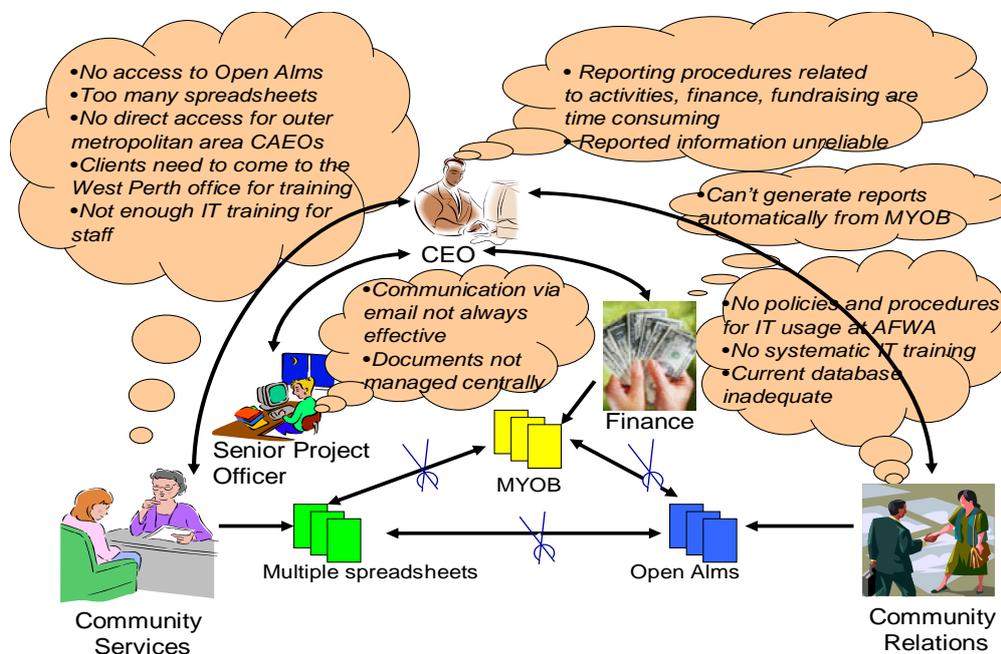


Figure 3: A rich picture representation of the AFWA problem scenario

As shown in Figure 3, the three primary business units of the AFWA are Community Services, Community Relations and Finance. Because of the varying nature of their activities, the three different areas had different primary concerns related to information systems. The CEO's primary concerns included providing timely and accurate information to the Board as well as for increasing fundraising. Community Services members were concerned with being able to provide more courses online and for improving activity reporting. Community

Relations was concerned with being able to perform detailed analysis of fundraising campaigns. The Senior Project Officer's role involved supporting the management and staff in accomplishing their tasks, e.g., by developing an Excel based activity reporting system. Her concern was with the improvement of communication and document management within the organisation. Problems were caused by the lack of integration between systems used by the three business units. There was considerable double handling of data due to the maintenance of multiple spreadsheets by Community Services staff members. Community Relations used the Open Alms database for maintaining membership and sponsorship information. However, very few staff members had access to the database and the database suffered from inconsistencies and redundancies. There was inadequate skill for making better use of the existing information systems, e.g., development of macros for MYOB, the database application used by the Finance business unit.

The results of the various analyses and the composite rich picture were emailed out to interviewees towards the end of August 2005 and feedback was requested. The feedback was compiled and emailed back to participants. This was a deviation from the original plan by the researcher to carry out activities in the logic-based stream of analysis during workshops.

Next, the researcher developed a set of preliminary recommendations for IS mission, vision, goals and strategies for the organisation based on the analyses. These were emailed to the management team and other participating staff members for their feedback towards the end of August, and feedback was received during the end of August to the mid September period. The feedback obtained was compiled and presented at the first management workshop held at the end of September 2005. The IS goals and strategies were discussed and debated in this meeting.

A list of possible human activity systems and corresponding computerized systems based on the IS strategies agreed upon, were also discussed at the first workshop in September 2005. A discussion was also held on skills available internally and standard IS solutions available in the market. The discussion was further informed by some of the information gathered by the CEO and the Community Relations Manager for the purpose of an IT infrastructure grant proposal submitted to a local funding body in August 2005. Preliminary decisions regarding benefits of candidate systems and prioritisation of these systems was also undertaken by the management team at the meeting. A second meeting was held in mid October to further discuss the prioritisation of the systems and to set timelines for individual projects.

The IS plan was compiled from the information obtained from the management team meetings and the detailed cost-benefit analysis in subsequent one-on-one meetings held in November 2005 with the CEO and the two business unit managers. The plan was emailed to the management team and other non-management staff for feedback. The feedback was incorporated into the final IS plan and this was emailed to the management team and other non-management staff for their feedback.

## **THE PRACTICAL OUTCOME AND MAJOR FINDINGS OF THE STUDY**

### **The practical outcome for the client organisation – the strategic IS plan**

The outcome of the study was a three-year strategic IS plan for the organisation that outlined the mission, goals, objectives and strategies for IS in the organisation. A number of candidate systems were identified for development or procurement over the next couple of years. These included an activity reporting system, a web-based learning and teaching system for providing asthma education, a web-based retail system for asthma related products and a system for performing detailed analysis of fundraising campaigns. The use of SSM in the study also allowed the identification of two non-computerized systems - a decision making system for developing IS policies and procedures for AFWA staff and a system for providing staff with adequate IS training for them to be able to perform their jobs more effectively and efficiently.

A survey of participating staff after the finalisation of the IS plan showed that participants had found the planning process to be very useful and felt that the plan clearly addressed their organisational needs.

### **Learning with respect to the declared methodology (SSM) employed in this Action Research study**

Learning was produced from the way in which the methodology was adapted for the study. The two-stream process model of SSM was adapted for the study in the following ways:

- Initially it had been planned to hold the entire planning process in a series of workshops involving management and staff after a round-of one-on-one interviews, but this was not possible due to the lack of staff availability. Instead the planning process relied heavily on one-on-one interviews, and email exchanges. The one-on-one approach adopted was found to have the following advantages:
  - It allowed those who would have had trouble expressing their views during a group process to speak more freely;

- It allowed the researcher to build the participants' trust in her ability to guide the planning process and thus increased their willingness to participate in the process;
- It allowed the participants the flexibility of providing essential input according to their own schedules without feeling any additional burden on their already full list of weekly responsibilities. No individual member of the staff or management team had to spend more than four hours on the project over the entire period of the study.
- The researcher found it necessary to simplify the language of SSM in order to discuss the SSM process with participants throughout the study, since only one participant had prior experience with SSM. This was done in order to allow staff and management to have a framework with which to conduct a similar SISP study in the future. In describing SSM to participants in the beginning of the study, the language of SSM was not used, The mnemonic CATWOE was described as BATROE, i.e., C (Customers) in the original mnemonic was replaced by B (Beneficiaries) and W (Weltanschauung) was replaced by R (Reasons for wanting to make the transformation). Also the term 'system definition' was used instead of 'root definition' in initial working documents as participants were found to relate better to the former.
- Rich pictures, CATWOEs, root definitions and conceptual models are tools traditionally associated with SSM. However, SSM is a flexible methodology and it was possible to use a number of other tools and techniques such as SWOT analysis, CSFs, and Porter's Five Forces analysis within the SSM process for getting a deeper understanding of the organisational context in the process of conducting SISP. The SWOT analysis highlighted organisational weaknesses (e.g. high turnover, lack of IT related training for staff, inefficient information systems) and the opportunities for addressing them. The analysis of organisational CSFs focussed attention on the need for continuing to provide high quality asthma related services to the community. This led considerations of how information systems could contribute to improving these services and providing new ones. The Porter's Five Forces analysis helped to highlight the fact that the organisation need to compete with other NPOs for the charitable dollar and there was a need for acquiring information systems to help it compete in this respect.
- The standard two-stream SSM process model shown in Figure 1 was modified for undertaking SISP as shown in Figure 4. The modification took place through an AR process of reflection on what was learned through actions undertaken in different stages of analysis within the SSM process and what further analysis was required in order to gain knowledge about the problem setting and develop the IS plan. The onsite researcher made a conscious attempt to let the problem situation drive the stages of analyses and how they were conducted within the SSM framework, rather than proceed from a pre-conceived notion of what needed to be done based on SSM based studies undertaken in other types of environments. There was a clear emphasis on learning about the area of concern (how to conduct SISP in a NPO) and the methodology (SSM) throughout the study.

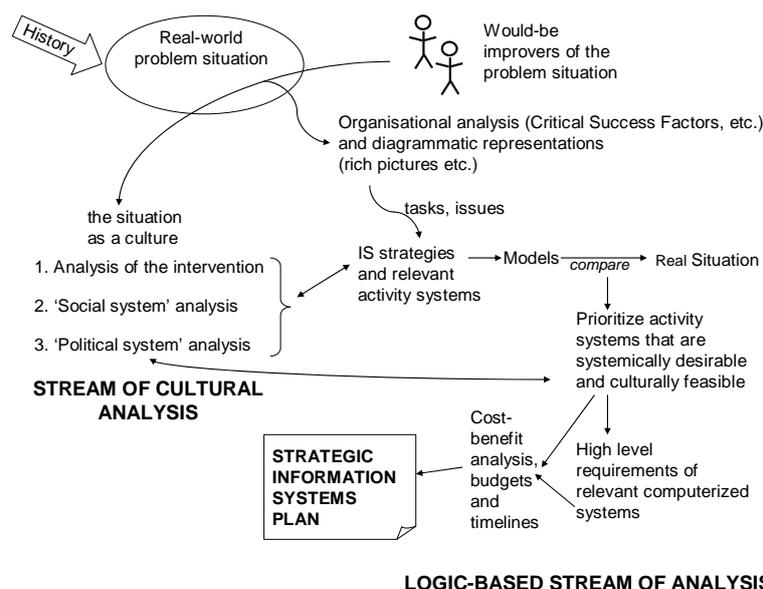


Figure 4: The modified two –stream SSM process model for conducting SISP

### Learning with respect to the Area of Concern (A) in this Action Research Study

Undertaking the SISP study using SSM led to the following findings with respect to the area of concern (A) in this AR study – conducting SISP in a specific non-profit organisation.

- SISP using SSM requires taking a systemic view rather than an IT centric view of required transformations. This helped lessen the fear that many participants had in expressing their views. The researcher was able to explain to the participants that the procurement or use of any technology would be driven by the organisational context and the interviews and discussions were basically for determining organisational needs and did not need any technical expertise.
- Undertaking the SISP process also helped to increase communication and sharing of knowledge between management team members on IS related issues. Prior to the study there was very little discussion on such matters. While the plan was being developed by the researcher, periodic feedback was required from management. This necessitated discussion between management team members even without the presence of the researcher.
- A key task as an outsider also involved building trust amongst participants through interviews and feedback within the flexible and adaptive framework of SSM. The initial culture of wariness was gradually transformed into confidence in the researcher's empathy for the problem situation.
- The SISP process also required management to reflect on the strategic plan to ensure the alignment between IS and organisational goals and objectives. This was a very useful exercise, since one senior staff members had mentioned in the early part of the study that the strategic plan is seldom referred back to in most management decision making.
- The planning process resulted in the recognition of the need for providing staff with having an adequate IT training program for staff rather than the existing ad-hoc approach to training.
- The SISP process also helped to strengthen the customer service focus of the organisation through the identification of the need to develop a web based teaching and learning system for health professionals in the remote regions of Australia.
- The SISP process helped to emphasise the need for analysing fundraising campaigns in order to focus the fundraising efforts of the organisation.

As the AR study progressed, the area of concern remained that of conducting SISP in the specific non-profit organisation. However the process came to place emphasis on information systems for generating revenue and providing new services to the wider community.

### **Reflections on the Action Research (AR) Study**

This AR study was guided broadly by the principles set out by Klein and Myers (1999) for interpretive field studies. The study began through a process of contextualisation, with the onsite researcher obtaining documents and background information from the CEO and Senior Project Officer in order to place the problem in context. In keeping with the fundamental principle of the hermeneutic circle, the researcher's and participants' preliminary understanding of in the study evolved into a complex whole of shared meanings through the interaction between the onsite researcher and participants. Since this was an action research study, the interaction involved the undertaking of various analyses employing SSM and several tools within the framework of SSM. Through this process the researcher gained a deeper understanding of the non-profit environment in which the study was conducted as well as a better understanding of SSM and its application to SISP. The organisational participants learned about SSM and the process of conducting SISP from their interactions with the researcher. The researcher took care to be sensitive to conflicting interpretations of participants with respect to causes for existing IS problems. It was also necessary to address the conflicting expectations of participants with respect to the prioritisation of systems through discussions in workshops. Moreover, the initial research design based on the researcher's preconception regarding the importance of carrying out the entire SSM process through a series of workshops underwent revision through the AR study. As seen in the earlier sections on learning with respect to the methodology employed in this study, the process of carrying out the study through a mixture of one-on-one interviews and workshops added to the richness of information produced and the success of the study.

Baskerville and Wood-Harper (1996) note the danger of AR resembling consulting unless accompanied by a process of rigorous documentation and conscious reflection on learning. The onsite researcher maintained a detailed research journal throughout the study. These research notes were helpful in discussions between the authors and in guiding conscious reflection on the learning experience from this study. Some of the learning with respect to M and A are listed in the previous sections. The SSM process involved reflection by the researcher based on actions undertaken at each stage and the additional information required for formulating the IS plan. Decisions regarding the need and timing for workshops and follow-up one-on-one interviews as well as the selection of various tools in the SSM process involved a cyclical process of action and reflection throughout the study.

Another issue that needs to be discussed in the context of this work is the difficulty in reporting an interpretive study. Keeping in mind the difficulties in evaluating interpretive research (Klein and Myers 1999), it is important to give the reader adequate context for the data analysis, and to present conclusions in evidence of the fact that the choice of research method was appropriate. The fact that this paper attempts to be a research method paper while trying to exemplify an action research study makes this task doubly difficult.

## CONCLUSIONS AND FUTURE WORK

The paper exemplifies an AR study that employed SSM for conducting SISP in a non-profit organisation. In keeping with the objectives of an AR study, there was a practical outcome of value to the client organisation in the form of a strategic IS plan. The study provided a learning experience for the onsite researcher with respect to the methodology (SSM) and the area of concern (conducting SISP in a NPO) as well as an opportunity to reflect on AR itself.

Although the results of the study are encouraging, it is important to note that like most AR studies, this study was conducted within a narrow domain – a single non-profit organisation in Australia. Another limitation of the study was the fact that the way in which this study was conducted and the findings from it were also specific to the researcher's set of skills.

However, this is only an initial study which is expected to lead to considerable practical and theoretical work in the future. The researcher expects to conduct a number of similar studies in order to further consolidate the findings in the context of SSM based SISP in non-profit environments.

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