



# Managing soft change projects in the public sector

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## Abstract

Public sector organisations worldwide are under pressure to increase efficiency while delivering improved and integrated services. Governments are promoting adoption of project-based management and use of formal project management methodologies developed in the context of essentially hard projects in industries where goals and methods are well defined. Problems in applying hard project management practice to the business of government and, in particular, to soft projects such as organisational change, challenge current project management standards and practices. Some writers and researchers have turned to soft systems thinking for enlightenment. They have identified possible links between project management practice and Soft Systems Methodology (SSM). However, examples of reported practical application have been few and limited in scope. This paper reports on the outcome of a team of practitioner-researchers' attempts to link SSM and project management practice, in several public sector agencies in Australia. © 2003 Elsevier Ltd and IPMA. All rights reserved.

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## 1. Introduction

Public sector organisations worldwide are under pressure to increase efficiency while delivering improved and integrated services. New public management (NPM), a trend for reform based on new business management models, is driving public sector responses and bringing with it innovative ways of conceptualising and communicating organisational change [1]. In New South Wales (NSW), Australia, whole-of-government reform initiatives for public sector services aim to leverage the benefits of global business environments through new technology within a framework of fiscal responsibility and accountability [2].

The NPM environment is characterised by uncertainty, ambiguity and stakeholder management issues that are multifaceted and complex. Here, strategic management requires new conceptual frameworks that involve a shift from formal models and centralised direction to contingent and 'emergent' conceptions [1]. Central to an organisation's capacity to respond is

building and embedding a strategic capability, key elements being sharing vision, challenging prevailing models and fostering systemic thinking. In practice, these strategies are translating into changing organisational structures, capabilities, culture and processes.

## 2. Project management in the new public management environment

Concurrent with developments in NPM, governments have been promoting the use of project management. No single formal project management framework is recommended in NSW, however, there are guidelines for practitioners managing and planning information technology adoption, including a project management guideline [3].

Underpinning formal project management methods are industry standards such as the (USA) Guide to the Project Management Body of Knowledge [4], the (UK) Association for Project Management Body of Knowledge [5], IPMA's Competence Baseline (ICB) [6] and, in Australia, the National Competency Standards for Project Management [7]. All have grown out of essentially top-down command and control views of organisations and management, involving a focus on single

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projects with tangible physical end products at a single location.

In 1996 Partington [8] found comparatively little attention, particularly in the form of empirical research, was being given to organisational change projects. There seems no evidence in the general project management literature that this has substantially changed. In 2000, Stretton [9] concluded “the project management literature has surprisingly little material on organisational change processes, and certainly no universally accepted guidelines for undertaking organisational changes as projects”.

Two general views about organisational change appear to be emerging. The first (top-down) follows a rational, hierarchical model that emphasises control and is expressed through formal structures and systems. Its language acts to superimpose a logic, order and structure on an otherwise irrational social process [10]. Despite evidence that the language of implied control frequently does not work in NPM environments, top-down models are persisting in practice. This has been partly attributed to managers who, despite rhetoric to the contrary, may feel threatened by new organisational structures and processes [8].

Increasing support is being reported for emerging (bottom-up) models that recognise a non-linear, political and irrational process. Associated organisational forms may be characterised as dynamic and fragmented, yet interconnected, composed of competing perspectives and interests and supported by informal systems. While the emerging language associated with bottom-up models is challenging the conventional vocabulary of organisational change, it is yet to support a consistent framework for conceptualising action [10].

### 3. Theory and practice in project management

Growing interest in the management of complex projects is driving calls for new project management paradigms [11]. Nevertheless, the focus remains upon the technical aspects of project management and successful management of individual projects [8].

Reviewing the *International Journal of Project Management*'s first 10 years, Betts and Lansley found project management quite well defined but few published papers contributing to its development by building and testing models and theories. They concluded, “these papers reflect a field that is very practice based, and concerned with the integration of information and experiences rather than being highly analytical or theoretical” [12]. Partington [8] reached a similar conclusion about the *Project Management Journal*. Later reviews confirm the concentration in leading journals on “classical” problems of project execution [13]. This perspective is reflected in project management research where,

according to Urli and Urli [14] researchers do not see a field bubbling with new ideas. Rather, they see an area using concepts already developed or refinements of current concepts.

### 4. Hard and soft projects

Systems analysis and systems engineering provided the conceptual basis for development of traditional project management concepts, procedures and techniques [15]. Fundamental to discussion about developing capability to manage organisational change projects in complex NPM environments is the distinction that can be made between hard and soft projects.

The hard systems worldview underpins many traditional definitions of projects. These proceed from an assumption that the objectives of a project, and the methods of achieving them, are well understood throughout the project. In practice this has been found inadequate for dealing with ill-structured, real world problems where defining clear objectives and formulating viable alternatives can be problematic. In these cases, Yeo argues for a soft systems approach, specifically Soft Systems Methodology (SSM) [15].

While there is no consistent definition of hard or soft as variously applied to projects, methods or measures in the project management literature, their use generally reflects the distinction made in the systems field. In reviewing the history of systems thinking, Midgley [16] identifies hard and soft as distinct movements. In the hard paradigm it is assumed that goals and methods are already well defined. The problem is then how to find the best solution, however ‘best’ is defined and measured. Systems are seen to relate to functions that can be quantified and controlled, or made more efficient, while organisations are viewed as machine-like structures, populated by essentially predictable and interchangeable people.

The soft paradigm view is that the aspects of a situation that cause it to be problematic are not easily defined or isolated. To increase understanding about the situation, it is necessary to engage with people at a qualitative level. People are seen as individuals, with their own culture and continually developing and refining their views of the real world situation in which they are taking action. Hence it is unlikely that there will be one ‘best’ solution [17]. Instead, there will be many possibilities for action, each valued differently by different stakeholders.

A starting point for distinguishing between hard and soft projects is Turner and Cochrane's [18] goals-and-methods matrix. This classifies projects into four types according to the level of definition of goals and methods of achieving them. An inherent assumption behind common project management techniques, however, is that all projects within a program are fundamentally homogeneous.

To address this problem, Payne and Turner [19] suggest different approaches at different levels of project planning within an organisation, namely at the integrative, strategic and tactical levels. In looking to different approaches for managing projects, some authors have turned to SSM.

## 5. Connecting soft systems thinking with project management practice

Yeo has engaged in a continuing inquiry into the use of SSM in project management, using it to complement project processes in a variety of contexts [20–22]. These case studies demonstrate the value of multiple perspectives, especially in the pre-project planning and development stages.

Soft Systems Thinking (SST) refers to the set of ideas typified by the epistemology of SSM. In project management SSM has been applied for a variety of purposes, for example: risk management [23]; training and learning [24]; and project definition [25]. Translating SST guiding principles into practical methods to be applied in complex environments is an iterative process requiring high-level interpersonal skills to be developed at the project team level. Engaging with SSM provides an effective way to begin. As a practitioner's experience grows, 'internalising' SST ideas supports creative design of methods suited to practitioner and context.

SSM, as developed by Checkland and colleagues [17] has been variously represented as a set of seven steps, four key activities, or the alternation between two kinds of inquiry, one focused on the logical process of modelling, the other on increasing understanding of culture within its context. Subsequently, Checkland and Holwell [26] have developed the Processes for Organisation Meanings (POM) model for conceptualising the way meanings are created in organisational contexts (refer Fig. 1). The POM model describes the interrelationships between discourse, meaning, action, and the different

ways in which participants view the situation, based on their individual history, culture and expectations.

While the value of systems thinking continues to be periodically confirmed in the project management literature, application largely occurs in practice specific contexts and often lacks the reflection theory in practice that is vital for theory to develop. For a team of researchers at the University of Technology, Sydney (UTS) working with practitioners managing complex organisational change projects, the need for both hard and soft perspectives has been continually demonstrated. These projects have involved changing aspects of organisations notoriously difficult to clearly define, for example, working practices and culture.

Systems thinking advocates the researcher approach the system being studied as a whole, however, translating this into an effective methodology has continually challenged the team. Often the result has accorded with experiences reported in policy development [27] where the comprehensive modelling involved was found too information intensive and insufficient to deal with the contested nature of the values and the complexity of the processes. This is consistent with results from a survey in the management community that found the methodology was considered to be too time-consuming [28].

Grafting and embedding have been identified as ways of combining hard and soft methods. Grafting involves adding SSM to a stage of a hard process, while embedding involves running the two processes concurrently [29], in this case SSM and project management. This is more sympathetic to the idea that change is continuous and entails using SSM to structure the problem, so that the epistemology of SSM can inform the practice of project management. It provides a useful framework for considering what Checkland refers to as the ongoing cyclic process in which ideas and experience (theory and practice) create each other [30].

## 6. Project management research at the University of Technology, Sydney

Research collaborations undertaken by a UTS team with partner organisations have been following two main strands. One has been concentrating on practitioner competence and has included developing profiles or benchmarks of project management knowledge and use of practices. The other has involved researchers and industry partners examining project management theory and practice in the context of the management of public sector agency change commitments.

### 6.1. Soft systems research collaboration

One project, "Soft Systems for Soft Projects", involving collaboration between the university and a

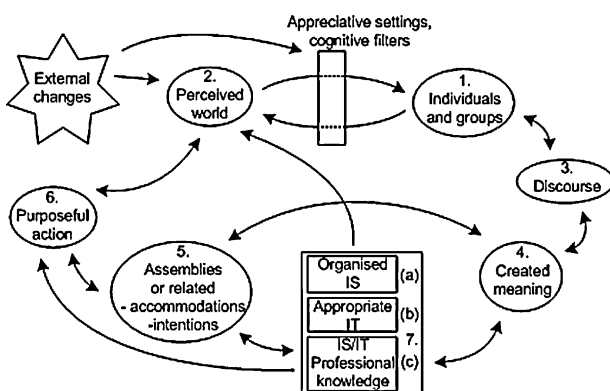


Fig. 1. A simplified version of the POM model (following Ref. [26]).

law enforcement agency over three years, received funding from the Australian Research Council. The aim was to develop a strategic approach for managing multiple, interdependent soft projects [31]. It was an outstanding opportunity for an innovative approach to developing theory and engaging in practice. Proceeding through action research, the collaboration set out to use systems theory as a conceptual framework for guiding application of project management practices to the agency's reform projects. The research plan was designed to include a combination of both hard and soft systems approaches that were directed at making the learning acquired transferable to other public sector agencies.

Early in the collaboration, Stretton [9] commenced a synthesis of materials from general management, project management and systems theory and practice, especially Checkland's SSM. Combining Checkland's seven-stage model of SSM with the basic four-phase project life cycle model (i.e. forming, developing, implementing and finalising), he found correlation between the two seemed strong in the forming and developing phases, less in the implementing phase and absent in the finalising phase.

The research team considered Stretton's review during development of a conceptual framework for making sense of the complexities of the many interconnected reform projects underway within its partner agency. These projects were at various stages of their life cycles and being implemented under a number of arrangements covering formal responsibility, location, project process and team operation. Through an iterative process of learning from their experience, the research team progressively developed a soft systems project management approach for integrating aspects of SSM, other SST approaches and traditional project management methodologies, tools and techniques. The process proceeded through action research interpreted through a framework of SSM in the form of Checkland and Holwell's POM model. The approach to engaging project personnel developing out of this process proved very effective in practice. Also, it has informed extending the POM model to include organisational structure and project management practice [32].

The team has tested its methodology in other agencies. Its adoption has been promoted by providing a prototype on-line project management information system initially developed by non-specialist members of the research collaboration. This system is user-friendly and has proved effective in encouraging project personnel to use a consistent approach irrespective of their level of experience. Also, it has proved effective in supporting strategic management and review of multiple, interconnected soft projects at the portfolio/program level.

## 6.2. *The NSW Rural Fire Service Research Collaboration*

The learning gained by the UTS team members was applied to support the NSW Rural Fire Service (RFS) in an organisational change program that required review and reconstruction of key administrative processes within a 12-month timeframe. The goal was transfer of fire control staff from (independent) local government councils to the RFS by 1 July 2001, thus creating a unified service.

Recognising the volunteer centred culture of the RFS and informed by the extended POM Model, RFS staff supported by university research team members developed a framework for strategically managing the change process through engaging both internal and external stakeholders [33]. Within this framework interdependencies and linkages between projects were identified and implementation strategies were negotiated within a program management structure. Eight program teams were established covering: Communications Change Management; Service Accommodation; Industrial Review; Workforce Planning and Organisational Structure Review; Legislation, Service Standards and Policy Review; Information Management; Strategic Business Planning Review; and Finance. These teams comprised RFS staff and other stakeholders who responded to invitations for participation.

The program teams were responsible for unpacking deliverables agreed during the strategic planning phase into achievable project work packages and were supported by a project office that followed a facilitation approach. As well as facilitating program and project planning, project office staff captured and archived key information, monitored and reported progress to senior management, communicated program status to stakeholders and undertook risk management. The RFS reform program achieved its goal of transferring local fire control staff by the target date. Its successful outcome was recognised in an Award by the Australian Institute of Project Management (Highly Commended).

## 6.3. *Engaging practitioner support through research participation*

Experiential learning is a key contributor to developing project management competence in individuals and organisations. However, it is not sufficient for, as Turner et al. have found [34], competence development relies on a combination of the learner's experiences and guidance, support and encouragement provided by the organisation. In practice, project management is essentially team management. Therefore, a key aspect of professional development should be sustaining it through meaningful practitioner support within the team dynamic and uncertainty found in practice environments. One strategy organisations can adopt is to

develop this capability through linkages with external bodies such as universities or professional associations.

Over a period of some 5 years the UTS research collaborations have effectively sustained a team of practitioner-researchers through aligned university-based and work-based learning. In endeavouring to manage their research sites, they have reaffirmed the need for reflective practice that allows for the structuring of learning in response to change, instead of the repetition of mistakes [35]. They have also affirmed that an important aspect of developing competence is being able to effectively mediate between theory and practice [36]. The value of the approach is currently being tested at two new research sites.

## 7. Conclusion

Experience in participating in research collaborations between the University of Technology, Sydney and public sector agencies, has clearly brought into focus difficulties that can arise when attempting to apply ‘standard’ project management practices in complex, multi-stakeholder environments, especially where organisational change projects are involved. These collaborations have clearly demonstrated that successful implementation of strategic change by projects requires a flexible process grounded in shared professional experience. Systems thinking in general and SSM in particular were found to offer a rich source of theoretical and model-based contributions to inform development of project management practice in these contexts.

This experience and the knowledge created are being shared, transferred and developed through links between the university research team, government agencies and wider project management communities. They are fostering internal cultures within sections of the agencies concerned that is supportive of staff undertaking further professional development in project management at post-graduate level as practitioner-researchers.

## References

- [1] Marsh I. Program strategy and coalition building as facets of new public management. *Australian Journal of Public Administration* 1999;58(4):54–67.
- [2] Premier's Department, NSW. Reforming the public sector., Available from <http://www.premiers.nsw.gov.au> (accessed December 2001).
- [3] Office of Information Technology, NSW. Project management guideline. Sydney: 2002.
- [4] Project Management Institute. A guide to the project management body of knowledge. Newtown Square, PA: Project Management Institute; 2000.
- [5] Dixon M. APM project management body of knowledge. 4th ed. Peterborough, England: Association for Project Management; 2000.
- [6] Caupin G, Knopfel H, Morris P, Motzel E, Pannenbacker O, editors. ICB: IPMA competence baseline. Germany: International Project Management Association; 1999.
- [7] Australian Institute of Project Management (Sponsor). National competency standards for project management. Sydney: Australian Institute of Project Management; 1996.
- [8] Partington D. The project management of organizational change. *International Journal of Project Management* 1996;14(1):13–21.
- [9] Stretton A. An investigation of connections between organisational change processes and project management. In: Crawford L, Clarke CF, editors. IRNOP IV conference—paradoxes of project collaboration in the global economy. Sydney (Australia): University of Technology; 2000.
- [10] Butcher D, Atkinson S. Stealth, secrecy and subversion: the language of change. *Journal of Organizational Change Management* 2001;14(6):554–69.
- [11] Williams TM. The need for new paradigms for complex projects. *International Journal of Project Management* 1999;17(5):269–73.
- [12] Betts M, Lansley P. International Journal of Project Management: a review of the first ten years. *International Journal of Project Management* 1995;13(4):207–17.
- [13] Themistocleous G, Wearne SH. Project management topic coverage in journals. *International Journal of Project Management* 2000;18(1):7–11.
- [14] Urli B, Urli D. Project management in North America, stability of the concepts. *Project Management Journal* 2000;31(3):22, 33–43.
- [15] Yeo KT. Systems thinking and project management—time to reunite. *International Journal of Project Management* 1993;11(2): 111–7.
- [16] Midgley G. Systemic intervention: philosophy, methodology and practice. New York: Plenum; 2000.
- [17] Checkland P. Soft systems methodology: a 30-year retrospective. In: Checkland P, Scholes J, editors. *Soft systems methodology in action*. Chichester: Wiley; 1999.
- [18] Turner JR, Cochrane RA. Goals-and-methods matrix: coping with projects with ill-defined goals and/or methods of achieving them. *International Journal of Project Management* 1993;11(2): 93–101.
- [19] Payne JH, Turner JR. Company-wide project management: the planning and control of programmes of projects of different type. *International Journal of Project Management* 1999;17(1):55–9.
- [20] Yeo KT. Planning and learning in major infrastructure development: systems perspectives. *International Journal of Project Management* 1995;13(5):287–93.
- [21] Hsu JP, Yeo KT. A systemic approach to re-engineer a public research institute for commercialisation. *International Journal of Project Management* 1996;14(6):387–93.
- [22] Yeo KT, Tiong RLK. Positive management of differences for risk reduction in BOT projects. *International Journal of Project Management* 2000;18(4):257–65.
- [23] Stewart RW, Fortune J. Application of systems thinking to identification, avoidance and prevention of risk. *International Journal of Project Management* 1995;13(5):279–86.
- [24] Ramsay D, Boardman J, Cole A. Reinforcing learning using soft systemic frameworks. *International Journal of Project Management* 1996;14(4):31–6.
- [25] Neal RA. Project definition: the soft-systems approach. *International Journal of Project Management* 1995;13(1):5–9.
- [26] Checkland P, Howell S. Information, systems and information systems—making sense of the field. West Sussex (England): Wiley; 1998.
- [27] Stewart J, Ayres R. Systems theory and policy practice: an exploration. *Policy Sciences* 2001;34(2):79–94.
- [28] Mingers J, Taylor S. The use of soft systems methodology in practice. *Journal of the Operational Research Society* 1992;43(4): 321–32.

- [29] Miles RK. Combining 'soft' and 'hard' systems practice: grafting or embedding? *Journal of Applied Systems Analysis* 1988;15:55–60.
- [30] Checkland P. The emergent properties of SSM in use: a symposium by reflective practitioners. *Systemic Practice and Action Research* 2000;13(6):800, 799–23.
- [31] Crawford L. Management of interdependent soft projects. In: Hartman F, Jergeas G, Thomas J, editors. *Proceedings IRNOP III—the nature and role of projects in the next 20 years*. Canada: University of Calgary; 1998. p. 11–19.
- [32] Crawford L, Costello K. Towards a transferable methodology for managing strategic change by projects. In: Crawford L, Clarke CF, editors. *IRNOP IV conference—paradoxes of project collaboration in the global economy*. Sydney (Australia): University of Technology; 2000.
- [33] Costello K, Crawford L, Bentley L, Pollack J. Connecting soft systems thinking with project management practice: an organizational change case study. In: Ragsdell G, Wilby J, West D, editors. *Systems theory and practice in the knowledge age*. New York: Kluwer/Plenum; 2002.
- [34] Turner JR, Keegan A, Crawford L. *Learning by experience in the project-based organization [ERIM Series]*. Rotterdam; 2000.
- [35] Jarvis P. *The practitioner-researcher*. San Francisco: Jossey-Bass; 1999.
- [36] Ulrich W. The quest for competence in systemic research and practice. *Systems Research and Behavioral Science* 2001;18(1):3–28.