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SYSTEMIC THINKING AND THE LEARNING ORGANISATION

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Abstract

Systemic thinking emerged in the 1940s in critique of reductionist thinking. Systemic thinking aims to use two aspects to interpret social systems, namely 'synergy' where the sum of the parts is greater than the whole, and interrelatedness which address the relationships between component parts. Such an approach aims to build to a holistic view, one which coexists with the environment taking into account the continuous flow of information backward and forward known as feedback. While the adoption of systemic thinking has been slow because it is not reductionist in nature, as opposed to the accepted scientific approach, it is a powerful tool with its emphasis on holism, context and seeing processes of change or behaviours over time.

Despite its slow adoption, systemic thinking can be successfully integrated into the workplace. It will require the presence and practice of learning at the individual, group and organisational level, together with enablers such as a culture of exploration and innovation, empowerment, and the 'space' or opportunities to practise the skills putting the learnings into action. These attributes when present at an organisational level, typify a learning organisation. This paper overviews systemic thinking in the context of the strategic management process, and then discusses learning, its relationship to systemic thinking and the learning cycle itself, with particular emphasis on action and reflection. The learning organisation is overviewed and the parallels between learning organisations and systemic thinking are identified. Implications for the broader research study are drawn throughout.

SYSTEMIC THINKING AND THE LEARNING ORGANISATION

INTRODUCTION

This paper represents the initial stages in a much broader study whose working title is *A Systemic Architecture Supporting the Transition from Strategic Planning to Strategic Fulfilment*. The study involves the examination of the strategic management process within a business unit of a large Australian based financial organization, with emphasis on its purpose as a learning process, and with the application of learnings to achieve desired change and to build organisational capabilities. Early observations of those involved in the strategic management process suggest there is limited understanding of the process itself and little acknowledgement that participants are engaged in a learning process. Instead, behaviours point to an emphasis on strategic planning, with participants viewing it almost as a task on a laundry list of activities, a task repeated regularly in a routine way and which should be completed in order to get back to work. An absence of reflection and a lack of processes in place to surface the connections between planning, implementation and performance measurement all contribute to an ineffective strategic management process. The adoption of a systemic approach will create a shift in current perceptions and, behaviours, by providing an understanding of the theory, and guidance to aid the appreciation of strategic management as a cyclic, ongoing process, with a threefold purpose.

The inculcation of systemic thinking within an organization is likely to require the presence of several enablers, namely: the presence and practice of learning at the individual, group and organisational level, a culture of exploration and innovation, which implies a receptiveness to new ideas, and the 'space' or opportunities to practise the skills putting the learnings into action. These enablers could be considered more broadly as important attributes of learning and in fact when present at an organisational level could typify a learning organization. Hence the purpose of this paper is to overview systemic thinking, in the context of the strategic management process and to then discuss learning, the learning organization and the parallels between learning organizations and systemic thinking.

WHY CONSIDER A SYSTEMIC APPROACH, LEARNING AND LEARNING ORGANISATIONS IN THIS STUDY?

The effective deployment of the strategic management process shapes an organisation's future, by bringing together each of the elements of strategic planning, implementation and performance management in an ongoing and cyclic process. The process aims to address each of the questions: "Where are we? Where do we want to be? How do we get there?" And "How do we measure progress?" The strategic management process as deployed within the study's research group, is contributing to suboptimal performance. The problems observed to date include: the aforementioned emphasis on planning; a disconnect between each of the phases within the process compounded by different areas responsible for each phase; limited opportunities to integrate learnings particularly from the implementation and evaluation phases into the plan itself; limited dissemination and communication of information; and limited opportunities for participants to reflect on their own decisions and behaviours, identifying ways in which they have contributed to outcomes, and where necessary make changes.

Despite strong financial performance to date, this is unlikely to be sustained or improved upon without a significantly different approach, one that encourages a holistic view to strategic management and one that focuses on relationships and interdependencies. A systemic approach offers this.

Learning is also central to this research, firstly because of its role in strategic management. Strategic management is a learning process, where information is gathered through the searching process of an organisation's internal and external environment, and is synthesised to generate knowledge. This is then shared and implemented. Hence, the cycle of strategic management is similar if not identical to the cycle of learning, that is, the planning, implementation and evaluation phases map perfectly onto the learning cycle. Learning is also fundamental to the inculcation of a systemic approach, if it is to be embraced by the research

participants and then acted upon. Importantly, learning must occur not only at the individual, but also the organisational level, if the strategic management process is to be deployed effectively and a systemic approach adopted. In achieving these aims, the intention is to capitalise on some early observations of the research group, which include receptiveness to new ideas that manifest themselves in innovation particularly in terms of product development, and visible signs of employee empowerment in the encouragement of employee decision making, with corresponding operating authority by the organisation. These observations, supporting innovation and empowerment, are consistent with those of a learning organisation.

SYSTEMIC THINKING – THE THEORY

What is a System?

A system is composed of a number of elements, interacting, interdependent and interrelated. It has inputs and outputs and is characterised by its purpose. Ackoff (1981) defined three conditions that a system must satisfy '1. The behaviour of each element has an effect on the behaviour of the whole, 2. The behaviour of the elements and their effects on the whole are interdependent and 3. however subgroups of the elements are formed, each has an effect on the behaviour of the whole and none has an independent effect on it.' (1981, p15)

Systems are systems within larger systems. 'When we focus on organizations we are concerned with three levels of purpose: the purposes of the system, of its parts, and of the system of which it is part, the suprasystem.' Ackoff (1981, p23) A key to thinking systemically, according to Capra (1996), is the ability to shift between these systems levels, recognising each will represent a differing level of complexity and each will have properties that are exhibited at that level and are not present at levels lower. Owing to the interdependent and interrelated nature of systems, each part of the system has properties that it loses when separated from the system, just as every system has some properties that none of its parts do. Ackoff (1981). Thus a system requires all parts to be present to carry out its purpose optimally and to be arranged in a specific way for this purpose to be optimised. Additionally, systems coexist with the environment, taking into account the continuous flow of information backward and forward known as feedback. Hence, the shape and stability of a system can change / maintained on the basis of this feedback.

Systemic Thinking – What is it?

Systems theory emerged in the 1940s as a critique of reductionist thinking. It represented a new perspective offering a way of thinking in terms of connectedness, relationships, and context. It allows us to think in terms of *events* i.e. reacting to a situation without understanding its cause, to look for *patterns* in situations and to think in terms of *systems* i.e. the influencers of patterns, the identification of which can drive change.

Systems thinking emphasises wholes and interconnections, as such a system cannot be understood by breaking it down. Ackoff (1981). This is termed synthesis. In contrast, analysis is the process of taking apart something to be understood, examining the component parts separately in an attempt to understand the behaviour of the parts, and then reassembling them attributing the understanding gained of the component parts to the whole. This view known as 'reductionism' is the application of analysis to every experience – breaking them down to ultimately indivisible elements. It has been the basis of scientific thought since Newton. It is also the antithesis of systemic thinking. The basis of systemic thinking is synthesis: building to understanding, revealing why things operate as they do, as opposed to analysis, which allows us to look into things and build knowledge. Ackoff (1981). Capra (1996) elaborates 'systems thinking is contextual, which is the opposite of analytical thinking. Analysis means taking something apart in order to understand it; systems thinking means putting it into the context of a larger whole.' Capra (1996, p30)

Thus systemic thinking aims to use two aspects to interpret social systems, namely 'synergy' where the sum of the parts is greater than the whole, and interrelatedness, which addresses the relationships between component parts. Such an approach aims to build to a holistic view, and by taking into account feedback, seeks to describe systemic behaviour such as processes of change or behaviour over time.

A systemic approach can aid the understanding of strategic management with the emphasis on holism. Appreciating the whole prevents the potential "unhooking" of key elements within the strategic management process, particularly around the implementation and evaluation phases. Additionally, it establishes the recognition that each phase within the process has meaning and is purposeful, yet is not autonomous, for each phase can only be fully understood within the context of the others. Finally a systemic approach offers a number of tools that can be useful in strategy development and implementation.

The field of systemic thinking has generated a broad array of tools that can be used to model a system's structure and behaviour, communicate understanding of the system and help design systemic interventions.

Overview of Prevailing Approaches

The difficulty with systemic thinking, as a field it is both broad and diverse with many differing interpretations and approaches. Hence individuals can be using the terms 'systemic thinking' but their underpinning approaches can be quite different. Therefore it is useful to have at least at the highest level an understanding of *some* of the prevailing approaches. These include General Systems Theory, Organizations as Systems, Hard Systems Thinking, Cybernetics, System Dynamics, and Soft Systems Thinking, Emancipatory Systems Thinking, Critical Systems Thinking Jackson and Lane (1995).

Briefly, General System Theory (where the emphasis is on holism) attempts to identify concepts, laws and models applicable to all systems; Organizations as systems seek to understand organizations in terms of their interacting subsystems and relationships with the environment. A scientific approach underpins Hard Systems Thinking, in the attempt to model and simulate areas under investigation, Cybernetics, on the other hand, unites organisational structure with information and control systems. System Dynamics integrates the role of feedback processes and associated modes of behaviour, modelling this using computer simulation to understand events or optimise decision-making. Soft Systems thinking concerns itself with complex, ill-defined scenarios and is appropriate for social systems. Emancipatory Systems Thinking deals with ways in which 'system approaches can be used in coercive situations to assist less powerful groups' Jackson and Lane (1995, p226) and finally Critical Systems Thinking basing itself on 'critical reflection and social awareness, on complementarism and on ethical commitment.' Jackson and Lane (1995, p227)

Total Systems Intervention, Flood and Jackson (1991) is yet another approach and actually underpins this research, so chosen because of its emphasis on a problem's context which guides to the appropriate system's methodology, yet simultaneously being aware of the role of perception in shaping the problem and designing the solution. Hence it provides an insightful way of understanding and dealing with problems, in turn contributing to learning opportunities.

LEARNING AND ITS RELATIONSHIP TO SYSTEMIC THINKING

The adoption of a systemic approach has great organisational value. It offers a new perspective, providing a more accurate picture of reality, it can help design organisational interventions in response to problems (identified or surfaced) which are more likely to secure desired results and be enduring, and can help focus the organization on the long term, i.e. behaviours over time. However, the adoption of a systemic approach by an organization will require the ability to learn. Additionally, requiring the processes and organisational architecture which are inherent in learning organizations, to be in place to support the adoption and to ensure that the results of systemic interventions become part of the organisational memory.

What is Learning?

Learning is a goal seeking cycle that changes or reinforces mental models and paradigms, and this translates to a change in behaviour. Unfortunately, to many the popular definition of learning is the traditional teacher/student context, a passive relationship where information is made available and so awareness or understanding grows but there is no associated application of this awareness or behavioural change. This view is supported by Argyris 'most people define learning too narrowly as mere "problem solving", so they focus on identifying and correcting errors in the external environment' Argyris (1991, p107) and Kofman &

Senge 'Even when we claim we want to learn, we normally mean that we want to acquire some new tool or understanding. (1993,p20)

Hence learning is evidenced by action, an intrinsic part of Palmer's (1981) general model for learning. *Phase 1 Discovering* during which 'a participant will define goals, standards, or ideals as well as the way things actually are. *Phase 2 Formulating* new behaviour, which encourages the development of new behaviour at a verbal level before it, is put into action. *Phase 3 Producing* new behaviour where formulations are put into action and *Phase 4 generalising* to the real world' Palmer (1981, p150 –151) This learning cycle maps perfectly to that of strategic management.

Action and Learning

Learning results from doing. However doing does not necessarily equate to learning. Hence learning must be made explicit during the normal process of taking action, which can then be applied, more widely in organisational life. Bunning(1991). This theme of action is amplified by action learning, Argyris (1993) has identified some key assumptions, namely ' learning should be in the service of action, not simply discovery or insight. The competencies involved ... are the same when dealing with individuals, groups, intergroups ...' (1993, p5)

Argyris (1993) identified five characteristics important in action learning: learning is best derived from the use of genuine problems requiring action and implementation, action should correlate to participant's skills and competence; problems should require innovative thinking and action, participants must have the authority to take action and lessons should be readily transferable to future problems. It is in recognition of this that the methodology underpinning this study is one of Action Research. Briefly, action research brings together two elements in research design, action: with research participants shaping the inquiry and then implementing plans, and theory in the application of a theoretical basis. It revolves around diagnosis, agreeing a course of action, the application of plans and reflections on outcomes. These reflections then serve as inputs to the next cycle of ongoing change. Action research has defining characteristics, focussing on learning or increasing knowledge, mediating discourse linking theory to practice, participation with a tight connectivity to the knowledge creation process, a social emancipatory nature and an emphasis on driving change.

Environments supportive of this sort of learning tend to be ones where new and extensive ways of thinking / working are nurtured, where employee empowerment is valued together with individual accountability and responsibility. Learning occurs best in a supportive environment, one of exploration and innovation, and one of reflection.

Role of Reflection

What is it?

While action is pivotal to learning it should work hand in hand with reflection. 'Action is critical, but the action we need can spring only from a reflective territory that includes not only cognition but body, emotions and spirit as well.' Kofman & Senge (1993, p7) Marquardt (1997) again makes the connectivity between action and reflection in his learning formula described as L=P+Q. Where learning equals existing or programmed knowledge plus questioning insight. (1997, p5)

Reflection involves thinking about things ie it is purposeful, and making sense of them. It is the examination of critical issues, drawing connections between them and then discerning some meaning. It involves understanding the relevance of this meaning and then the application of the learning to appropriate situations. A reflection cycle therefore traverses each of the four steps: describe, analyse, plan and implement.

Effective reflection establishes connections between experiences, is continuous, challenging in that it requires thinking in new ways creating a shift in thinking, and creates space or time for more considered and consequently more effective action. 'Learning often requires altering the flow of time: slowing down the

action to enable reflection on tacit assumptions and counterproductive ways of interacting.' Kofman & Senge (1993, p18)

Importance of Reflection

Reflection is an important element in the development of self-evaluation skills. It enables us to benefit from our learning, building upon and developing existing understanding, whilst making learning explicit. It can help individuals monitor progress: by 'tuning' the individual in to where they are at, monitoring progress and assessing the end point.

Importantly reflection is an intrinsic part of learning. Marquardt differentiates the types of learning by 'the degree of reflection placed on action that has occurred in the organisation' (1997, p5). He explores adaptive learning, which is learning from experience and reflection, anticipatory learning which is a vision-action-reflection approach and generative learning which is learning that is created from reflection, analysis, or creativity.

Reflection also enables individuals to recognise the gap between espoused theories (what we say) and theories in use (the theories that underlie our actions). Otherwise, as Senge points out 'we may believe we've learned something because we've got the new language or concepts to use although our behaviour may be completely unchanged.' Senge (1992, p10)

Despite the obvious importance of reflection, in terms of this broader study, anecdotal evidence would indicate there is very limited formalised individual or group reflection occurring, in that, there is no dedicated "work time" devoted to reflecting on issues. At best it is happening on an adhoc basis over coffee, which at the very least creates the "space" for reflection yet it doesn't appear to translate to shifts in thinking and corresponding action. This can be attributed to both its adhoc nature and the participants' lack of skills of reflection. These skills will need to be developed.

Developing skills of reflection begin with recognising 'leaps of abstraction' Senge (1992,p8) or generalisations. To uncover these, requires conscious effort, looking to the data that the generalisation is built upon. This in turn requires the examination of mental models and metaphors.

Mental Models

Mental models shape how we act and affect what we see. Mental models construct our perceptions of reality and therefore all resultant actions are based on perception. Stacey stated 'What managers believe about the causes of success the explicit and tacit theories they hold to, determines what they do.' Stacey (1993, p208) A problem arises with mental models, when they are tacit i.e. when they exist 'below the level of awareness.' Senge(1992, p5). Therefore mechanisms must be in place to reflect on and surface them. According to Senge (1992) two skills are necessary, reflection and inquiry. Reflection is the process of how we form our mental models and how they shape our actions, while inquiry concerns how we operate in face-to-face interactions with others.

Metaphors

Language and metaphor also serve to create and shape our reality. As early as 1942, Pepper was discussing this in terms of his root metaphor concept:

> A man desiring to understand the world looks about for a clue to its comprehension. He pitches upon some area of commonsense fact and tries if he cannot understand other areas in terms of this one. This original area becomes then his basic analogy or root metaphor. He describes as best he can the characteristics of this area. Or, if you will, discriminates its structure. A list of its structural characteristics becomes his basic concepts of explanation and description.
> Pepper (1942,p91)

A metaphor therefore, is a mental picture that facilitates understanding when applied to an unknown or unfamiliar concept, or more accurately it is the creation of a parallel meaning that helps understand one concept relating it to another. Clancy picks up the theme whilst identifying the potential downsides

> the process of understanding and comprehending is therefore metaphorical in nature – the understanding and expression of one phenomenon in terms of another. This mapping of thought – the build-up of mental constructs from the simple, easily understood to the complex and problematical – this application of the concrete to wider circumstances can be helpful but it can be dangerously wrong.
> Clancy (1989)

Metaphors can be extremely useful in helping structure and articulate understanding, a key communication tool. In a positive sense, they can illuminate new areas helping us to understand, while conversely blinding us to other important aspects. Few of us use original metaphors – we get locked into them, becoming part of the vernacular or slang. Hence, metaphors can develop an accepted meaning, which have the ability to colour our perceptions, shaping our thinking subconsciously.

Clancy (1989) has identified six most commonly used metaphors in business: journey, machine, organism, war, game and society. From this it is possible to type the metaphors into two classes: descriptions of processes and description of systems. An examination of metaphors in use can provide tremendous insight as to how people view their world and how this view shapes their actions. Early observations from the researcher's broader study indicate that the 'journey' is the prevailing and seemingly preferred metaphor, being used in a number of different contexts. When applying Clancy's typology, it becomes apparent that participants view their world in terms of processes. A process metaphor is not in itself, inappropriate because it conveys many key business concepts: the ideas of challenge, being "in it for the long haul", experiencing different scenarios over a period of time and as a team. What if fails to convey however are the concepts of being part of something bigger – some transcendent purpose, relationships and interdependencies, the defining characteristics of a system. Furthermore, it also misses the meanings contained in the other metaphors.

The Importance of Learning to the Inculcation of a Systemic Approach

For this researcher, the implications of inculcating a systemic approach are that participants will be introduced to the concepts of systems thinking, which ignites an enthusiasm for and appreciation of the benefits that a systemic approach offers. This will in turn shape the way participants view the strategic management process and how they design and implement organisational interventions. In other words, to implant ideas that change participants' mental models, which then translates to changes in behaviour. To reiterate the earlier definition of learning, learning is a goal seeking cycle that changes mental models and paradigms, and this translates to changes in behaviour. Invoking a mindset shift necessitates an examination, and reshaping, of participants' mental models. This will necessitate formalising reflection as an ongoing process, exposing and validating assumptions and exploring the full utility of metaphor: as a lens to gain a new perspective (Morgan 1993), and in terms of compactness, inexpressibility and vividness resonating with individuals' experiences thus having a cognitive and emotional impact. Dunford and Palmer (1996)

Because a systemic approach is an entirely new concept for participants engaged in this research, it will require the learning cycle to be traversed in full. It will require participants to explore the concepts of systemic thinking in *the discovery phase,* articulating the ideas into a framework that each participant can understand, make their own and enact upon in the *formulation phase* which will in turn drive their application to the strategic management process in the *producing phase* and then reflect on outcomes allowing learnings to be applied beyond the immediate in the *generalising phase*. Owing to the complexity of the material and the nature of learning itself, participants will need to cycle the model continuously.

Naturally implanting a systemic approach will require the recognition of each of the five core principles of learning, in research design. These are: learning is transformation and takes place over time, involving a continuous cycle of action and reflection and which is most effective when it is relevant to the learner. Learning is most effective in a group environment that is challenging and supportive. Jogi (2000, p9)

LEARNING ORGANISATION

Learning is (or should be) as much a task of the organization as is the production of goods and services. It should be occurring simultaneously with daily activities, an intrinsic part of our daily lives. Learning is core to the learning organization occurring at each of the three levels: individual, group and organisational.

Organisational Learning

Two types of learning are necessary in all organizations. The first is single-loop learning: 'learning that corrects errors by changing routine behaviour. ...The second is double-loop learning: learning that corrects errors by examining the underlying values and policies of the organization.' Argyris (1993, p5) Both single loop and double loop learning should be occurring at each of the three levels within and organization.

Organisational learning also emphasises the central tenet of learning, being action. 'In order for organisational learning to occur learning agents' discoveries, inventions and evaluations must be embedded in organisational memory. They must be encoded in the individual images and the shared maps of organisational theory in use from which individual members will subsequently act.' Argyris & Schon (1978,p133) Learning can be said to have occurred when differences in behaviour have been detected, results embedded in the organisational memory and then acted upon. Just as it is paramount to individual learning, reflection can be used to foster organisational learning. According to Bunning (1991) 'employees should be encouraged to engage in regular reflection and initial self appraisal with the explicit intention of increasing insight and future effectiveness.' (1991,p9)

Nevis, DiBella and Gould identified a three-stage model to represent the organisational learning process '1. *Knowledge acquisition* The development of creation of skills, insights, relationships, 2. *Knowledge sharing* The dissemination to others of what has been learned and 3. *Knowledge utilisation* The integration of learning so it is broadly available and can also be generalised to new situations.' (1993,p4) It should be pointed out that while this is not a new concept, it would appear that in the majority of organizations there continues to be a disconnect between each of the phases and it is not the same organisational members who conduct each of the phases thereby compromising the effectiveness of the organisational learning process. Early observations from the broader study confirm a significant disconnect between, strategic planning, implementation and ongoing measurement. Not only is each of the phases conducted by separate bodies, there is limited interaction and communication between them.

Learning Organizations

Having explored the concept of organisational learning, it is not an intuitive leap to acknowledge that learning organizations seek to promote collective and organization wide learning. The hope, indeed expectation, is that this will contribute to organisational performance by behaving more intelligently and by being flexible and adaptive. According to Macher (1992), effective organizations have the capacity to learn from experience and they have learned how to learn.

It is pertinent to point out however, that it is possible to have learning without contributing to a learning organization. Argyris & Schon 'It is clear that organisational learning is not the same thing as individual learning, even when the individuals who learn are members of the organization. There are too many cases in which organizations know less than their members.' (1978)

It would be great to assume that if individuals are continually learning in organizations, organizations are also learning. However as Kim points out 'in most cases learning is done at an individual not at an organisational level. Often times there is no coherent process for integrating the learnings of many individuals into a form that can benefit the whole organization.' (1994,p2)

What then defines a learning organization? Marquardt identifies a number of dimensions and important characteristics of a learning organization. Among them: 'learning is accomplished by the organisational system as a whole, almost as if the organization were a single brain. Organisational members recognises the importance of ongoing organization wide learning for the organization's current as well as future success,

learning is continuous, strategically used process, system thinking is fundamental' (1997, p3) This builds on the work of Mills and Friesen (1992) who identify characteristics of successful learning organizations as: '(1) it should possess mechanisms which transfer learning from an individual to the group; (2) is must make a commitment to knowledge; (3) it must have a mechanism for renewal within itself and (4) is should possess an openness to the outside world' (p146)

The essence of the learning organization is that of continuous learning supported by a learning culture, within a systemic framework. A learning culture: has a future, external orientation and openness to the exchange of information; there is a pervasive commitment to learning and personal development and a climate of respect, trust and empowerment. Jaccaci (1989) discusses a learning culture in terms of collective creativity, relationships and experience, with the measure of success being the combined wisdom of groups and the synergy of the organization as a whole. Gephart et al elaborate 'it is continuous learning at the systems level, knowledge generation and sharing, critical systemic thinking, a culture of learning, a spirit of flexibility and experimentation and people centred.' (1996, p38)

PARALLELS BETWEEN LEARNING ORGANIZATIONS AND SYSTEMIC THINKING:

What then are the parallels between the learning organization and systemic thinking? This is best addressed by the concepts of systems within systems, recognising the relationships between component parts in terms of interdependencies and interrelationships, holism and synthesis.

Marquardt defines a learning organization systemically as 'an organization which learns collectively, continuously transforms itself to better collect, manage and use knowledge for corporate success, empowers people within and outside the company to learn as they work and utilises technology to optimise both learning and productivity.' (1997, p4) Hence, a systems linked learning organization has five subsystems with learning at the core, and people, organization, knowledge and technology subsystems augmenting learning. Systems level learning however is more than the sum of employees' intellectual capital and learning. According to Gephart, 'it occurs when organizations synthesize and then institutionalise people's intellectual capital and learning that are housed in their memories – their cultures, knowledge systems and routines – and in their core competencies.' Gephart (1996,p38)

In learning organizations employees see themselves and their work as part of a much larger system, beyond their immediate environs. They recognise the connections between their functions to those that came before and after. Employees begin to adopt a more holistic view of their organization seeing and thinking of the organization as management does. Macher (1992) Within learning organizations, individuals are always looking to, and recognising the consequences of their actions on the system as a whole, rather than just on their local environment. In looking for consequences, individuals seek to make connections thereby appreciating relationships and acknowledging interdependencies.

A failure to draw these connections and act upon them, contributes to organisational dysfunctionality resulting in sub optimal performance. Senge and Kofman (1993) identify this fragmentation together with competition and reactiveness, as significant contributors to dysfunctionality. Continually breaking problems down, using competition to be the only driver for change and learning, and responding to external forces as opposed to drawing upon inspiration, imagination and experimentation, retards understanding, limits learning opportunities, and inhibits organisational growth through innovation and ultimately organisational sustainability.

Individuals within organizations must be encouraged to think in new ways, recognising patterns of behaviour in terms of feedback loops and thinking critically in order to uncover the assumptions shaping mental models. They must engage in critical systemic thinking. Gephart et al (1996) The drivers of this are clear. Organizations have to deal with a vast amount of information, a higher level of complexity and a greater degree of turbulence than in the past. These factors radically impact decision-making. Organizations must be capable of digesting, and synthesising information quickly and more often, and this will in turn dictate the rate of organisational innovation. The impact of this according to Klir will be the need for organizations to act as anticipatory systems i.e. 'systems that possess ongoing capabilities of building relevant systems

models of their environments and are able to use these models for making decisions and action s that optimise specific goals. This means that an ongoing systems modelling of relevant aspects of the environment will be an essential feature of the decision making organizations.' (1991, p190)

It should be no surprise that a systemic approach and a learning organization are so tightly entwined as it comes down to the very nature of the organization itself. According to Stacey 'all human organizations are systems open to and interconnected with their environment' (1993, p210), they exhibit patterns of behaviour and consequences of change, often unintended and unexpected.

The Implications for the Broader Study

Potential exists for the successful inculcation of a systemic approach. Early indications suggest that the organization is willing to review old ways of thinking and doing. This is evidenced by this research having sponsorship at the highest possible level within the organization, significant attempts are made to collect, manage and use knowledge for corporate success as evidenced by the plethora of tools and techniques. These range from Lotus Notes data bases to courses developing communication and listening skills; and the empowerment of employees has received greater attention in recent months on the back of employee opinion which has resulted in the development of a number of programs relying on employee participation to design and drive through change. The greatest areas of concern are the lack of recognition (at the behavioural as opposed to the theoretical level) that organisational processes, functions and interactions are related and interdependent – "a silo mentality", a predisposition for analysis as opposed to synthesis which is exacerbated being a financial organization, and a reliance on externalities particularly in the form of competitor behaviour, to drive change resulting in an organization that tends to be reactive than anticipatory in nature. The upside is the recognition that the organization needs to develop these 'anticipatory' skills, particularly around optimising and supporting strategic decision making which has paved the way for this research.

CONCLUSION

The adoption of a systemic approach has great organisational value. It offers a new perspective; it can help design organisational interventions and can help focus the organization on the long term. However, this can only be achieved by the ability to learn at the individual and organisational level, and requires skills and processes in place to support it such as reflection. The characteristics of the learning organization such as a culture of learning, a spirit of flexibility and experimentation whilst obviously beneficial to the adoption process are subservient to the capacity to 'see and work with the flow of life as a system.' Kofman and Senge (1993,p16) Hence the concepts of a systemic approach and a learning organization are tightly intertwined and therefore it is possible to conclude that the adoption of a systemic approach will contribute to the development of a learning organization, and the presence of a learning organization paves the way for the inculcation of a systemic approach.

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