Using action research for change in organizations: processes, reflections and outcomes

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Abstract

Purpose – The purpose of this paper is to provide a commentary and recommendations on systemic approaches to designing and implementing change in organisations.
Design/methodology/approach – The paper is a viewpoint on successful change management techniques using action research based on experience in the use of systemic thinking and systems practices.
Findings – The use of a systems approach to change using relevant systems practices enables more successful change outcomes.
Practical implications – Change management practitioners should utilise systemic approaches to enable more successful change implementation.
Originality/value – The paper provides valuable advice for practitioners and researchers in change management through the author's unique experience in systemic change processes.

Keywords Systems thinking, Change, Creativity, Action research, Reflection, Soft systems methodology
Paper type Viewpoint

The purpose of this viewpoint is to encourage readers to think more broadly about organisational interventions, and the thought processes involved in bringing about change, by providing a range of techniques that have helped me implement successful organisational change programs over the last twenty years. I give brief descriptions of a range of techniques and their application in change programs, but first I explore why success in change programs is often difficult to achieve.

Understanding change

What does successful transformational organisational change look like and how do you implement it so that it can be sustained over time? Many organisations have tried it, but according to Smith (2003) only 19 per cent of organisations were successful at it, in his review of four studies and a total of 284 cases. A McKinsey study reported by Isern and Pung (2007) reported that in a survey of 1,536 executives that only 38 per cent of transformational change initiatives were successful. In reflecting on this problem, the purpose of this paper is to explain how transformational change can be successful with a viewpoint from my experience and understanding of change, using examples from several projects.

In undertaking major change programs, organisations often utilise consultants who may recommend or use eight-step or ten-step programs which are largely "off-the-shelf" and may not be contextually relevant for the organisation. Many organisational managers may find it difficult to fit a step-by-step process and apply it in the real world, as we work in complex organisations consisting of people with lots of different views, values, behaviours

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and interactions. Consenz and Noto (2016) note that traditional strategic management approaches fail because they do not consider systemic properties related to delays, non-linearity, intangible factors and unintended consequences associated with human behaviour and mechanistic approaches. Complex systems in the real world possess nonlinear feedback which allows for emergent behaviour, adaptation, learning and self-organisation (Richardson, 2008). Flood (1999) indicates that changes that emerge from these interactions and behaviours are often unpredictable, and even unknowable.

So how does an organisation enable transformational change in complex organisational contexts? A linear or step-by-step change process is often not appropriate and largely inadequate for complex organisational systems, so Benn and Baker (2009) suggest a whole of systems (or systemic) action research approach as an alternative. Such a systemic action research (SAR) approach (Coghlan, 2002; Burns, 2007; Flood, 2010) may be used in complex pluralist contexts, due to its focus on the dynamics of whole systems and the adaptive cycles of reflection and rethinking that action research brings. A systems approach brings an understanding of the whole systems involved – internal and external influences, leadership, stakeholders, resources issues, people issues, leverage points and consequences.

My contention here is that a systemic approach to change using action research is more likely to be successful than other approaches.

As a human resources (HRs) practitioner, I noted from experience many years ago that there was a difficulty in achieving sustained organisational change by implementing single HR interventions in isolation from a whole-of-system understanding. For example, a previous organisation I worked for implemented an intervention aimed at improving attendance of staff members. This intervention had some immediate short-term impact, however in the following years, organisational indicators of unplanned leave had returned to previous levels. After discovering the work of Senge (1990) in the early 1990s, I came to realise that these type of interventions were "quick fixes" that dealt largely with surface behaviour and did not reach the underlying systemic structures driving behaviour.

From the mid-1990s I became determined to use systemic thinking in change processes and was involved in the design of several innovative change projects. However, I also found that an important factor in understanding change is the readiness of the organisation to undertake the change (Armenakis *et al.*, 1993). This "readiness" may involve several considerations, and Rafferty *et al.* (2013) developed a framework of antecedents of readiness for change that incorporate both individual and collective factors, such as external pressures, internal enablers and personal characteristics, that lead to cognitive and affective change readiness. Another aspect of change was described by Tushman and Romanelli (1985), who noted that inertia was a force that built resistance to change during periods of equilibrium, and that transformational change often required a contextual crisis and/or a change of top leadership, otherwise it may not work. As illustrated by Sastry (1997), the ability to change is inversely related to inertia. So, I learned that readiness for transformational change must come from the top of the organisation, and that leadership was essential in driving the change. Although leaders in an organisation can be enthused by innovative ideas and designs, unless they are willing to drive and support the change, the organisation will not be ready for the change.

On reflection, if an organisation was considering a major change programme, I would first ask them the following key questions:

- Is your organisation ready for change?
- Are the leaders committed to the change?
- Who are the other key stakeholders that need to be involved?
- Who or what could derail the change?

- What processes are you going to use to work with others in the design and implementation of change?
- What are the important systems and processes involved?
- What is the likelihood of resistance and inertia?

A detailed examination of the answers would reveal an initial readiness for change and some of the factors that would need to be considered in depth in designing a change implementation strategy. The next sections will give examples of the methods and use of systems tools that can be used in designing and implementing change programs. The methodology used in these projects was action research (Greenwood and Levin, 1998; Reason and Bradbury, 2001; Zuber-Skerritt, 2001) which enables the researcher to work directly with a particular community in solving a real-world problem. The case studies described here are illustrative examples, and as McManners (2016, p. 204) notes, combined problem solving with research that was appropriate to each of the cases to "provide both academic rigour and practical relevance".

Action research

Action research is an "orientation to inquiry", rather than a method, accordingly to Bradbury (2013, p. 3). Characteristics of action research that are essential include a foundation of research, direct participation in some form by problem owners (often described as co-researchers), and cycles of action, reflection, learning and planning (McNiff, 1988; Dick, 2002). Action research is often grounded in strong ethics, such as emancipatory values and an inclusive and dynamic worldview (Wood and Govender, 2013). This ensures authentic collaboration (Piggot-Irvine, 2012) and an up-front identification of intentions (Whitehead, 2008). In doing so, action research contributes to the improvement of social situations while generating knowledge (Zuber-Skerritt, 2012).

The methodology of action research includes a broad range of possible options, and the case illustrations shown in this paper, insider action research was used (Coghlan, 2001). Insider action research can be defined here as action research carried out by member(s) of an organisation on a project within or for that organisation. According to Coghlan *et al.* (2016, p. 84) insider action research "offers a unique perspective on the dynamics and issues within the organisation, precisely because it is from the inside of a living system". It involves managing three interlocking challenges of: pre-understanding of the context situation; organisational politics; and the balance between internal career success and the quality of the action research (Coghlan and Brannick, 2014). As a result of these challenges, insider action researchers need to deal with emergent processes on an ongoing basis.

A sub-set of action research incorporates a systems approach which is titled "SAR" (Burns, 2007, 2014). This form of action research focusses on system wide learning and systemic inter-relationships, and was created in response to intractable problem situations that involve multi-directional causality, vicious cycles or non-linear change. The SAR approach involves larger forms of engagement, where actions are focussed on changing the dynamics of systems to bring about sustainable change (Burns, 2014). The "people strategy" case that I use as an illustration later in the paper is a form of SAR, although pre-dates the conceptualisation of SAR.

Systems practice

A range of systems practices that I have used in organisational change projects are described in this section. Systems practices involve an understanding of systemic thinking, which Espejo (1994, p. 210) defines as "an understanding of how the parts relate to each other and constitute large wholes, that is, of self-organising processes". Within this systemic

concept of the world, "phenomena are understood to be an emergent property of an interrelated whole" (Flood, 2010, p. 269). Systemic thinking helps people gain meaningful insights into events, behaviour, and structure (Flood, 1999). In my opinion, the complexity of an organisation's environmental context, business strategy, culture and operations and their impacts on one another, can only be properly understood through systemic thinking. This understanding is confirmed through the concept of SAR (Burns, 2007).

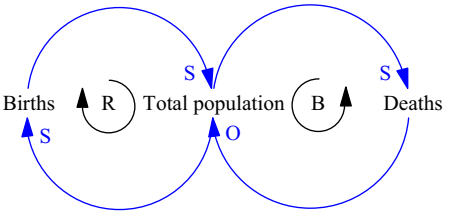
Systemic thinking is where the underlying structural solution to the change problem can be developed. As Senge (1990, p. 53) notes, the structural solution "is the least common and most powerful" as it focusses on the causality of the patterns of behaviour. This is important because only the structural solution addresses the underlying causes of behaviour at a level that patterns of behaviour can be changed (Burns, 2014). As structure induces behaviour, so changing underlying structures can produce different patterns of behaviour (Senge, 1990). Thus, the dynamic nature of the context for change requires systemic understanding of all of the factors to understand the relationship between organisational and contextual factors influencing proposed change (Burns, 2014).

Mapping the system(s)

The first suggested systems practice is to map the system or systems that are the subject of change. To understand the change to be implemented, there is a need to understand the systems that are involved. Mapping the system(s) will help discover key leverage points and uncover potential blockages. The use of diagrams as representations of reality perceived by system owners and stakeholders are a significant aid to thinking about the system (Lane, 2013). This mapping process can be done by using thinking and design tools and in working with and involving key stakeholders and groups as co-researchers and participants.

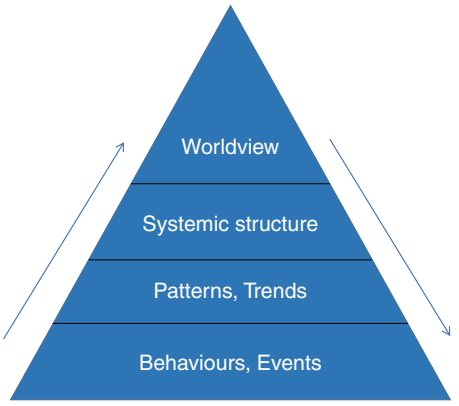
In developing a good understanding of the system and problems within it, many people only do this superficially. However, the best approach recommended by Senge (1990) is to discover the causality of the issue. One useful technique here is causal loop diagramming (CLD) (Lane, 2008) in order to understand influences and key leverage points. For example, Figure 1 shows a simple CLD relating to population. An explanation of this diagram is that the total population in the centre of this diagram is a stock, which is increased by a flow of births and reduced by a flow of deaths. Births flow into the stock of population and increases the stock in a reinforcing loop – the more population, the more births. However, deaths reduce the stock of population, which occurs in a balancing loop (see Coyle, 1998, 2000 for further examples). These diagrams can become quite complex when there are a lot of variables that interact, so drawing a number of these diagrams as sub-systems is another option. CLDs were used in the People Strategy design (described in a later section) process to understand sub-system causality and to assess potential leverage points for change.

To understand the human influence in a hierarchy of causality, Figure 2 shows a pyramid model (Senge, 1990). Based on an earlier example of absenteeism, this thinking



Source: Derived from Coyle (1998, 2000)

Figure 1.
Simple population causal loop diagram



Source: Adapted from Senge (1990)

Figure 2.
Causal pyramid

model could be explained in terms of the thinking that is driving the system. For example, if the CEO of an organisation has a worldview that employees are not to be trusted, then the CEO will initiate systems that reflect that worldview. These systems would likely be based on strict rules, checking, assurance, providing proof, etc., so as to control behaviour as much as possible. So employees experiencing such a system have no flexibility and treat leave as an entitlement, often maximising potential absenteeism. Alternatively, if the CEO does trust employees to do good work, the organisation will likely have a policy that is more flexible, that allows some freedom for employees to take leave when it is needed. With this worldview, most employees who are trusted are likely to take less leave. So in this way, the systemic structure drives behaviour. All of the projects discussed in this paper used the hierarchy to modify systems and influence behaviour.

Thinking models

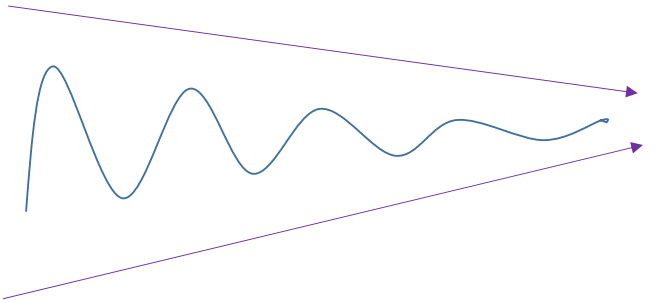
A couple of useful thinking models are derived from Tony Golsby-Smith (not dated) of Second Road. One of these models is called the ABCD model, which is outlined in Figure 3. The questions from the model focus system designers on thinking about the current state, developing an image of the future changed state, and then working out what to do to bring about the change, and how to implement it.

The second model is called the Thinking Wave, which is shown in Figure 4. This model shows a design process over a period of time where convergent thinking occurs in an iterative process between an executive team and a design team. The top line in the model

A = Where are we now?
Examination of current state and questions arising from it
B = Where do we want to be?
Desired outcomes and requirements outputs, inputs and throughputs
C = What do we do to get there?
Hypothesis and specific strategies
D = How do we make it happen?
Key activities to build and implement

Source: Golsby-Smith (not dated)

Figure 3.
The ABCD thinking model



Source: Golsby-Smith (not dated)

Figure 4.
The convergent thinking wave model

represents the executive and the bottom line represents the designers. The middle line shows the variation in thinking between the two, which gradually converge to a common view. For example, the executive may come up with an intent, and the design team may respond with an initial conceptual design. However, there may be unforeseen issues with the design, which causes further feedback. Over time, the issues are resolved and the design converges. Both Figures 3 and 4 models were used in the design phase of the people strategy project, as further described in a later section.

User-based design

When designing new systems, it is important to involve end-users. A design method titled "User-based design" (see Molineux, 2014) is aligned to Romme's (2003) seven values and ideas on design. It is most useful in bringing the views of end-users to the design table, so that the new system can be designed in a way that meets the needs of the end-users of the system. Table I shows a comparison of user-based design with the seven values and ideas of Romme (2003). An important aspect of user-based design is the three "voices" of design: The voice of intent, the voice of experience and the voice of design. It is recommended that an information designer take on the role of the voice of design, with the project manager the voice of intent. All other stakeholder groups are represented through the voice of

Romme's seven values/ideas on design	How user-based design principles are related
1. Each situation is unique	Each project is seen as a unique situation within a particular context, and so requires a design process that takes this into account
2. Focus on purpose and ideal solutions	Each project is very much driven by the intent or purpose of the proposed change and attempts to design an ideal solution
3. Apply systems thinking	The process pulls in systems thinking about the context of the situation, its potential impact on other systems and uses systems techniques in the design process
4. Limit information	The process uses limited information, so as not to overwhelm new and innovative thinking with old patterns of behaviour
5. Participation and involvement	It uses a high level of participation through the involvement of user groups in design and implementation
6. Use discourse	It uses extensive discourse in the workshops with user groups and other stakeholders
7. Pragmatic experimentation	It is involved in considerable pragmatic experimentation and testing

Source: Molineux (2014)

Table I.
The application of Romme's values/ideas in user-based design

experience, which may consist of several stakeholder groups, both separately convened and integrated. It is critical in the method that all stakeholder groups (end-users) are represented and involved in the process. I used this process of design as project manager (and voice of intent) in a project to successfully re-design a health and safety system (Molineux, 2014).

Some aspects of design are discovered through the action of designing and creating, when the interaction of elements may lead to new insights or unexpected outcomes (Jelinek *et al.*, 2008). It is often the internal components, such as relationships between people with each other and with elements of systems, combined with interaction from the environment outside the organisation that may lead to unexpected consequences or insights. Systems theory helps illuminate this interaction and explains that it leads to emergent properties of these systems and that small changes in the system can lead to large changes in outcomes (Senge, 1990). So design is about creating contexts and meanings that enable the effective interaction of these systems elements to produce intended outcomes (Jelinek *et al.*, 2008), with the integration of design and practice (Sarasvathy *et al.*, 2008).

In Table I, the elements of Romme's (2003) ideal design process are listed, and this includes three values and four ideas that define the content dimension of design inquiry. The values are: each situation is unique; focus on purposes and ideal solutions; and apply systems thinking. The first value is important in relation to situational context, the second focusses on the future ideal design, and the third "helps designers to understand that every unique problem is embedded in a larger system of problems" (Romme, 2003, p. 563). The four other ideas that define the values and ideas regarding the process of design are: first, limited information; second, participation and involvement in decision making and implementation; third, discourse as medium for intervention; and fourth pragmatic experimentation (Romme, 2003). The first of these, limited information, guards against excessive data gathering and helps in focussing on the future rather than the past. The second and third, participation and discourse are crucial involvement of stakeholders in assessing solutions. The fourth, pragmatic experimentation is essential for trialling new ideas.

Soft systems methodology (SSM)

A key approach I have used to design new systems was running two- or one-day workshops using SSM. SSM is about applying systems principles to structure thinking about things that happen in the world (Rose and Haynes, 1999). Figure 5 displays the structure of SSM. An example of a project using SSM was in re-designing the performance system in a large Australian government agency. SSM is an approach that allows creativity, understanding, dialogue and participation.

Any use of SSM is seen by Checkland (2000b, p. 821) as involving four elements:

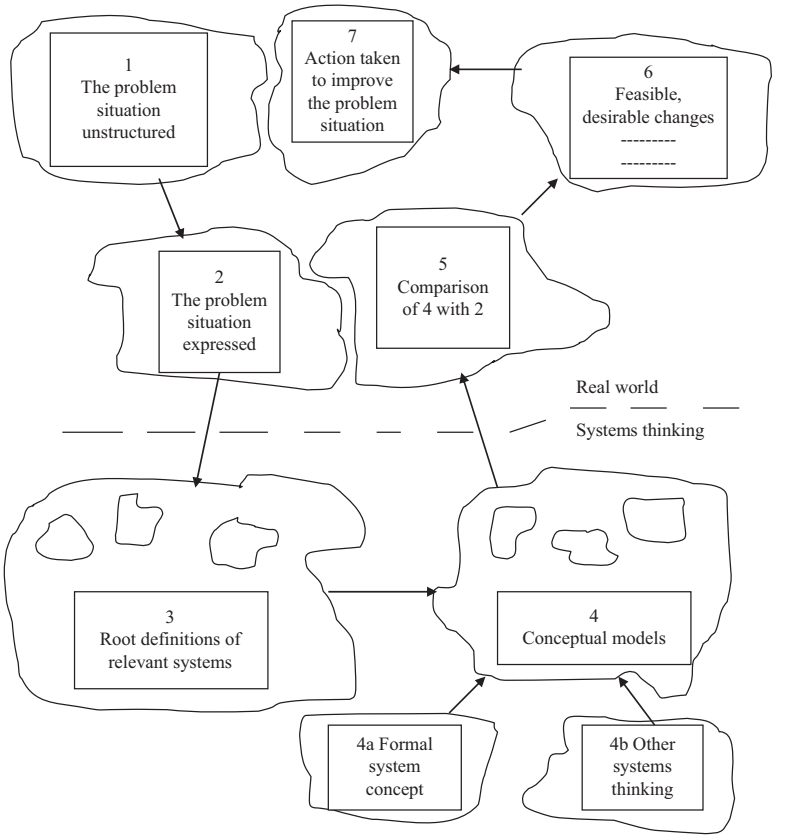
(1) a perceived real-world problem situation;

(2) a process for tackling that situation in order to bring about some kind of improvement;

(3) a group of people involved in this process; and

(4) the combination of these three (intervention in the problem situation) as a whole with emergent properties.

Checkland and Holwell (1998, p. 164) claim that SSM can be used as "a sense-making device" and additionally, that the methodology itself is inherently creative and flexible. They note that SSM's principles allow for creativity, with a strong focus on the context of a particular situation. Other researchers have found that SSM allows for the suggestion of new ideas and changing perceptions (Attwater, 1999); enables individuals to be more open to new ideas



Source: Adapted from Checkland (1981)

Figure 5.
Soft Systems Methodology Mode 1

(Clarke, 2000); and when a process is consciously structured by the use of SSM, it is "more capable of generating insights and producing commitments" (Checkland, 2000b, p. 823).

In organisations, creativity is important for innovation as well as for the development of new products and processes, and in many organisations, the creative thinking process is enabled through some form of intervention. Amabile *et al.* (1996, p. 1155) believe that "creativity by individuals and teams is a starting point for innovation" and that creativity is "a necessary but not sufficient condition" for innovation. However, there are other factors, such as management priorities, production practicalities, organisational culture and politics, which will impact on creative ideas becoming innovative products. To enable innovation, organisations may need to actively intervene in design and development activities. This is where SSM can be used as an enabler for the generation of creative ideas.

One of the most creative elements in SSM is the use of rich pictures, which Checkland (2000a, p. S22) states "are a better medium than linear prose for expressing relationships" and that "pictures can be taken in as a whole and help to encourage holistic rather than reductionist thinking about a situation". Such rich pictures engage the mind creatively and bring about a form of expression and creativity that is often latent in people.

The generation of learning is central to the use of SSM and the methodology's ability to facilitate learning is an important aspect of its usefulness in generating creative ideas.

Checkland (1981, p. 213) notes that the outcome of an intervention is "never an optimal solution to a problem, it is rather a learning which leads to a decision to take certain action".

In the performance system re-design process with the agency, the process consisted of four two-day workshops held in different cities, and based around an SSM Mode 1 design (slightly modified), with the addition of an analysis from SSM Mode 2 of systemic viability, cultural feasibility, and political acceptability; and a self-evaluation adapted from Checkland and Tsouvalis (1997).

The outcomes from the workshops were that 11 sub-systems were created or redesigned and a total of 73 system changes suggested. Participants also reported a very high level of engagement in the workshops and satisfaction with the outcomes. The context and process of the SSM workshops in this study closely matched the work conditions that enhance creativity, mentioned above. For example, the workshops encouraged freedom of exploration and play. Play is a fairly natural part of SSM, as noted by Clarke (2000, p. 804), who states that in experiencing SSM, individuals enjoy "rediscovering the fun of work".

Positive group mood is also correlated to creative performance (Fredrickson, 2001). The mood created in the workshops was noted as being positive, and the methodology lends itself as a process that results in accommodations between conflicting viewpoints leading to real action to improve the situation (Checkland, 2000b). In Clarke's (2000, p. 804) view, "it allows people to be heard explicitly and encourages the reduction of fear and anger that can sometimes accompany the discussion of ideas". The SSM process, if facilitated properly, creates an environment that reduces conflict and enhances focus on the issue, accommodating various viewpoints.

Cultural change model

The largest and most significant change project I undertook was the people strategy project, also in a large Australian public sector agency (Molineux, 2013). The transformational change required by the agency involved cultural change, in shifting the organisation's culture from an "entitlement culture" towards a "performance culture". However, as Schein (1999) observed, shifting culture in an organisation is an extraordinarily difficult task. In a report of a detailed case study of change in seven hospitals, Huq and Martin (2000) demonstrated that implementing large-scale whole of system change was very difficult, with only one of seven hospitals categorised as highly successful. The poor success rate in organisational cultural change seems to be partly due to organisational change agents' lack of systemic thinking and understanding of the causal structure and leverage possibilities for sustained change within the organisation's context.

The model in Figure 6 was developed as a result of the action research process used in people strategy project. It involved major change to HRs and leadership systems and was implemented through 12 organisation-wide sub-projects linked to a common philosophy and set of principles. The design team of four included myself. We were all familiar with Senge's (1990) and Senge *et al.*'s (1994) work and believed that the cultural change would be able to be achieved by changing the systemic structures that caused or enabled certain behaviours to occur within the agency and that all parts of the system needed to be aligned to the new approach, otherwise these components could be working in opposition to each other. Therefore, the change strategy needed to be comprehensive enough to bring about a coordinated, systemic change in the structures that could help shape the culture.

The model at Figure 6 represents a process for integrating strategic HR management with cultural change utilising a systemic approach. The large ellipse at the top of the model is the context and systems thinking aspect of the model. It takes into account key variables such as the business direction, business/economic cycle, current environment including market, competition, etc., and the existing culture of the organisation. The central circle in the model is systems practice which involves the thinking and design models and methods used for the change, such as SSM, CLD and user-based design, described previously. These techniques

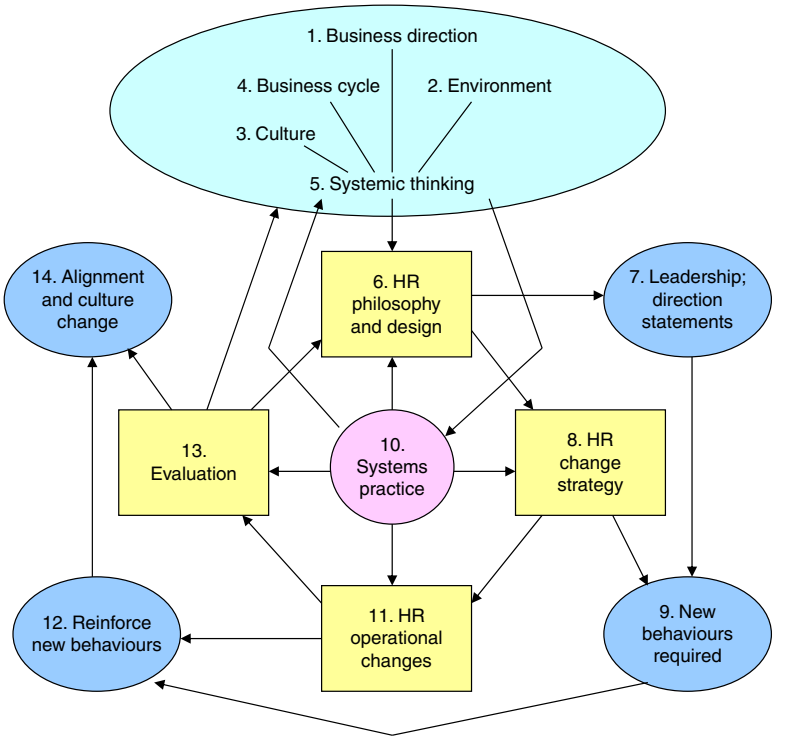


Figure 6.
Systemic organisational cultural change model

Source: Molineux (2005)

could be used at any stage of the change process. The various systems techniques enable the user to design implementation processes, engage stakeholders, analyse contexts, evaluate complex dynamic information, and evaluate outcomes. Systemic thinking should avoid "quick fixes", as the understanding of underlying structure, context and culture will enable the leaders of the organisation to develop a philosophy and design that aims to provide a fundamental solution, rather than creating a symptomatic solution (Senge, 1990). The culture of the organisation could also be affected, even though this would not generally be an intention of management. Such unintended consequences of quick fix solutions will be avoided if systemic thinking is used.

The four rectangles in the model outline the change process embedded in HR systems. First by outlining a design approach, then developing the change strategy, making the changes and evaluating the changes. The outer four circles represent the leadership aspect of the model, and this is critical in providing momentum for change, enunciating new behaviours, and ensuring change is embedded in the organisation's practices. The arrows in the model show that the elements of the model are purposefully inter-connected. The intentional design drives the leadership requirements for the change strategy. Continual feedback and evaluation in the form of an action research cycle is essential.

A summary of system changes in the cultural change project are included in "Major changes to the Agency's HR systems". Results from the people strategy project included sustained cultural change in the organisation, which arose from new and improved HR and leadership systems (as measured over five years following the initial implementation). Results included improved morale, engagement, job satisfaction, leadership, performance,

communication, health and safety, and employee relations. Other results include higher levels of feedback and participation in decision making and a greater alignment in individual performance and organisational direction.

Major changes to the Agency's HR systems were reported in (Molineux, 2013).

The HR systems and revised processes following the change programme included:

(1) Strategic HRM and workforce design:
- stated people (HR) philosophy and principles;
- strategic alignment of HR with organisational strategy;
- intentional workforce design and planning for the future; strategic use of people data; and
- introduction of work types with targeted and differentiated strategies in employment, development and performance.

(2) Employee relations and communication:
- partnership fostered and focus on commonality of interests and sharing of information; and
- quarterly "dialogue days" – discussions with all organisational leaders, cascaded to all staff.

(3) Performance and rewards:
- line of sight from corporate plan through to team plans and individual agreements;
- widespread use of performance appraisal and feedback, including 360 degree feedback;
- mandatory use of performance agreements;
- behavioural statements and expectations linked to performance agreements and appraisals;
- HR measures built in to overall pay outcomes; and
- significant enhancement of reward and recognition programs.

(4) Conditions and work environment:
- differentiated conditions of employment by work type;
- integrated focus on health and safety linked to well-being programme, risk management and early return to work; and
- strong focus on diversity, including enhancement of family-friendly working practices.

(5) Employment:
- recruitment practices streamlined and focussed on differentiation according to work type, employer of choice and branding focus; and
- focus on talent management and retention.

(6) Learning and development:
- capability framework developed with focussed learning outcomes, on-line learning system; and
- integrated learning assessment.

Reflection on the use of action research and the models

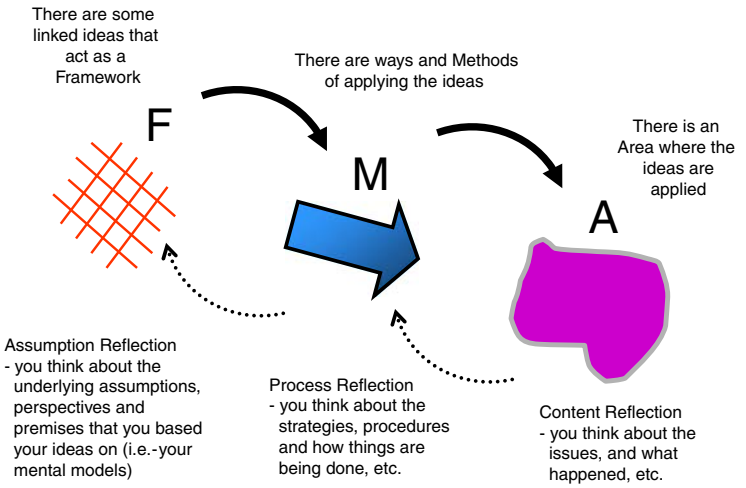
The action research methodology is both participative and reflective. This is important, as in organisational design, reflective thinking is required in the generation of knowledge to be used in the design process (Heusinkveld and Reijers, 2009). It is the combination of the cognitive release of knowledge and the understanding of the structural dynamics of the design situation that can enable improvement to occur (Barbaroux, 2011). This reflection process could be undertaken via a number of methods, including the process of problem formulation, problem diagnosis, design and implementation, followed by evaluation in an iterative process, suggested by Hevner *et al.* (2004) and Heusinkveld and Reijers (2009). However, I was more familiar with the action research reflective cycle or spiral, involving planning, acting and observing the process and consequences, reflecting on these processes and consequences, and then replanning, acting and observing, reflecting, and so on, as suggested by Kemmis and McTaggart (2000).

On reflecting on the experiences from these change programs, there are a range of learning points arising. The first is the importance of involving people in the use of action research processes. For example, in the People Strategy project, each of the 12 sub-projects were involved in workshopping new ideas and designs with stakeholder groups (Molineux, 2013). In the project that utilised user-based design, representative groups of users enabled the new system to be designed in a way that met the needs of user groups, resulting in a very high level of acceptance of the system changes (Molineux, 2014). In the project that involved SSM, the participants of the workshops generated a huge range of creative ideas for implementation of a re-designed system (Molineux and Haslett, 2007). Whilst this reflection is not new about action research (e.g. see Wood and Govender, 2013; Zuber-Skerritt, 2013), it is emphasised here because it is often missed in organisational change projects (Burns, 2014; Zhang *et al.*, 2015).

The second point is ensuring that the organisation is ready for the change (Armenakis *et al.*, 1993). Many years ago, I was involved in designing innovative change programs, however even though they got great feedback, they did not get implemented because the leaders in the organisation were not ready for change. The successful change projects given as examples here were all supported by senior leaders in the organisation. The concept of readiness is under-developed according to Rafferty *et al.* (2013), who proffer a model that includes both cognitive and affective readiness at individual and work group/organisational levels. As mentioned before, inertia (Sastry, 1997) is a major challenge to overcome and ensuring the climate in the organisation is ready for change should be a starting point. Effective participation should ensure easier and more effective implementation.

The third point is the importance of reflection. Bjørn and Boulus (2011) state that the reflective monitoring of action research processes is essential. In reflecting on the processes involved in the various change projects, it was apparent to me that utilising feedback to stimulate analysis of issues was a critical element in all of these projects. In the people strategy project there were six action research cycles over an 18 month period of implementation of the project. All project leaders and the design team were involved in these workshops, roughly every three months. These participatory evaluation workshops enabled a much more successful implementation of change (Molineux, 2013). We drew on the experience of Checkland's (1985) understanding of the organised use of rational thought called the FMA model, combined with a process that utilised Mezirow's (1991) reflective techniques of content reflection, process reflection and premise reflection, as recommended by Sarah *et al.* (2002), and included as Figure 7. During implementation of major change, it is important to reflect on the outcomes of the implementation (A), the methods and techniques used in the change (M), and the strategic thinking and design of the project (F). Similarly, Bjørn and Boulus (2011) describe process of reflective monitoring, including dissenting thought. Such critical reflection is a key component of undertaking effective change.

The fourth point is the essential understanding of systems (Senge, 1990; Burns, 2014). Systems practices were used in all of the projects mentioned, including systems mapping through



Source: Sarah *et al*. (2002)

Figure 7.
Reflection model using FMA

CLD and systems design through SSM and user-based design. The systems practice tools enable the project team and stakeholder groups to obtain a systemic view of the problem context, the systems involved, the underlying systemic structure, and key leverage points in the system.

The fifth point, on reflection, is that an experienced facilitator in action research and systems design processes is essential in guiding and supporting these complex processes that can result in transformational change succeeding in organisations. This point is also made in Sarah *et al.* (2002).

The five points above, combined together, result in a unique perspective of action research that is grounded in both theory and practice. As Zhang *et al.* (2015) state, the overall quality of results, depth of meaningful insights, and contribution to knowledge should be higher in action research projects than traditional research. From my own insights and that of systems theorists mentioned earlier, I would add that systems practice will enhance both the quality of insights and final project outcomes for an organisation using these techniques.

Conclusion

A range of system design processes have been showcased in this paper to provide readers with some ideas about the use of the models illustrated here for change management practice, particularly in using an action research methodology where participation is critical. I would encourage readers who are interested in any of these models to explore them in more detail by reading the source references and websites. In addition, more detailed explanation of the use of the models are included in my earlier articles (Molineux, 2013; Molineux, 2014). I would encourage researchers to seek out their own combinations of the models represented here and other change models and thinking tools, for example the work applied learning models of Abraham (2015), as there is no "one solution" that will work in every organisation or context. I believe there is a great need for more innovative research in change theory and implementation.

Although the practice of action research may take longer than other methodologies, a higher level of acceptance of change occurs when participation levels are also high. For sustainable change implementation, I would therefore recommend the use of action research processes, combined with appropriate systems thinking practices for systems design and change, constructed to be relevant to specific contexts in a range of organisations.

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