

Problem structuring: on the nature of, and reaching agreement about, goals

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ABSTRACT: In this paper we raise issues about discovering and modelling purpose that, in our view, can often be missed within operational research practice. We suggest that, in problem solving, there is a danger of taking too little account of: the differences between espoused goals and goals-in-use; the potentially misleading nature of published goals; goals that express the need to avoid outcomes – ‘negative goals’; the meaning of goals in an action context rather than the semantics of goal statements; the dynamics and clarity implied by goal relationships; the potential that derives from multi-organisational settings where goals that express an outcome that can only be achieved collaboratively; stakeholder responses to expressed goals – that good solutions can be sabotaged by others; the fact that some goals are contextually important but not a focus for problem solving because they are ‘not-our-core-goals’; and the need to design ambiguity of purpose in expressing goals systems. These issues are illustrated through a number of real case examples drawn from engineering, Police, NHS, a Research Institute, and a Utility company/Regulator setting.

Introduction

Understanding, articulating, and modelling organizational purpose is crucial to any and every operational research study. Without clarity about purpose problems cannot be understood as problems - problems arise because a goal(s) is believed to be under attack or not attained at a satisfactory level. As Keeney has noted, “it is values [goals] that are fundamentally important in any decision situation” (1996: 537). Problems do not exist without some implied sense of purpose, even though that sense of purpose may be implicit and often emotionally driven. Explicating and clarifying purpose therefore is, a central part of problem structuring and an important preface, and sometimes central aspect, to any operational research study (and particularly one that relates to strategic problem solving and development – see Franco, Bryant and Hindle 2007). However, articulating purpose is often difficult for managers, and when purpose is articulated it is usually complex. To further compound matters, facilitating a management team towards negotiating and agreeing purpose is difficult, and even more so in the context of strategic problem solving or when seeking agreements about the strategic direction of a project, department, or organisation. It is perhaps important to note here that we see little differences in the outcomes of and processes for agreeing purpose with respect to individuals, small groups, departments, projects, and organisations. It is therefore remarkable that the process of agreeing purpose as either goals or an objective function is still a relatively under-developed aspect of operational research application – consider the majority of published papers in the so-called top OR journals such as Operations Research, Management Science, and well established OR teaching texts. In the ‘soft OR’ or problem structuring methods (PSM) field there has been more interest in the issues of trying to build useful decision support models when faced with a vague, imprecise, and messy sense of purpose (Rosenhead and Mingers 2001), but as Mingers has argued these

concerns have had little sway in the dominant North American operations research literature (Mingers 2011). In addition, many who are concerned with decision support see problems from the perspective of a multiple criteria analysis have argued that the *process* of agreeing criteria is perhaps the most significant contribution an operational researcher can make (see Bond, Carlson and Keeney 2008). In the broad field of multi-attribute utility analysis Phillips (2007) developed an approach that was deliberately called *Decision Conferencing* in order to emphasise the process and negotiation aspects of agreeing multiple criteria or multiple goals. Phillips (1989) argues that decision conferencing aims to develop a *shared understanding of a sense of common purpose*.

In this paper we seek to reinforce the need to attend to the significance of the *complexity* of eliciting goals, the nature of goals as a complex *system*, and the importance of *negotiating* purpose within an organisation. We shall present some important characteristics of goals and goals systems through examples drawn from our extensive action research involvement with over 250 organisations and a range of managers and management teams in public and private organisations. These characteristics are, in summary: the significance of emergent goals; the role of negative goals; the systemicity of goals; the role of meta-goals; and the significance of ‘not-our-goals’. However these characteristics are informed by a wider set of considerations including the need to pay attention to determining effective means for eliciting goals/objectives, and assessing stakeholder responses to goals. Each of these characteristics we argue is important for operational research practice and yet is not in common currency within our practice (although there are many authors who touch on elements of the characteristics).

Understanding the strategic direction of organisations and groups can only be derived from ascertaining a clarity of purpose, even if the defined purpose is necessarily chosen to be flexible or vague (thus allowing for adaptability). This is particularly important when considering strategic goals. As Phillips (2011) has argued, organizations are not always clear about their direction, and that they “seemed to be so busy trying to do things right that they had not considered whether or not they were doing the right things in the first place” (p926). However, clarity of purpose does not imply an agreement to so-called SMART goals – measurement and precision may not be important, although it is perhaps important to agree that these characteristics are not important. Moreover, the last two decades have seen managers being bombarded with vision statements and mission statements and the requirement for vision and mission statements, with many of these statements being regarded as a joke by them and others in the organisation as they provide little in the way of guidance. Furthermore, in the public sector the use of these ‘business’ oriented terms sometimes causes resentment because they trivialise public service, and so risk staff ignoring strategy statements. In addition, many vision or mission statements (statements of purpose) are either regarded as obvious - because they are ‘motherhood’ statements that apply to all organisations in their sector, or unrealistic because they state aspirations that cannot possibly be achieved with the current resources and within a reasonable time frame. Compounding this, a careful analysis of statements of purpose (mission and vision statements) – particularly those more detailed versions - demonstrates incoherency, emanating from unrecognised conflict between aspirations, opaque reasoning and incompatibility of goals statements – where some are aspirational and others statements of what currently exists. The process of ‘reverse engineering’ an existing statement of purpose into a hierarchy or network of causally linked goals can be very revealing (see Ackermann and Eden 2011a: 152 for an example) –

highlighting the inadequacies of existing mission and vision statements and making the activity an uncomfortable (although often enlightening) process.

Strategic planning, and strategic problem solving, is argued to be fundamentally related to an explication of organisational purpose specifying the objectives and aims of the organisation, and how these will be achieved (Ackermann and Eden 2011a). Nevertheless, it is significant, that there is little discussion in the strategy literature of development and coherence of goals aside from recognising they are important (for example Johnson, Scholes and Whittington 2008: 164-165 discusses objectives but only provide 2 paragraphs).

In the more traditional operational research area the requirement for establishing a statement of purpose (as an objective function) finds clear expression in the decision making, and problem solving literature (perhaps most extensively and historically in Johnsen 1968). Indeed, the requirement for the expression of a simple single objective or 'objective function' is still frequently seen an absolute necessity for the application of most of the well-established 'hard-OR' techniques. Furthermore, the persistence of goals as a central theme in the operational research literature is not surprising since there is a dominant assumption that humans are purposeful and employ choice in attempting to realise their goals (for example, see the seminal work of Ackoff and Emery (1972) which attempts to carefully define the field, and also Checkland (1981)).

However it has to be noted that a system of goals that emerges from any attempt from managers to articulate the goals and their impacts (thus helping to create the system) will always be a result of managing the constraints and political processes between organisational

actors (Child 1997). Attempts to describe organisational or departmental goals as being unitary either in terms of reflecting a single individual or a group consensus is likely to be misguided, presenting an unrealistic description of goals and goal formation in organisations (Cyert and March 1992). Political processes are a significant factor that often prevents organisational actors from establishing consensus about comprehensive long-term outcomes, and yet consensus is usually presumed in operational research studies (Ackoff 1981). For example, Keeney's (1988) plea to those addressing public sector problems to involve multiple stakeholders takes stakeholders as 'obvious' outsiders with clearly differing objectives. Moreover, assumptions of a goal consensus with the senior management team and the organisation as a whole persist. As Wilson (2001: 11) notes, "all individuals within organised groups are acting to try to achieve some purpose (though not necessarily the same purpose)". And, for the most part, and for most organisations, a high degree of goals consensus is important for achieving coherent action.

Additionally, even where a diversity of goals from a range of organisational perspectives is acknowledged and agreed, for example in developing a 'balanced score card' (Kaplan and Norton 1992), it is assumed that these goals can be integrated coherently. A balanced score card perspective has a goal hierarchy of organisational, departmental and individual goals forming an "integrated set of objectives...agreed upon by all senior executives" with any lack of agreement resolved by non-political processes of discussion and communication (Kaplan and Norton 1996: 76). However some negotiation regarding the position within the 'network' is almost inevitably necessary.

In this paper, therefore, we raise issues about discovering, modelling, and negotiating purpose that, in our view, are often missed or not fully explicated within operational research practice.

Key points are presented at the end of each section in bold. As noted earlier these concepts have been derived from working with organizations using a form of action research where, through the use of a group support system the interventions with respect to developing purpose have been fully logged (see Ackermann and Eden 2011b) and the requirements of ‘good’ Research Oriented Action Research (ROAR) have been addressed (see Eden and Huxham 1996; Eden and Huxham 2006). Thus, the concepts are illustrated through a number of real case examples. We also argue that the problem structuring requirement of understanding and modelling purpose with respect to problems introduces an output from operational research that has implications for strategic problem solving in departments and organisations.

What is a Goal?

It is probably a good starting point to determine what do we mean by a “goal”, as opposed to any criteria of success, or outcome? This is important as “there is usually no shared understanding of terms like mission, vision, goal, objective” (Phillips 1990: 144). We suggest that a goal be seen as something that is “good in its own right”, in other words it is something that the group or an individual wants to achieve even if other goals are not met. As Keeney (1988) suggested with respect to problems of public interest: when asked why an outcome is important, the answer may well be that “it is simply important” (p397). Thus, the goal expresses a fundamental objective that represents a desire that is an end in itself with respect to the situation at hand (Bond *et al* 2008: 57-58). Goals are aspirational, that is to say they are not statements about what an organisation is but rather what it wants to become. Although this would imply that they are timeless, in other words they can never be fully attained, in many problem situations they will be both aspirational and time bound –they are

aspirational over a period of interest. Using a real case example, in the academic world, a goal could be “carry out good research”; for an organisation working with social and economic regeneration, it might be “improve the living environment of the area”. Other examples of a goal might be “build the strongest digital brand” or “grow the business through diversification”. However “develop more links with local companies” is probably not a goal, as it is currently worded in a manner that suggests it is a means to an end rather than *an end in its own right*, although it might constitute a ‘means objective’ which contributes towards the attainment of fundamental objectives (Bond *et al* 2008). Ackoff and Emery (1972: 56-57) distinguish between ideals, goals, objectives, and ends but this distinction is too refined for use in the practical world of a manager where these distinctions are usefully fuzzy, and in our experiences much more located in the everyday language of the particular organisation. Thus, for example, good examples of what we are defining as goals are often called ‘success factors’, ‘objectives’, and even ‘performance indicators’. Nevertheless, the distinctions offered by Ackoff and Emery can be very helpful for the OR practitioner in establishing a hierarchy of goals.

Emergent Purpose

In practice, action occurs in both a routine, habitual and unreflective way and also in a more considered, and reflective manner and that the need for problem solving derives from both emergent and planned actions – an illustration of ‘theories in practice’ alongside the ‘espoused theories’ (Argyris and Schon 1974) articulated in the mission and vision. In other words the real purpose of organisations is often demonstrated as much through what managers do as it is shown in statements of purpose. In the strategy field this is known as

‘emergent strategising’ (Mintzberg and Waters 1985; Eden and van der Heijden 1995), and it is probably the most realistic description of the delivery of strategy and of strategic problem solving. Emergent strategising, and problem solving, is a combination of ‘muddling through’ (Eden 1987; Forester 1984; Lindblom 1959) in a manner that reflects the culture of the organisation – the habits of thinking and behaviours underpinned by an often unconscious sense of where the organization should be headed, and the context of the problem setting – politics, trading agreements between managers etc. However, the same concepts apply in a problem solving situation. Understanding what the real objectives of intelligent managers acting in the best interests of the organisation are is an important first anchor point for problem solving as it enables a more effective outcome. Until we understand emergent purpose we cannot reflect upon it, act on it and or adjust it.

At one extreme actions are seen as deliberate, methodical and sequential as in a linear, planned approach to delivering strategic goals (for example the linear process described by Chaffee 1985). At the other extreme, organisational systems and procedures are seen to generate action in an automatic and unreflective way, with the benefits of those actions poorly articulated, understood or even considered and having little strategic coherence. The ‘Garbage Can Model’ of problem solving is a good example of this type of understanding (Cohen, March and Olsen 1972). Similarly Starbuck (1983) argues that an action-generating mode is a better description of organisational behaviour than a formal problem-solving mode.

Thus the implication of emergent strategizing for operational researchers is that **there is a need to be aware of the differences between ‘theories in use’ and ‘espoused theories’ about purpose.** Theories in action are what actually guide managerial behaviour, and thus

attending too much to espoused goals is probably a serious contributor to decision making apparently ignoring the rational analyses of operational support.

In addition, eliciting a comprehensive set of objectives is seen as difficult and “requires significant creativity in discussion with decision makers” (Keeney 1996: 538; see also Bond, Carlson and Keeney 2010). What managers see as crucial issues provides significant clues as to emergent goals. Managers are rarely hesitant in expressing clear views about issues, even though they may be more hesitant in expressing goals.

Espoused goals (published and spoken) can be ignored when deciding how to act. The beliefs and aspirations that surface as managers’ act, either directly or indirectly, are the basis for understanding the real – emergent - goals. These can be determined through examination of the issues managers choose to attend to, as by implication issues are only issues if they prevent some outcome from happening. Ackermann and Eden (2011a: 161-172) identify a workshop based process for establishing emergent goals from issues through a process of laddering similar to that implied by Keeney (1988).

However, confusion can result between real goals and espoused goals when senior managers, who believe they are acting consistently within a world of complex multiple goals, are perceived to be acting inconsistently by others who are more singularly focussed on their task, as the senior managers attend to the theories-in-use goals, whereas others are striving towards an espoused goal. Double messages thus can abound, particularly where a senior manager demands one thing from his subordinates but appears to pay little attention to it himself by doing the opposite through attending to a different goal.

One means of increasing the probability of politically feasible agreements about purpose is to work in groups supported by a Group Decision Support System (GDSS) allowing for generation and negotiation (Eden and Ackermann 2012; Ackermann and Eden 2011b; Montibeller, Franco, Lord and Iglisias 2009). The direct involvement of managers through the use of a GSS can ensure people being listened to and promote the significant benefits of ‘procedural justice’ (Colquitt, Greenberg and Zapata-Phelan 2005; Kim and Mauborgne 1995). Thus **using workshop support methods that are derived from ‘soft-OR’ methods can facilitate the negotiation of an agreed system of goals.** Techniques embedded in methods such as Strategic Option Development and Analysis (SODA), Soft Systems Methodology (SSM), Decision Conferencing, and Strategic Choice (see for example, Mingers and Rosenhead 2004; Rosenhead and Mingers 2001) can increase the likelihood of developing goals that will ultimately influence behaviour and importantly establish high degrees of validity and believability of the application of ‘hard-OR’ methods that are guided by such agreed goals.

Thus, it is **often unhelpful to take published goals too seriously but rather discover the goals that are driving behaviour from the issues managers are working on.** Moreover, managers are driving out a future that should not necessarily be framed by the past.

Inevitably managers will have been influenced by existing published goals, but we (and they) might wish this to have the least possible impact upon considering appropriate goals the future.

Emergent Purpose: the role of ‘negative goals’

It can be argued that managers act to avoid negative outcomes, with no clear conception of a positive future organisational state. As Morgan (1983) suggests, from a cybernetic perspective, an organisation often arrives at its present state through the elimination of alternative, less desirable states rather than the purposive design of a preferred state. Many priority issues are resolved in order to avoid disastrous outcomes (Mintzberg 1973; Mintzberg 1975) rather than to achieve particular goals. These disastrous outcomes can be viewed as 'negative-goals' - that is 'aspirations to avoid'. 'Negative-goals' tend to give as strong a clue about the emergent strategic direction of the organisation as do positive goals. For negative goals the contrasting circumstance would not be expressed as a goal, but the outcome (disaster) itself is of the same status as a goal and must be avoided. For example when working in a publishing company, the marketing department might find itself in the position of having too many demands on its staff resulting in stress and burn out. When thinking of their own marketing goals, 'not stress and burnout' would not have emerged however its emergence as a negative goal does help frame purpose through recognising the resource considerations of goals. Alternatively the negative goal may be incorporated into the goals system by negating it. For example, a governmental organisation such as a school may identify a major issue related to drug taking; this may be seen as the consequences of a range of issues outside of the school. While the management team would never have adopted a goal related to drug taking in the normal course of establishing purpose, now that they have to deal with the negative-goal (disaster) of drugs they may revise their own goals system to include the goal of "keep drug taking under control".

One way of understanding how significant negative-goals can be is to consider them at the personal level. We gain a clearer sense of ourselves, by reflecting upon what we seek to avoid and what causes a feeling of great anxiety as we anticipate the future – understanding

the thinking which produces sleepless nights. We focus on issues which are only issues because they 'attack' goals or cause negative goals (thus returning to the above consideration regarding goals in action rather than espoused goals). Apparent patterns of action are often attempts to work within a set of organisational constraints which are, in effect, goals albeit sometimes negative goals. An example here might be the goal/constraint of 'keep costs low'. In addition, multiple organisational constraints interact to constrain managerial latitude for action and hence influence the construction of goals (Simon 1964).

If managers were to be asked what their goals were then they would be unlikely to talk about the way in which their behaviour was framed by the avoidance of negative outcomes or managing within constraints and instead focus on the positive outcomes. It is somehow only legitimate to talk of positive goals with high possibility of ending up with a very finite/limited subset of goals. And yet, this focus on avoiding disastrous outcomes is a perfectly legitimate activity and one that reflects the reality of organizational life. The perceived requirement to only talk about positive goals is reinforced when considering some of the well-known approaches to dealing with messy organisational problems. These approaches start with an assumption that managers know what their objectives are, or that problems are to be formulated against an idealised conception of where the organisation wants to be (for example, Ackoff 1974; Checkland 1981; Kepner and Tregoe 1965; Ozbekhan 1974). Thus, managers are used to the idea that unless they know what their goals are and can clearly articulate them then they are poor managers. This requirement reinforces a view that goals should not only be known but also should be positive.

Surfacing negative goals is therefore important and participants must be encouraged to express the potential for disaster as well as positive outcomes. Sometimes these disasters can

be rephrased as positive outcomes but often the positive phrasing derives from simply putting the word “avoid” or “reduce” in front of the negative goal recognising the reality of the situation. Furthermore, given what we have said above about organizational constraints, beware of too quickly rephrasing negative goals into positive goals that are unrealistic – there is a significant difference between a goal of “avoid making a loss” and “make a profit”!

Thus, in understanding purpose we **i) do not presume that we know what goals drive the behaviour of the organisation, and it can be dangerous to presume that they are those published, and ii) accept that goals can be negative.**

A Goals System

It is normally the case that any complex problem situation, or ‘mess’ (Ackoff 1981), or ‘problematique’ (Ozbekhan 1974), involves paying attention to more than one goal. This is the foundation of multiple criteria decision analysis (Figuira, Greco and Ehrgott 2005:6). These goals are inter-connected rather than being independent of one another – each goal is supported by others, and in turn each goal supports other goals (see Hampden-Turner (1990) for an interesting exposition on goal networks). The goals make up a *system of goals*. This also means that the meaning of any one goal is defined by the particular words used to describe it as well as its context – important additional meaning is derived from other goals that support it, and by the goals that are supported by it. This is important because often two groups/organisations can state the same goal (using nearly identical language) but its meaning can be very different in each case depending on what it is aspiring to support and what supports it.

ABOUT HERE - Figure 1: an example of two goals systems focusing on an apparently identical goal (high quality engineering)

In figure 1, the goal concerning high quality engineering is shared by both organizations. However when considering the goals linking both in and out of high quality engineering, it is clear that there are very different interpretations of high quality engineering with very different expected goal outcomes. These fragments of a goals system additionally illustrate both broad generic goals (those at the top of the chain) as well as more detailed specific differentiated goals (further down the chains of argument). The picture reveals goals that are not dissimilar to Keeney's fundamental objectives and means objectives structure, developed through a process of laddering up and down and teasing out nuance – and reflects the view that “it is natural to structure a set of objectives, or equivalently value criteria, into a hierarchy” (Keeney 1996: 540).

Problem solving and operational research is typically about analysis to determine the nature of the change that is required to shift the situation to one more desired, and change is about causality – about determining the appropriate means-ends relationships that will generate the desired change. Thus, by stating which actions contribute towards the realisation of particular goals – the means-ends structure - this clarifies what it is that actions and sub-ordinate goals are expected to achieve. Coherency thus can be achieved as the goals support one another, rather than being isolated and potentially contradictory (as is often the case, for example, when reviewing organizational, departmental, and project mission and vision statements). It also ensures that the actions can be focused appropriately; that is, rather than simply agreeing what needs to be done, it is more important to agree what is to be achieved by the actions.

There is a danger that the use of mathematical models to help decide on courses of action, where there is clarity of goals and means-ends, will lead to agreement about action but, because of model opacity, managers will forget what the means-ends structure says about the often complex ramifications that they are expected to follow from the action. Using a ‘causal mapping’ approach is “particularly useful (tool), as the means-end structure permits the analyst to ladder towards decision makers values and find their fundamental and strategic objectives” (Montibeller and Franco 2011: 858). For example, in a case reported by Keeney (1996), BC Hydro had a published mission statement which comprised a number of very broad goals, however on reflection it was established that these were too overarching to provide sufficient *guidance for decision making* and more detailed and business oriented goals needed to be developed to augment these highly generic goals.

However, representing causality does complicate statements of purpose as goals, particularly those more detailed distinctive goals, may have multiple consequences (links out) and thus form a complex network. This is in contrast to structures often produced when using basic Multiple Criteria Decision Analysis (MCDA) where the ‘goals system’ (criteria) will be expressed as an ordered and tidy tree structure. The use of the basic MCDA technique depends upon having a tidy tree structure where each goal has a series of sub-goals and those sub-goals service only one higher-order goal. Thus “a value tree decomposes variables to successively greater detail through levels of a hierarchy; strict preference-independence conditions must be satisfied, and a fully compensatory preference structure is implied” (Montibeller, Belton, Ackermann and Ensslin 2008: 575). In practice, our investigation into real organizational goal systems reveals a more complicated structure where each goal frequently serves more than one super-ordinate goal (multiple consequences) rather than a single one. Keeney (1988: 398-399) solves this problem by generating a hierarchy which is

made up of clusters of goals and delivered as a list of categories. This tension can be seen when reviewing an organizational situation as discussed in Belton, Ackermann and Shepherd (1997) where purpose was determined through exploring issues and negotiating agreement resulting in a goals system which then had to be converted to a tree (with the loss of richness) in order to assess the alternatives. In some respects this view of tidiness reflects the issues raised by organisation theorists when they argue that unravelling complementarities, portfolios, and synergies are significant determinants of organisational success (Whittington, Pettigrew, Peck, Fenton and Conyon 1999).

Often a network of goals is complicated because everything apparently leads to everything else – which it sometimes does! However, it represents the ‘messiness’ of the desired purpose – which in itself is a negotiation of viewpoints and recognition of external pressures. In addition, the structure reveals what is important, namely those statements that are the key drivers (those with many consequences) and those that will be primarily used to deliver the future – a focus on high leverage, pragmatism, least expensive, quickest to attain, and so on.

Thus, we argue that an organizational goals system is likely to be far less ordered than a simple hierarchy, and that to express it as a tidy structure is to miss the real issues of messiness in complex problem solving. When seeking to understand the goals system with respect to a problem, it is important to **be aware of the risks of forcing a goals system into a too tidy hierarchical tree structure** and **appreciate that the meaning of each goal depends on its context – what supports it and what it supports**. The *meaning* of any one goal is defined not so much by the particular words but its context of supporting goals and supported goals.

ABOUT HERE - Figure 2: An example of a section of a goals system showing that the structure reveals the leverage to be gained from ‘stronger community partnership working’ (bottom right in the figure, with 5 impacts) and centrality of the ‘community having confidence in the police’.

A Goals System: Cyclical goals

Sometimes the impact of one goal upon another can generate self-sustaining goal oriented outcomes - feedback cycles. Recognising that some goals can feed off one another derives from considering goals as a system. However, often it is simpler for a problem solving group to recognise the feedback aspect of their goals but structure them as a hierarchy as illustrated below in figure 3.

ABOUT HERE: Figure 3: a section of a goals system illustrating a feedback loop within the goals system of a Research Institute.

Figure 3, shows an example of a client group managing a Research Institute who identified a feedback loop implying that ‘enhance our profile’ may lead to ‘enhance reputation in the World’ which will lead to ‘increase income from non-public funded research’ which can lead to ‘deliver a more flexible and reliable source of income’, which they reasonably believed would ‘enhance our profile’. While the group believed that the feedback was legitimate, for the purposes of expressing their goals they felt that it was more important to identify a hierarchy of importance, and so opted for working to ‘deliver a more flexible and reliable

source of income' as the most hierarchical goal. In this case they believed they could identify better solutions through a focus on the hierarchy of goals rather than the feedback relationship, and that whilst the dynamic of feedback was important it was at such a high level of abstraction that was unimportant to the consideration of options. In contrast, in our work with the management team of a police force a similar reputational feedback loop had significant operational implications, and the sustenance of the loop was highly dependent on solutions to budgetary issues. In this case the significance of feedback that encompassed goals resulted in the requirement to build a System Dynamics simulation model (Howick and Eden 2011).

Whilst the identification of feedback loops can give important insights into a sustainable business model, when finding a generic feedback loop – for example, those often displayed in for-profit strategy statements where increase in profit leads to increases investment in strategic programmes which in turn delivers more profit – less value is accrued. This type of generic business feedback loop is rarely worth expressing: success breeds success. In operational research terms this attendance to dynamic behaviour not only touches on modelling approaches such as system dynamics but more fundamentally does not become constrained to simple tree structure. **Problem solving recognises the value added of attending to dynamic behaviour in a goals system when it is appropriate to do so.**

The Role of 'Meta-goals'

In some instances problem solving is not undertaken for a single organisation, but rather for a multi-organisational venture. A multi-organisation can sometimes be a designed collaboration between departments and operating companies in the same overall organisation.

It may also at least initially be created from developing a goals system that not only the organizational management team aspire towards but which key external stakeholders also support (particularly in the case of public sector bodies and government regulation and funding agencies). The problem solving work thus relates to seeking better ways of gaining the advantage of two or more 'organisations' working together. It is in these circumstances that exploring and agreeing meta-goals can have a significant pay-off.

Meta-goals are goals that no one part of the organisation could attain on their own, or in the case of alliances or collaboration, they could not be attained fully without all (or at least a number) of the organisations working together. The notion of a meta-goal is important for collaborations and is the expression of the potential for 'collaborative advantage' (Eden and Huxham 2001; Huxham and Vangen 1996; Vangen and Huxham C. 2011; and also Ackermann, Franco, Gallupe and Parent 2005; Bryson, Crosby and Stone 2006). Only when meta-goals can be identified is it possible to conceive of the means for supplying a potential 'collaborative advantage' for the different 'organisations'.

Meta-goals are particularly salient for public and not-for-profit organisations and most particularly among multi-organisation collaborations (Ackermann, Franco, Gallupe and Parent 2005; Ackermann and Eden 2010; Eden and Ackermann 2012). Thus the goal is a goal of the collaborative - addressing a public problem that requires one's own actions and those of others. The meta-goal is deliberately created by the collaboration.

For example, when working in the health services, the goals of one organization might be to provide effective care pathways which can only be realised if the same goal (albeit with different actions) is aspired towards by other related and supporting agencies. An example of

this is providing effective quality of care for dementia patients where the goals of social workers and the UK National Health Services overlap and where working together ensures a better achievement of the goals (see figure 4).

ABOUT HERE - Figure 4: An Example of a meta-goals system

Figure 4 shows an example of the goals system developed through a multi-organisational workshop. It shows good examples of the creation of a goals system that was seen by the group to be solely meta-goals; in other words nothing could be achieved without their working together! Indeed it is significant to note how significant the goals relating to cultural differences and shared responsibility were for this multi-organisational group – perhaps the group should have regarded these two drivers as short term strategies rather than long term non-optional goals?

When working in problem solving settings that involve multi-organisations it is important to acknowledge and consider as important the role of meta-goals, where these goals are non-optional goals for both organizations and which cannot be achieved without the collaboration. The identification of the potential for ‘collaborative advantage’ and/or, in addition, represents goals that can be attained much more extensively through working collaboratively.

‘Not-our-core goals’

Identifying the boundary between the non-optional goals of an organisation and those of other organisations and stakeholders, will define what can usefully be called ‘not-our-core goals’. This type of overarching goal can be viewed as a ‘not-our-goal’ because whilst the organisation is prepared to acknowledge that it might contribute towards its achievement, it would not be prepared to be held accountable for delivering it. Furthermore, it is not necessarily explicitly agreed across several organisations. This type of goal is predominantly particular to not-for-profit and public sector organisations.

Sometimes this means that ‘not-our-goals’ are goals that “we are not prepared to be accountable for the achievement of *but must support*”. For example, for a local economic development organization, a goal might be ‘to ensure a safe community’ – something that is important for the redevelopment of the area but something that the organization, on its own, could not achieve and will not be held accountable for. These ‘not-our-goals’ reflect a wider remit and have significant power over the future, consequently they act as constraints to the actions of the organization. In corporations they are sometimes referred to as non-market goals and strategies (Lawton, McGuire and Rajwani 2013) and often result from a focus on the strategic management of stakeholders (Ackermann and Eden 2011c). Thus, instead of being at the bottom of a strategy map as constraints, they represent outcomes “we must drive towards, because they are the goals of stakeholders in my future (and not necessarily supportive stakeholders)”.

As noted above, this category of goal is particularly useful in working out purpose for a not-for-profit or public sector organisation. For example, the Chief Executive of a Prison Service saw it as very important to acknowledge the goal of “keeping prisoners safely housed” but would only acknowledge that he contributed to “reducing recidivism (re-offending)” –

reducing recidivism was a 'not-our-goal' for his organisation, but one worth expressing at a hierarchically super-ordinate level because it signalled that he expected his organisation to make a contribution. Thus the Prison Service was pleased to collaborate with other social support agencies in helping reduce recidivism but was not prepared to be held solely accountable for this goal. However, at the same time the Chief Executive was particularly keen to ensure that all his staff were wholly committed to seeking to reduce recidivism. Achieving their own goals - and the larger public goal of reducing recidivism - involves supporting the actions of others in the collaboration, where the 'not-our-goal' relates to the larger public issue. A 'not-our-goal' therefore may arise when there are significant positive externalities. It is however possible that this circumstance amounts to implicit collaboration, because it is appreciated only by one organisation. In this case the goals of the organisation are seen as paramount and the larger public goal is a by-product.

The notion of 'not-our-goals' draws **attention to the dangers of paying too much attention to grand goals that are not really the non-optional goals of the specific organisation, or part of the organisation – those that need to be addressed for effective problem-solving .** In addition the concept reminds a group of **the need to consider the power of stakeholders who can sabotage and support their own goals, and so goals must be adopted that manage these stakeholders, even the goals are 'not-our-core-goals'.**

The Quantification of Goals

Some management, and particularly project management, books argue that unless goals are SMART (Doran 1981) – *Specific, Measurable, Attainable, Realistic, and Timely* – then they serve no useful purpose and will not drive behaviour. In some instances this is a reasonable

stance to take, however, in other situations opportunism is a perfectly rational response to uncertain and rapidly changing (“high velocity”) environments (Eisenhardt 1989).

Opportunism and flexibility within a framework of purpose is thus appropriate (as noted by the discussion on emergent strategizing). The rate of change of events and the unpredictability of opportunities and problems means that it is sensible for goals and processes not to be elaborately developed with specific targets - it may be much better to have a plan that is loose and easily adapted (Eden and Ackermann 1998: 9). Thus, in articulating purpose it is not always necessary that goals be SMART goals.

However, in operational research there is a tendency that we want to quantify everything.

The use of utility theory in evaluating options, as presented through the use of, for example, *Decision Conferencing* (Phillips 1989; Phillips and Bana e Costa 2007; McCartt and Rohrbaugh 1995) depends upon at least establishing the relative importance of goals. So too do criteria trees – used in Multi Criteria Decision Making – with weights being allocated to each (Belton and Stewart 2002). Influence diagrams may see the stocks being counted and the flows measured in terms of rates. In addition to the dangers of locking in behaviour, it is also worth noting that there is the risk of some double counting in this acronym – specific (S) and measurable (M) are similar, and attainable (A) and realistic (R) could be considered the same.

Organizational goals in practice struggle with this need to attend to SMART requirements, as they typically are not specific enough and not measurable quantitatively; although it is recognised that they should be attainable, realistic, and timely. To ensure for contingencies and reality, it will be important that they are appropriately fuzzy but nevertheless provide a distinctive framework for action – a fine line to walk. It is important that the goals are

specific enough – that is, the wording needs to ensure that managers cannot fudge every decision they make by being able to claim that their chosen strategies fit the purpose, whatever they are! There is a risk that, in the early stages of developing a goals system, the wording of goal statements will tend to be sloppy as managers work to negotiate agreement – but these as agreement emerges can be tightened accordingly.

It must also be noted that specificity can be seen as the same thing as measurable, and measurable can imply both quantitative and qualitative measures. Indeed, it is rare for quantitative measures to be the only appropriate type of performance indicators that might be embedded in a goal statement. The age old saying that “what gets measured gets done” applies (Kerr 1995), and often too much quantitative measurement pushes the delivery of goals in an unintended direction. Kerr’s discussion of the folly of rewarding A whilst hoping for B illustrates this, as does the sentiment put more admirably by Albert Einstein: “Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted”. So, in developing and agreeing goals we need to balance the needs for SMART-ness with the need for promoting behaviours in a particular direction.

This is not to imply that developing key performance indicators (KPI’s), as measures, with respect to each goal is not helpful. In most cases KPI’s help by giving managers a clue to how they will know when they are making progress towards a goal and also, act as a dialectic to ensure understanding of the goals and its associated actions. However such KPI’s need not always be measured quantitatively, adding qualitative measures may avoid losing the essence of a goal.

Thus, sometimes **designed ambiguity of purpose**, in particular in expressing goals systems, can be important. Goals may usefully, on occasion, provide no more than **a rough framework for problem solving**, and a part of the contribution from operational research is that of facilitating the revision of a goals system. A balanced set of measures are also important.

Illustrating the Nature and Characteristics of a Goals System...

The example in figure 5, shows the goals system created jointly between a Utility Co and Regulator. It illustrates many of the characteristics and issues related to developing and agreeing a goals system including the appearance of meta-goals and ‘not-our-goals’. The goals system was developed by initially exploring the issues and risks that were regarded as high priority and then seeking to understand why the management team had made that judgment. The management team were particularly interested in the significance of the goals *system* – the pattern of goals – as this system revealed further insights in terms of the significance of the goals.

ABOUT HERE - Figure 5: The final agreed goals system for the Utility Co/Regulator project (boxed goals are *meta-goals*, and goals in ovals are ‘*not-our-goals*’, italicised non-boxed are Utility Co core goals, and non-italicised Regulator core goals). The structure also shows an untidy network which is not tree-like.

So What?

At the end of each section of this paper we have attempted to identify why the arguments presented matter for successful operational research *practice* and highlighted these. Overall we are suggesting that we should pay more attention to some of the subtle aspects of an ‘objective function’ recognising some of its limitations. It is, of course, no use to devise solutions to the wrong problem depending on which stakeholder is asked different objectives will apply (Ackermann and Eden 2011c; Ackoff 1979; DeTombe 2002; Mitchell 1993; Mitroff and Featheringham 1974) as the problem is most significantly defined by a statement of purpose – a goals system. Gaining *clarity* with regards to the different goals/objectives being focused upon when undertaking the modelling activity is going to be important if a successful outcome is to be realised against these goals.

In addition, paying attention to the different managerial objectives and their associated priorities and meaning decreases the probability of false agreements resulting – where a client group agree solutions but don’t act on them. All too often the precise rationality of operational research modelling makes it difficult for clients to argue against the conclusions in public, rather they agree with them but have no intention of implementing the supposed solutions. In these instances we have often missed crucial aspects of the problem situation because of the goal’s illegitimacy, fuzziness or over-precision, or simply because the technique used to identify them was too narrow-minded.

Furthermore, we have argued that paying attention to the implications of an emergent *system* is important, because it provides coherence. Understanding how the different goals support, or not, one another helps develop a way forward that has a greater chance of success.

Recognising that goals don't have to belong to only an individual, department or organization, but rather can be more encompassing of multi-organisational possibilities ensures that in these times of austerity and economic turbulence more effective working can be achieved.

In summary, our headline warnings (in bold in the text) are:

- be aware of the differences between 'theories in use' and 'espoused theories' about purpose
- recognise it is often unhelpful to take published goals too seriously but rather discover the goals that are driving behaviour from the issues managers are working on
- the use of workshop support methods that are derived from 'soft-OR' methods can facilitate the *negotiation* of an agreed system of goals
- do not presume that we know what goals drive the behaviour of the organisation, and it can be dangerous to presume that they are those published
- accept that goals can be negative (a focus on avoiding outcomes)
- be aware of the risks of forcing a goals system into a too tidy hierarchical tree structure
- appreciate that the meaning of each goal depends on its context – what supports it and what it supports
- problem solving recognises the value added of attending to dynamic behaviour in a goals system when it is appropriate to do so
- when working in problem solving settings that involve multi-organisations it is important to acknowledge and consider as important the role of meta-goals

- attend to the dangers of paying too much attention to grand goals that are not really the non-optional goals of the specific organisation – those that need to be addressed for effective problem-solving
- consider the power of stakeholders who can sabotage and support goals, and so goals might be adopted that manage these stakeholders, even the goals are ‘not-our-core-goals’
- appreciate that designed ambiguity of purpose may often be appropriate - a rough framework for problem solving may be more appropriate for problem solving than precisely expressed, measurable, goals

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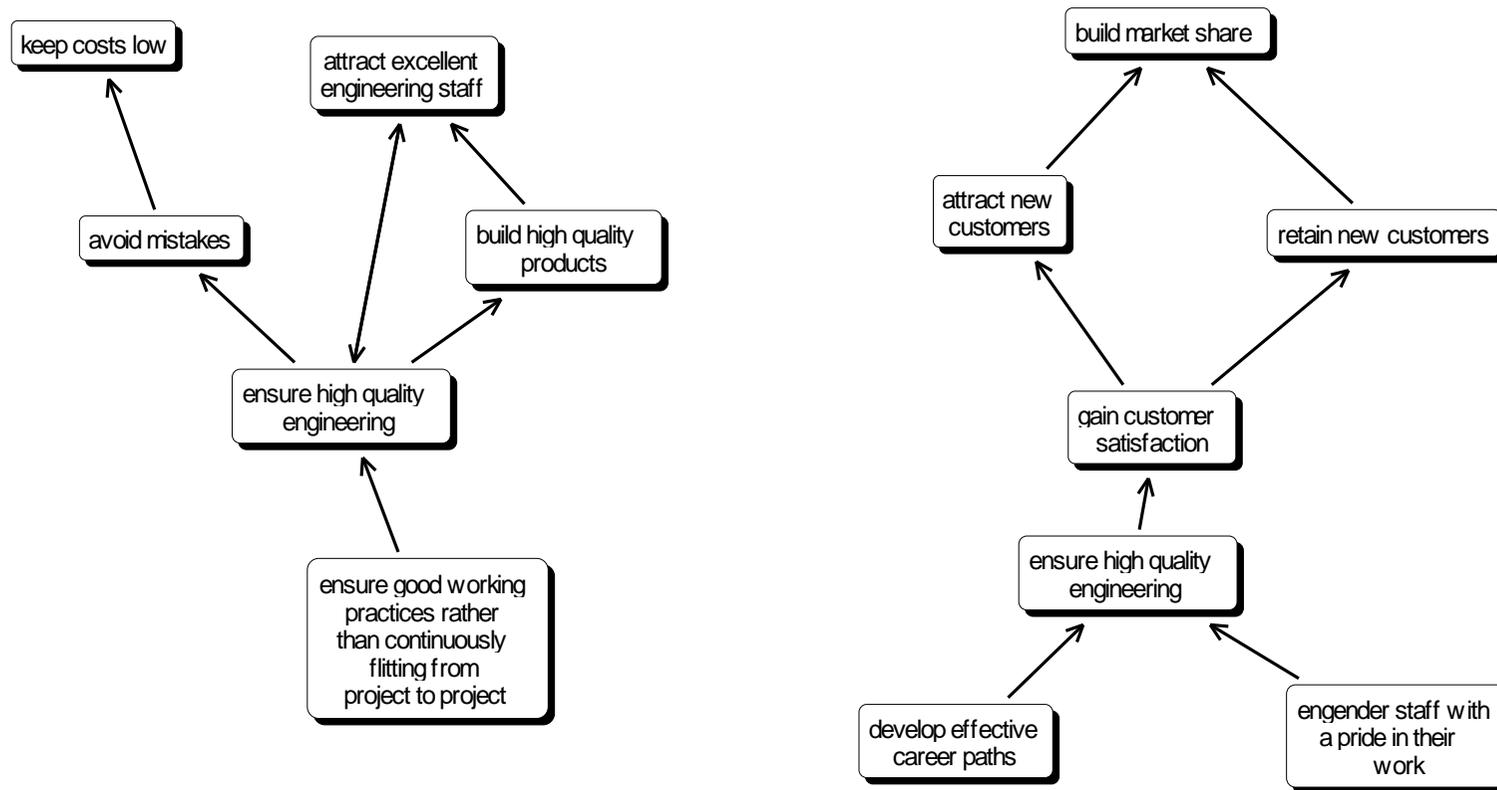


Figure 1: an example of two different parts of an organisation expressing the same apparent goal - high quality engineering – with very different meanings in terms of actions and outcomes)

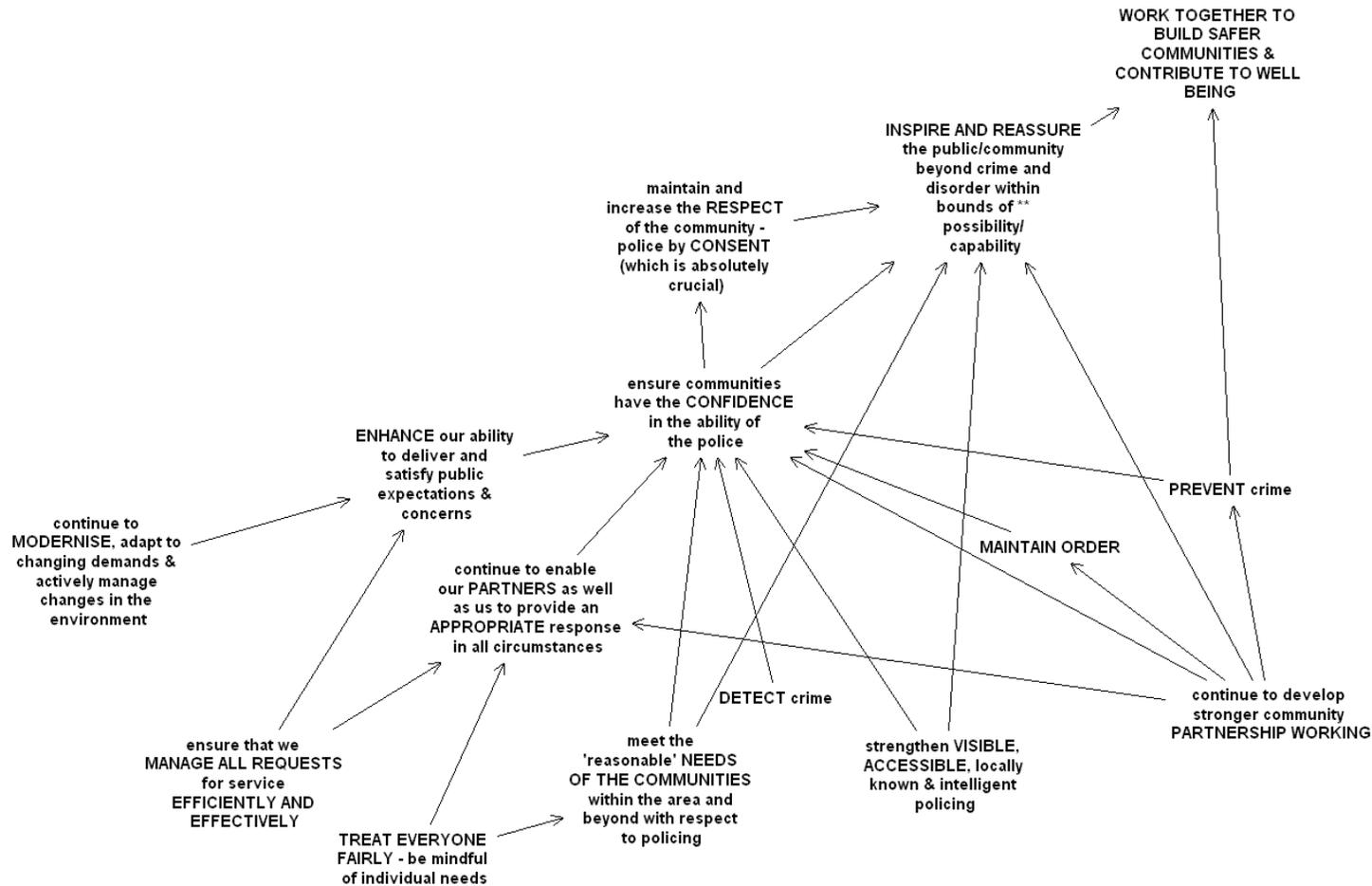


Figure 2: An example of a section of a goals system from a Police Force showing that the structure reveals the leverage to be gained from ‘stronger community partnership working’ (bottom right in the figure, with 5 impacts), and centrality of the ‘community having confidence in the police’.

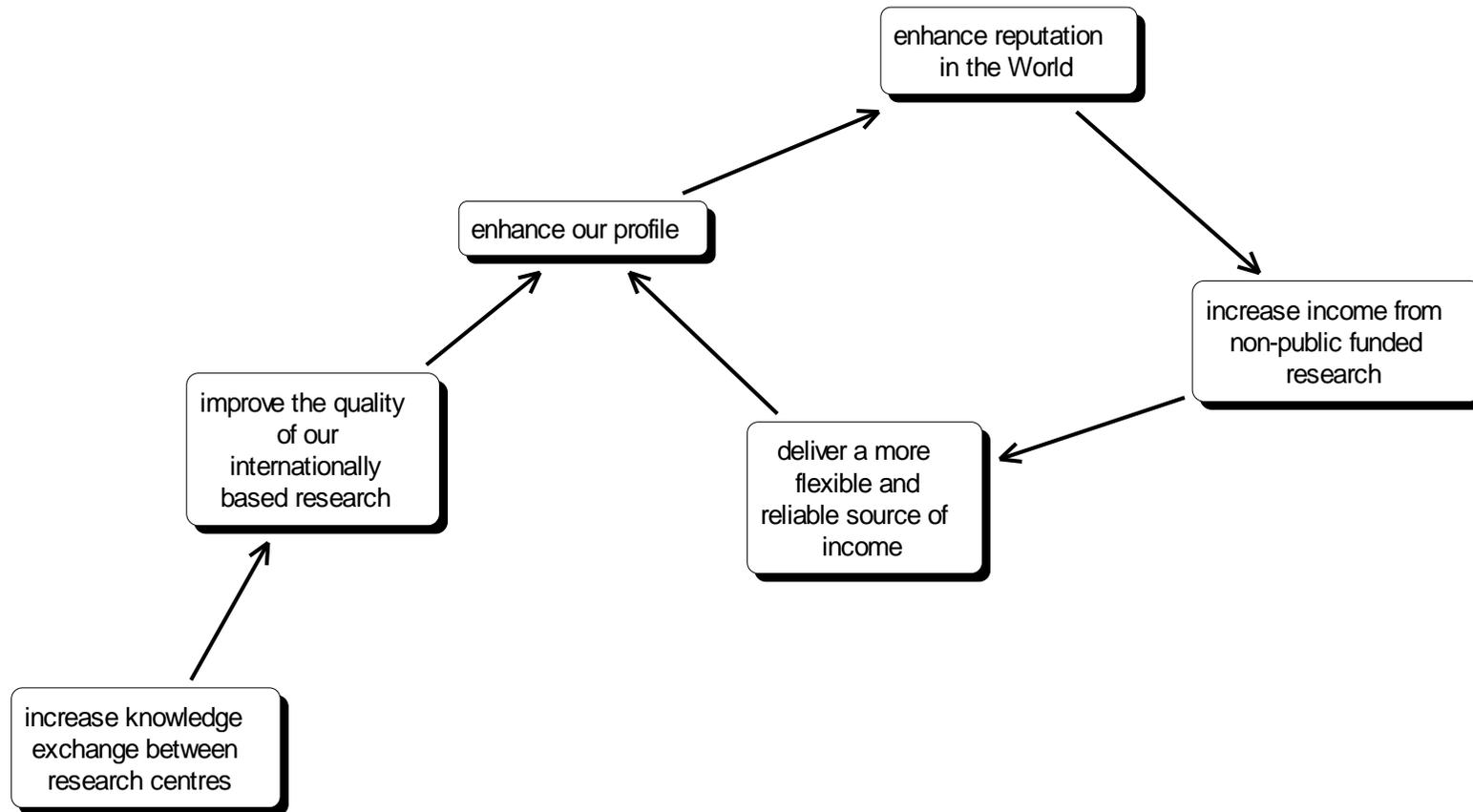


Figure 3: A section of a goals system illustrating a self-sustaining feedback loop within the goals system of a Research Institute.

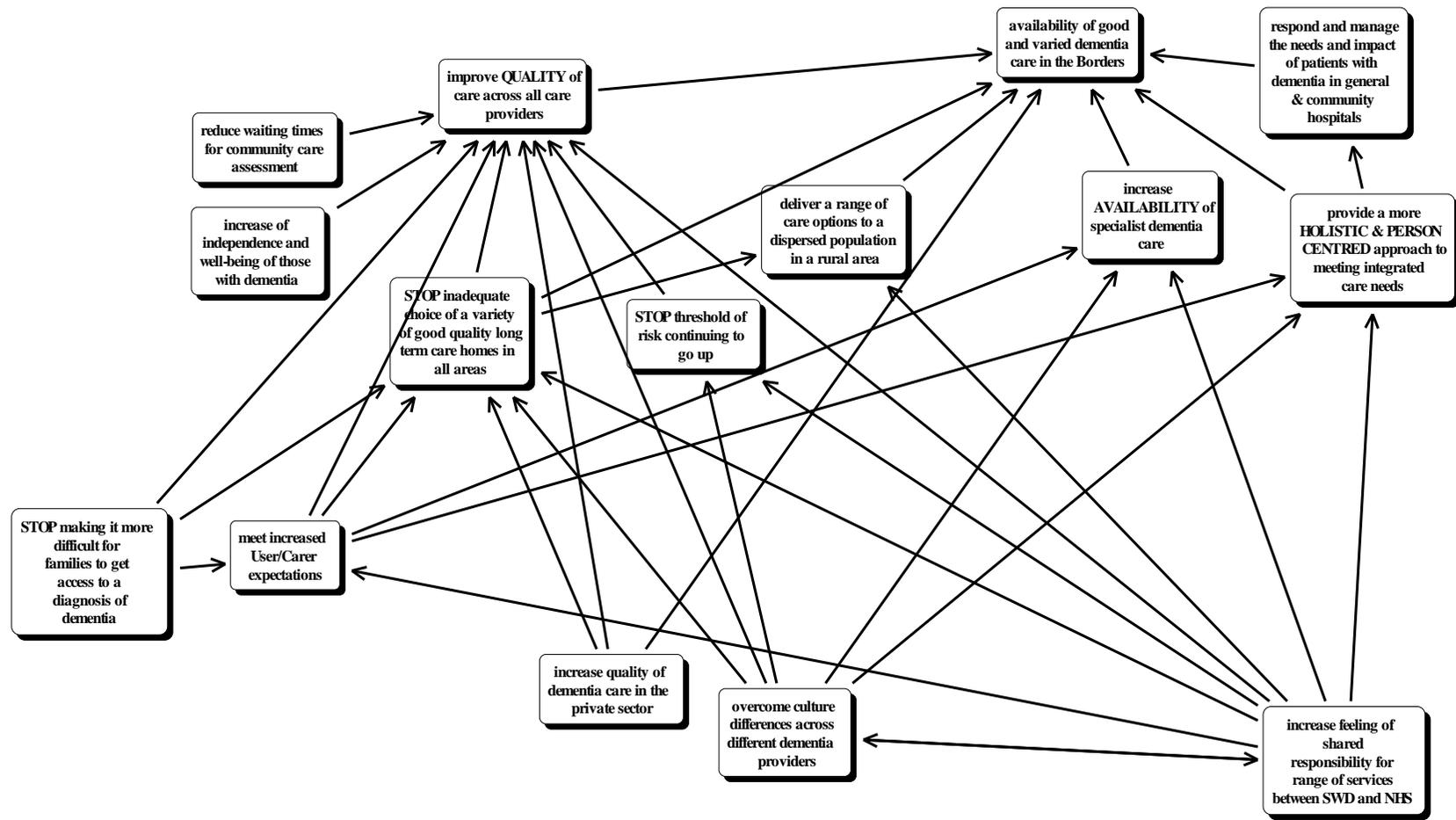


Figure 4: An Example of a meta-goals system developed by a multi-organisational team expected to address the strategic problem of continually increasing dementia in a health district

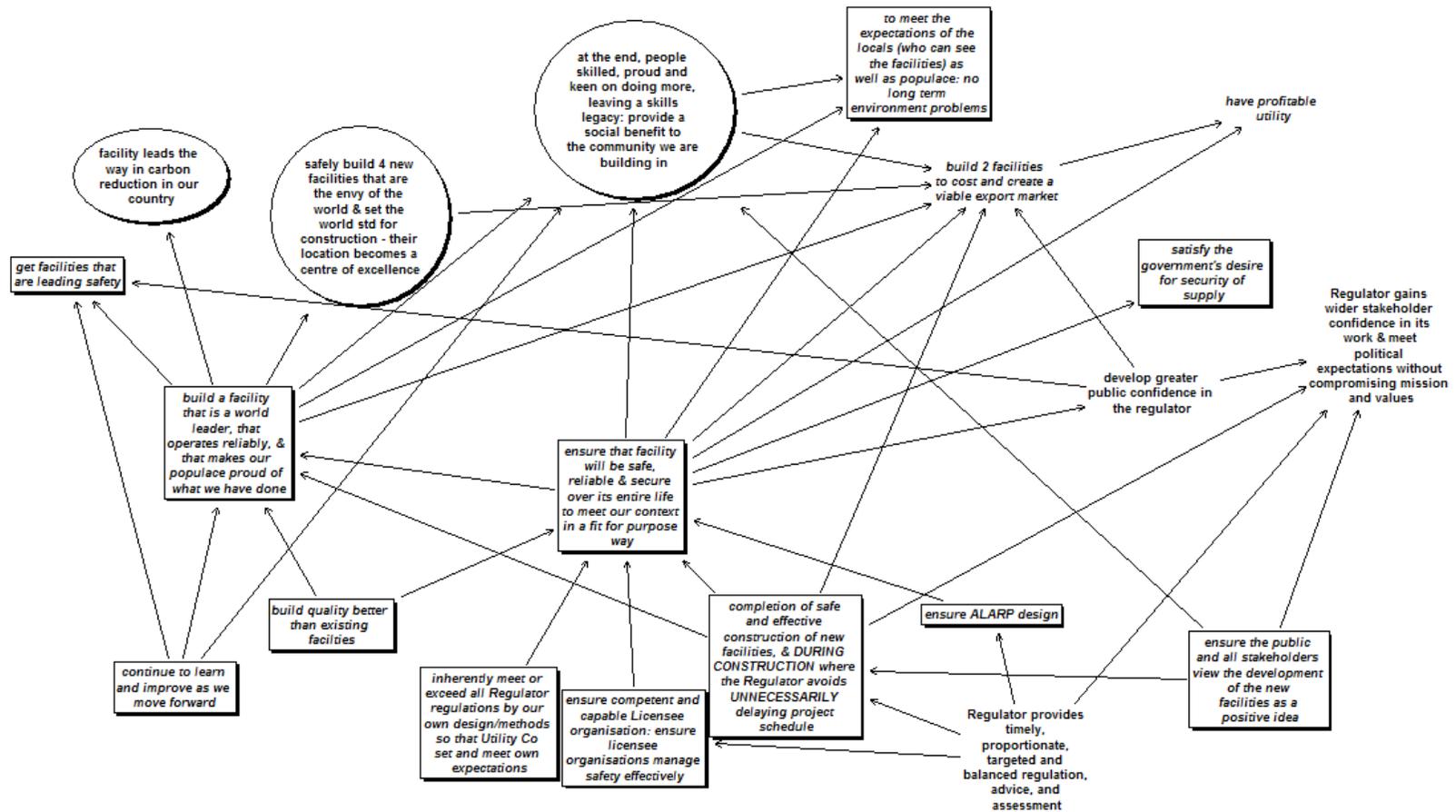


Figure 5: The final agreed goals system for a Utility Co/Regulator project (boxed goals are *meta-goals*, and goals in ovals are '*not-our-goals*', italicised non-boxed are Utility Co core goals, and non-italicised Regulator core goals). Both organisations saw a potential for dysfunctional working and set out to solve the problem of effective joint working. The structure also shows an untidy network. (The intervention continued with risk analysis within the context of the agreed goals system).