Strategic Resilience and innovation: A Financial Services Case Study

Abstract

This case study illustrates an approach to balancing the need of a large corporate to exploit its current space of operations while building its capacity for innovation. The purpose of the innovation capability is to increase the resilience of the organisation in the face of changing environmental characteristics. The study is of a large Australian financial services organization in an oligopolistic environment where there was little internal or environmental incentive to innovate. The challenge was to produce an organizational system and governance structure which would incubate a capacity for innovation while maintaining an effective bridge to the mainstream operations. The case account draws on one of the authors experience as an architect of the change process and therefore as a participant observer combined with systematic qualitative and quantitative research into key aspects of the culture pertaining to a capacity to support innovation among the executive team oversighting the project. The approach considered and drew on a diverse literature to provide a foundational set of ideas to guide and interpret the process of change. This includes adoption of a complex systems perspective.

Introduction

In October 2005, a small team was put together to explore what a strategic innovation capability could look like for in one of Australia's major banks. The approach adopted drew on a range of fields including Social Complexity, Systems Theory, and of course Innovation, and was initiated explicitly to increase the resilience of the organisation relative to a range of future plausible events. The initiative attempted to achieve this in two related ways. By putting in place strategic innovations:

- designed to build resilience against future plausible events;

- to perturb the environment in ways positive to the organisations survival prospects.

The idea of resilience features prominently in the general and complex systems literatures. The capacity is argued to be a function of a capacity to adapt or learn. Within general systems the work of Ross Ashby (1974) and Stafford Beer (1990; 1995) is relevant. More recent work by Kauffman (1996) and Kauffman and Macready (1995) extend these concepts and introduce the idea of 'edge of chaos'. The central argument is that systems are maximally adaptive and able to take long leaps in a fitness landscape, avoiding becoming stuck in sub-optimal spaces, when they are in a critical zone of self-organization. From the perspective of classical management theory, however, such a position would be seen to lack effective control and to be inefficient – compromising the organisations viability in its *current* environment. The challenge then is how to balance these needs in real world organizations which face competitive pressures or, as in the case of the Australian Financial sector, a structural complacency which seriously discounts future risk.

However, despite being regularly invoked, the application of complex systems perspectives to organization study currently has significant limitations. These derive primarily from its origin in explaining dynamics and resilience in natural rather than human systems. This case draws on the author's prior theoretical work which sets out a theory of organization that draws on both autopoietic and complex systems theory, extending the application of the latter into the social domain. The theory focuses in particular on the role of language in generating organizational 'spaces'.

We now briefly describe the research methodology and research context before moving on to a discussion of the approach adopted and the theoretical rational for it. Consideration is also given to the outcomes from the perspective of the organization.

Methodology

The research described in this paper, was undertaken with one of the authors as participant observer and researcher. As a member of the team given responsibility for developing the innovation capability, the author was actively involved in the design and all decisions regarding the way in which the business case for innovation was developed, the methodologies applied and the ongoing evolution of the capability once it was funded.

Data Collection

A reflective journal was maintained from the beginning of the initiative in October 2005 through to the writing of this paper. The journal catalogued key events and reflections under four broad categories:

- People met

- Decisions taken

- Theory examined

- Activities and events

The rationale behind these broad classifications developed over the initial months, moving through a couple of iterations before stabilizing around these four distinctions.

The journal was updated on at least a weekly basis over this period, sometimes more often, depending upon activities taking place. The journal was maintained as an Endnote database with the fields renamed to match the above. The value of this approach is that it allowed easy searching of the journal for future reference and cross-referencing to reading material where appropriate.

Role of the Researcher

The author's role in the team was to take principle responsibility for the design of idea generation and modelling techniques, specifically drawn from the fields of complexity and systems theory. He did not have ultimate responsibility for decision-making for the innovation capability, this rested with the Head of Organisational Innovation and the organisation's Chief Technology Officer to whom the team reported, however he was actively involved in the discussions and always involved in the preparation of research material for them.

The Institutional Context

The institution is one of what are referred to as the 'big four' Banks in Australia. This concentration of large banks largely came about as a result of Government regulation known as the Four Pillars policy. The Four Pillars policy maintains the number of major banks by not allowing merger or acquisition by overseas competitors or between the 'big four'. In effect this situation has created a virtual oligopoly between the Banks and although today the financial services market is experiencing increased competition in the form of overseas entrants and smaller Australian competitors, such as regional Australian banks, by and large the operating environment has been relatively benign and significantly stable.

This historical context has allowed the 'big four' Banks to remain competitive without any great push to innovate or change. Like many publicly listed companies, they have tended to assume a very short-term focus in the way they conceptualise their renewal strategies and with that their organisational resilience. This short-term focus is largely a response to constant analyst and shareholder pressure for the maintenance of profit growth in the short-term. Indeed a recent global survey of financial services executives by McKinsey, found that

more than half felt innovation was more challenging in financial services due to the expectation for short-term financial success (Anon, 2007:5).

The short-term focus has also been combined with a risk-averse attitude to strategic change. It has been recognised within the Australian market that a small drop in profits will be disproportionately punished by the markets (in terms of devaluation of the share price), yet out performance (of analyst expectations) receives only minor upside in terms of share price movement. This dynamic combined with the luxury of a relatively protected and stable operating environment has allowed the continuation of a highly risk averse and conservative culture within the Bank, as it has amongst its industry peers.

The risk-averse nature of the culture was further institutionalised in the early 1990s following a period of deregulation in the Australian financial services industry. The relaxation of certain regulations in the 1980s led to a period of relatively experimental and higher risk activity in the sector similar to that currently being experienced in the US and the UK. These unfortunately became victims of the 1987 stock market crash. Within the institution under study this triggered a near collapse, forcing a sell-off of many businesses and investments (good and bad) in order to survive. The 'near death experience', as it has become known within the organization, has become a powerful story that arguably drives (or is at least sometimes held up as a rationale for) continuing risk averse behaviours and decisions. Since this time, the extended economic boom of the past 10 years has arguably helped support a run of record profits for the 'big four'. Revenue growth has more or less taken care of itself as a function of the country's broader economic activity and the focus, at least in the early to mid-1990's, has been on cost reduction as an important contributor to profit growth.

The benign nature of the operating environment has however begun to change over the past couple of years, particularly with the entrance of what Christensen and Raynor (2003) would describe as 'low-end disruptors' to the Australian financial services market. These are mainly foreign banks providing lower cost, highly focused products impacting on market share and eroding margins in key product areas. Slowing economic growth rates have also placed pressure on the inwardly focused cost-reduction strategies. However, perhaps due to this conservatism, Australia has remained relatively immune to the sub-prime crisis currently affecting the US and the UK and therefore many of its offshore competitors.

Innovation at the Bank

In early October 2005, a Divisional Group Executive in charge of institutional support functions invited the then Head of Risk for the Division to head up a new team that would explore what would be required to implement an innovation capability within the Bank. The team would report into the Bank's Chief Technology Officer. Initial conversations with the Group Executive indicated that the scope of the initiative would be to remain within the Division and that it would take about 3 years before real results were expected. It is important to note that the team began with no budget what-so-ever and as such needed first to justify what resources were required and how they would be used– it was made clear that an ideas 'suggestion box' would not be well received.

For the first twelve months the Innovation Unit consisted of four people. The new Head of Organisational Innovation (the team lead); the author, viewed as a specialist in systems methodology and Complexity; a partnership expert, who had an extensive personal network of contacts in the innovation field and amongst technology firms, and an IT graduate from the Banks graduate program. With the exception of the partnership expert, none of the team had worked in the innovation context before and as such the exercise was completely 'Greenfield' in its conceptualisation.

Next we discuss the initial thinking the team went through in order to establish the innovation capability. This was conceptualised in terms of the different patterns that existed in relation to innovation and the ones that needed to be formed. The first of these patterns was language.

Patterns of Language

Given the cultural characteristics described in the previous section, it is not surprising that the view held by the broader organisation (i.e. beyond that of the project's immediate sponsors), toward the need for innovation, could best be described as agnostic. Certainly, there was no felt need to divert resources away from existing initiatives and strategies to build an innovative capability. At worst innovation was viewed as a threat to the delivery of short-term goals and therefore in competition with normal business activities, rather than in support of them.

A series of meetings with senior managers from across the host ivision showed that although there was acknowledgement that the short-term focus of the organisation was not ideal, the need to deliver their results in the short-term through improvements to what they were already doing was the focus and unless innovation could help with this "I ain't buying" was the response. Indeed one general manager pointed out that if she were to free any resources to participate in innovation activities, she would then be under threat of losing those resources in any future cost cutting exercise that could flow through the organisation, as arguably they were 'excess'.

In attempting to understand the patterns and the complex 'attractors' inherent in the organisation, the team considered it from the perspective of autopoietic theory (Maturana & Varela, 1980). Autopoietic theory is a biological systems theory that describes the nature of living systems as being self-producing. The theory provides explanations of the way in which biological systems interact with their environment, experience cognition and develop language. The theory, although not formally considered under the umbrella of complexity, is consistent with complexity in a number of ways, indeed *"…the conceptualisation of biological systems proposed within autopoietic theory is philosophically consistent with the underpinnings of the theory of complex systems. These bodies of work overlap to the extent that both conceive of micro-agents as bounded (autonomous) self-referential systems."* (Goldspink & Kay, 2004*)*

Autopoietic theory describes a number of discretely different patterns of interaction between agents in a social system, and more importantly how those interactions evolve over time. Maturana and Varela (1992) use the notions of structural coupling, consensual domains and linguistic domains to describe both the process and result of ongoing recurrent interactions between individuals in an environment. Without attempting to recount the complete theory of autopoiesis here, the central implication of these relationships is that the patterns of action, cognition and language in a given circumstance are a function of a history of interactions, sometimes giving rise to a culture, or in Maturana and Varela's (1992:209) words, a "…transgenerational stability of behavioural patterns ontogenically acquired in the communicative dynamics of a social system". Central to the development of these patterns, language is seen to both direct and be directed by the history of interactions in a social system, and as such changes to the language used in relation to innovation represented the first step in developing the innovation capability for the Bank. The team needed to create a new linguistic domain within which innovation could exist, and whose relationship to everyday business activity was seen as benign.

Explore vs Exploit

James March's (1991) distinction between processes of exploration and exploitation provided this distinction. March notes *"Exploration includes things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation. Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, execution"* (1991: 71). Perceived as patterns of interaction, the 'explore/exploit' distinction gave the team a language to communicate the difference between the patterns of interaction required for strategic exploration and patterns associated with the efficient delivery of the day to day business. Significantly, this distinction created a linguistic space for innovation as it allowed stakeholders to untangle innovation related concepts from day to day activities. At the same time it helped people understand why innovation had been problematic in the past, as when previous initiatives were reviewed through the 'lens' of explore and exploit, the use of 'exploit' value sets for what should have been 'explore' projects became a common theme.

The tangible evidence for the changed pattern could be heard in the language of key members of the Bank's senior management. There was open acknowledgement that the space for exploration in the current Bank's operations had been whittled away over time, through successive rounds of cost-cutting and efficiency drives. There was also acknowledgement that a link existed between the Bank's ability to grow in the future and its ability to explore. In short, the need for an explore capability or pattern was seen as legitimate (at least with a growing subset of the organisation). It is important to stress that this change did not signify a willingness to undertake innovation, or divert resources away from current 'exploit' initiatives; nor did it signify what innovation meant for these managers in terms of the type of activity they thought it involved, it simply meant that innovation was a legitimate activity or pattern to have in the Bank.

Patterns of Interaction

In a complex system, patterns of language cannot exist in isolation; indeed language and action mutually influence the co-creation and destruction of each other. With the establishment of explore and exploit as a linguistic pattern, the need for a tangible pattern of social interaction was crucial. This required the establishment of a value proposition or business case for innovation that would support firstly the creation of financial resources and secondly a social structure to facilitate their use. The value proposition was put to the Division Group Executive in March 2006, linking the concepts of growth and innovation, and proposing both a social structure and an environment for the capability to develop.

Building on the explore/exploit distinction, a structure was proposed for what we termed the 'Explore Organisation', a virtual organisation populated by people from the rest of the Bank but operating under a different set of measures and priorities. Also proposed was a governance structure (to become known as the Innovation Panel), a conceptual framework of activities involving idea generation and development, and a gradual movement from discussions about innovation to actually doing something innovative.

It took approximately six months from the team's initial formation to the eventual formation of the Innovation Panel. The use of the word 'Panel' was specifically chosen as it was one of the few words for a social grouping that did not already have a culturally specific meaning within the organization and therefore would not be confused with other groupings such as 'steering committee' which denoted a particular form of activity and decision making style. The role of the Innovation Panel is to act as the board of the 'Explore Organisation', championing its needs, providing leadership directing the use of resources etc. The members of the Panel were identified by the Division Group Executive from across the whole of the Bank, with membership being undertaken on an explicitly voluntary basis, i.e. on top of one's 'exploit' responsibilities. Membership is non-hierarchical, with members (although relatively senior) ranging from Group Executive level, through General Manager and 'Head of', levels of the hierarchy. The formation of the Panel, allowed initial attempts at the generation of ideas from within the organisation, assessment and subsequent development of a subset of selected ideas, thus creating the first signs of tangible activity.

In terms of organisational resilience, however, the formation of the Panel was more significant, as it represented a unique body of people in the organisation, whose role specifically involved the exploration of longer term resilience. The types of conversations held within the Panel, cannot occur within the 'exploit organisation', as the outcomes from these conversations cannot be measured on a 3 - 12 month timescale, and for the participants it created a space where these conversations could be held safely. Culturally many members of the Panel had experience of innovation both inside and outside the Bank, yet when surveyed had considerable consensus that although innovation was crucial for organisational resilience, the survival of innovation within The Bank would best be achieved by remaining 'below the radar'.[1] The use of words like the 'The Bank machine', were used to implicitly describe what we had come to call the 'exploit organisation', indicating an experiential understanding of the

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[1] A cultural survey of the Innovation Panel members was held in September 2006, utilizing a combination of narrative techniques with Repertory grid interviewing. The choice of these approaches, was due to their epistemological consistency to autopoietic and complexity theory

distinction between the two forms of activity, yet amongst the Panel members there appeared to be little understanding of how to ensure the survival of 'explore processes' once activity moved 'above the radar'.

It was also clear that there was little in the way of conceptual frameworks to help the organisation understand that different activities required different forms of language, structure and resourcing in a way that was scalable. It is to this issue that ideas from Complexity theory became most directly useful.

The Panel's sense-making about Innovation

In order to better understand the assumptions and language that Panel members brought to the project a small research project was initiated. The aim was to:

(1) gain an understanding of the experiences of the Innovation Panel members in relation to innovation within Westpac;

(2) provide a picture of how members of the Innovation Panel currently perceive innovation and its potential role in the organisation;

(3) inform the development of the Panel as a leadership group; and to

(4) provide a picture of the cultural characteristics that are likely to impact on the way in which the Panel undertakes its role going forward

The methodology involved conducting interviews of as many panel members as were available (11 interviews were completed). Interviews were semi-structured in terms of process but this did not dictate content and hence interviews took individual paths and covered different terrains. Under such conditions, it would not be expected that each interview would raise the same issues. Further, although approximate indicators of frequency of ideas are provided in this document, this frequency might well be agreed with by others even though they did not raise the point in their own interview. Even a single opinion at approximately 10 % of the sample might be strongly held by the group. Thus, to a large extent, the report serves to raise issues to the point of discussion rather than attempt to accurately quantify the strength of a particular perspective.

Interviews typically commenced with a discussion of successful and problematic experiences with innovation, predominantly in the Bank but sometimes drawing on Panel members external experiences. This portion of the interviews was digitally recorded for later thematic analysis. A second phase of the interviews elicited, using a process called repertory grid technique[2], the interviewees' mental constructs around the behaviours of a spectrum of innovation managers[3] known to the interviewees. Two separate sets of analysis were undertaken after each interview. The first was a thematic analysis[4] of concepts that emerged in the first part of interviews. Repertory grids were also analysed individually in terms of thinking about innovation. This report is an amalgam of the main points raised during the analysis of individual reports (Goldspink et al., 2008).

Key observations relevant to this paper include:

The interviews provided a compelling characterization of the 'the Bank way' and contrasted this with what was required for innovation. Three overarching themes emerged in relation to the Panel's role.

The imperative to innovate

Few members of the Panel volunteered or described a clear imperative to innovate. There was more of a sense of 'wouldn't it be nice' rather than 'we must or else'. That is, a lack of

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[2] A notable strength of the repertory grid process is that it grounds constructs in real life experiences and minimises the injection of interviewer bias.

[3] This spectrum included examples of good and poor managers of innovation as well as an imaginary ideal and also the manager being interviewed.

[4] Using NVivo software

urgency with regard to the need to innovate was observed. A few members, however, did express that the operating environment in the future could well be radically different to the present and that incremental change was not going to be enough to best position the bank for the future. Some members described themselves as frustrated innovators, but generally only in terms of local initiatives, i.e. their ability to undertake projects within their area of direct control.

The nature of innovation

The perception of what constituted innovation, and hence presumably the role of the Panel, varied significantly. Typically it was defined around products, or as an initiative of limited scope, probably relating especially to the manager's own area to solve a current problem. A telling statement was, "What is considered innovation in the Bank would be considered normal in other organizations." Perceptions around innovation were often not linked to cultural characteristics or the potential value of innovation as it relates to the medium and long term There were few hypotheses about where or how people with appropriate value sets might be developed, recruited or fostered. Some suggested recruitment as a source of innovation energy but the more problematic issue of how someone fitting an innovators description might survive in the Bank was not dealt with.

Sustainable Competitive Advantage

The link often made in the literature between innovation and sustainable competitive advantage was not strongly reflected in the interviews. Only 25 % of interviews made some connection between innovation and this competitive outcome. The focus of members was more at the level of there might have to be some changes to enable the bank to thrive or to improve its competitiveness in the future but basically the Bank will continue to operate in much the same way. The perspective represented in the interviews could thus be described as short to medium-term with an emphasis towards being reactive to change rather than preparative of a whole different way of operations

In summary then, Panel members had a consensus around the challenges and difficulty but personal strategies were variations on the theme of keeping change local and avoiding attention, lacked sophistication in theorization and strategy focused on the human aspects of organization and as a consequence tended to be relatively short term and operational and not strongly environment focused.

Theorizing Innovation

The innovation literature is littered with hundreds of distinctions or categories which attempt to describe different forms of ideas or innovations. Some distinctions relate to the nature of ideas themselves, i.e. technology, process, business model innovation (Schumpeter, 1934), whilst others describe the dynamic through which the new idea is produced, i.e. their relationship to the organisation's strategy (Christensen & Raynor, 2003; Hendersen & Clark, 1990; Tushman & Anderson,1986) or the length of time it takes to commercialise them (Tolbert & Zucker, 1983).

Understanding the differences and building a picture of these different concepts into an innovation narrative was crucial to populating the linguistic space created by the notion of 'explore', if for no other reason than if we didn't the 'exploit organisation' would. The existing patterns of innovation within the organisation meant that the majority of people conceptualised innovations in a short-term way. Christensen & Raynor's (2003) notion of 'sustaining strategy' is relevant here. Sustaining strategy refers to innovations that support incremental improvements to the existing strategy of the organisation, as opposed to those that could disrupt the market in some way, creating new sources of growth. Many of the Bank managers took pride in being 'fast followers', i.e. react swiftly to the strategic changes made by competitors rather than autonomously drive a change in the market. And arguably this approach is well suited to the dynamics of the market in which The Bank operates and to the services industry generally, where innovations can be easily copied (Barras, 1990). From the perspective of resilience however, this view poses a number of obvious challenges, the most

difficult being how to engender a longer term view in a way that (again) didn't compete with the short-term but was seen to complement and inform it.

Baghai, Coley and White's (2000) 3 horizon framework became useful as it makes some very important distinctions about the nature of ideas at different stages of maturity. In short the 3 horizon framework distinguishes ideas as being either Horizon 1 (short-term, consistent with the current strategy of the organisation, mature markets), Horizon 2 (medium term, new growth businesses in growing market spaces, and Horizon 3 (long-term, options for the future).   One of the important implications of the horizon distinction is that different methodological, structural and cultural approaches are appropriate to ideas in the different strategic horizons. Baghai et al, hint at the characteristics of these methods in the later chapters of their book, however, only limited detail is provided.

One of the difficulties of operationalizing the framework relates to the range of different ways in which the authors conceptualised maturity. Sometimes the horizons refer to timelines, sometimes to geographies, sometimes profitability or size. This is acceptable when one is discussing a new growth business strategy built around a known product set or single idea, however, when attempting to look at idea maturity across a range of idea forms, some simple ideas, others more indicative of a strategy, a more consistent unit of analysis is required. After reflecting on the 3 Horizon model in the context of ideas emerging in Social Complexity, we began to rethink the Horizon model in terms of the degree of certainty held about an idea. This drew on earlier work where we argued that systems can be categorized into three broad categories: Simple, weakly emergent and strongly emergent. These correspond to systems that are:

1. inherently analytically reducible;

2. analytically reducible in principle but difficult to reduce in practice and/or where an advance in science/knowledge is needed for reduction to be possible because the results were 'unexpected' (Chalmers, 2006);

3. not reducible in principle.

The first category is applicable to both simple systems (those with few components) and complicated systems (those containing a large number of parts but which, due to their linear operations, are analytically reducible). These are predictable in principle as long as only the 'hard' aspects are considered (Checkland, 1999). Engineering problems and procedure based processes are of this type provided that the 'soft' or human aspects of the systems are ignored.

The second category includes systems likely to be encountered in the hard sciences where the properties of some component are not understood: i.e. their law like behaviour has not been established. Once the law of operation has been identified these systems become simple. The problem is therefore epistemic: the way of understanding the component has not been established but can potentially be established through scientific method.

Systems which are inherently irreducible in principle are commonly referred to as strongly emergent. These include both complex systems (where the dynamics result from the non-linear interaction of many components) and chaotic systems (where the dynamics are the product of non-linear interaction of a few components). Complex systems generate stable attractors which implies a predominance of integrating or complexity reducing mechanisms operating with relatively few parameters influencing the overall dynamics. These systems are somewhat predictable while operating on the attractor and it may be possible to identify the parameters which contribute most to this stability. Chaotic systems also demonstrate 'structure' or pattern in the form of the so called 'strange attractor' but as dynamics diverge exponentially predictability drops of at the same rate. These systems are not reducible in principle due to high levels of history dependence and sensitivity to initial conditions. These systems trace distinctive dynamics which can be explained in retrospect only – they cannot be effectively predicted. .

We argue that human social organizations belong to the emergent class (Goldspink, 2008), however, even this distinction is not sufficient to characterise social systems. While deeply embedded and stable cultural patterns are arguably attractors in the state space of human

organization, the generative mechanisms associated with human systems are different from those of other natural systems. We have introduced the concept of reflexive emergence to address the distinctive features of the mechanisms which operate in human systems, these are: a capacity to distinguish self from other and to notice the emergent pattern which the agent contributes to and in so noticing change that pattern. This capacity to observe emergent structure does not occur in other natural systems where emergent pattern is the product of local interaction only. In human systems these two reflexive capabilities occur primarily in and through linguistic interaction.

The approach has some similarities to that of Kurtz and Snowdon in that both we and they distinguish between problematic patterns on the basis of the level of knowledge we hold about them and the intrinsic level of knowability. Both approached therefore draw attention to both the ontological nature of the system (patterned dynamics resulting from an interplay of micro and macro levels) and the way in which epistemic 'knowing about' the system can change the system itself. Our approach makes the mechanisms of this more explicit. On the one hand we have the perspective of an observer who is not part of the system being observed. Such an observer may be able, through the application of suitable methods, to identify patterns associated with the system and the parameters which appear to explain the dynamics. What is distinguished will have a level of observer dependence and will depend on the goal (what is of concern – as in this case factors concerning a capacity to innovate), the level of analysis, and theoretical assumptions. Once the observer uses these to intervene, he or she becomes a part of the system. The resulting system will be different from that which previously prevailed but resilient systems may simply adjust limited structural aspects to accommodate the intervention where less resilient ones may change substantially but with a high propensity for unintended consequences due to the necessarily limited capacity to understanding associated with these sorts of systems. The second perspective is from an observer who is a part of the system. To the extent that this observer notices pattern and changes his/her behaviour, he she potentially contributes to generating a changed history of that system, again more or less depending on system resilience. In this we assume in line with Cillier's, that *"knowledge and the system in which it is constituted are in continual transformation"* (2000, p8). The challenge with changing these systems is therefore to improve our theoretical and methodological capacity to identify relevant patterns and to reduce the risk associated with resulting interventions: increasing the probability of desired change and reducing the probability of undesired change.

Each of the possible modes of operation, then represents a different form of dynamic, contextualised by the nature of the knowledge we have about that pattern. The simple domain contains problematic patterns but the various parameters of the problem are known to its stakeholders (or can be identified reliably) and the implications of changing those parameters are also known or knowable. The next complicated domain refers to problems where the parameters associated with them are knowable, and can be solved through the application of appropriate expertise. For example, a lack of compatibility between two databases requires specific expertise to solve the problem, but essentially the scope of the problem is known even if the detail is only knowable. The third and most significant domain in the context of this paper is that labelled emergent. Here the causal path traced can only be understood in retrospect. Often organisational and cultural change initiatives fall into this category as the complexity associated with the problems is so great that it is effectively impossible to understand the way in which the different parameters of the situation will interact before the event. Horizon 3 innovation typically also falls into this category

There is some loose correspondence between these modes of operation and the horizons. Horizon 1 in terms of simple (i.e. cause and effect is Known), Horizon 2 in terms of Complicated (cause and effect is Knowable) and Horizon 3 as Complex (cause and effect can be understood in retrospect). The value of bringing these frameworks together is that once again it provides a language within which the concepts can be discussed and new patterns of interaction triggered. The mapping is incomplete however, for example a cultural change activity (Complex) is often also Horizon 1 in that it may just mean operating in the same market with the same or similar products, but doing it in a more efficient or effective way.

To address these types of issues, the team began to explore the development of parallel idea maturation/commercialisation processes to account for the wide variety and forms of ideas that need to be explored but at the same time allow for some rigour in terms of the way in which development methodologies are applied. The reason for the parallel processes is that the degree of certainty an organisation has about an idea, changes its risk profile and consequently requires different positioning in terms of the patterns of exploration and exploitation in the organisation. Linder (2006) following a survey of 54 innovation-related executives from 46 organisations has argued that "organisations intent on sustainable, profitable growth, manage not one but three healthy innovation dynamics" (p2), each with its own characteristics and focus. She distinguishes these parallel processes in terms of the level of organisational friction (measured by political resistance) associated with them.

Where an idea is associated with a pattern of activity that is quite similar to that which already exists, it is obviously easier to introduce that idea. Where an idea proposes radical changes or a bifurcation of existing patterns i.e. the new pattern does not even resemble the old, the amount of political force required is significantly higher. From the point of view of resilience, to attempt to introduce a radical idea via a process designed for incremental change is extremely dangerous, both for the idea and the organisation – usually one does not survive. This situation can often be observed on a national level as well, where a reformist government is brought to power but effectively derails the country in the process of its reform or is forced to water down its reforms to such an extent that the ideal they were designed to achieve is never realised. The Bank, as an organisation, has attempted quite radical changes in the past, using 'exploit' processes with a similar result in terms of quite radical ideas being reduced to short-term incremental changes.

As a consequence, in February 2007, the team proposed a new structure to the Innovation Panel, based around a realignment of resources and structure to the type of innovation being undertaken, effectively creating three main pipelines of activity.

Routine Ideas – Incremental Innovation

Routine ideas tend not to present a challenge to the existing way of working, i.e. the existing patterns of exploitation, consequently there is no cultural change required to implement the idea and as such it should simply be a case of implementation. Often straight forward project management or continuous improvement methodologies are appropriate as "the cause and effect relationships are generally linear, empirical in nature and not open to dispute." (Kurtz and Snowden, 2003: 468). 'Routine innovation', is innovation that occurs within the exploit dimension of the overall organisational structure. It makes no sense to destabilise or introduce unwarranted volatility into these processes as this is how the organisation currently makes its money. This is what Linder (2006) would often associate with 'low friction', in that the organisation is comfortable with the associated level of change.

Complicated Ideas – Ambidextrous Innovation

Complicated ideas usually require some form of process design in order to implement them. Having said this, the parameters of what that design should entail are knowable. The implication is that to develop the idea, research needs to be conducted and expertise either brought into the team or organisation. In this context approaches like the Six Sigma design methodology DMADV are appropriate. Often DMADV is limited in its application to Routine problem resolution/idea development, but this need not necessarily be the case. Other systems dynamics based approaches can also be used here. Significantly, 'Complicated Innovation' exists at the juncture between explore and exploit, and as a consequence is in many cases the most difficult to develop. It usually requires a change to the existing patterns of interaction, yet ironically needs to be undertaken within those existing patterns.

Structurally, this form of innovation still operates as a virtual (on top of your day job) activity, and consequently competes with exploit activities for resources. The key implication of this is that 'Complicated' ideas are often very slow to be implemented unless there is a significant political impetus to do so. Idea owners have significant difficulties freeing themselves from exploit commitments to spend the time necessary to develop the idea. There is also limited

mental capacity in the sense that people working on the idea need to be able to switch between thinking about day to day matters to thinking about strategies for the future, and in the limited time available this is quite difficult.

Complex ideas- Radical Innovation

The third pipeline, we believe, can only be attempted from within a dedicated 'Explore Organisation'[5]. The central reason for this is that radical/complex ideas represent and require environments (with associated patterns of interaction) that are significantly different to the exploit environment required for day to day business. The methodologies required are fundamentally different, and from an 'exploit' perspective appear inefficient, in the sense that they are non-linear. The dynamics of innovation in the complex space require a far higher degree of trial and error.

To facilitate this, the team proposed to the Panel that a separate 'Acceleration team' be established, whose sole focus is to explore and trial the dynamics associated with Complex ideas that come into the innovation process. The team involves a small group of permanent Bank staff but also draws on a broader virtual team from both inside and outside of the organisation – depending upon where the required expertise exists.

For Complex ideas we have been exploring the use of soft and critical systems methodologies, in significantly amended form, to allow the holistic emergence of ideas. Unlike Routine and Complicated, the use of the methodologies is by definition non-linear and iterates between theorizing about the behaviour of ideas in given environments and trialling them to observe which patterns emerge. Kurtz and Snowden (2003) propose the use of what they call probes to achieve the same ends. Like Kurtz and Snowden (2003) we also support the use of narrative techniques as being one set of appropriate tools to gain an understanding the patterns that are emerging.

From a strategic resilience point of view, the Complex space (as we have interpreted it) is also more future focused and long-term in outlook. The use of future scenarios as a way of theorizing about plausible future emergent patterns, and as a way of creating new patterns has formed a central part of the toolkit being applied in the 'Explore Organisation'.

Conclusion

This paper has described, through a participant observation study, the development of an Innovation Capability within a large Australian financial institution. More specifically the thinking associated with the development of the capability has been made explicit in a sufficiently general way that it should have application in other organizations and other sectors. He chosen case was particularly challenging due to the effect of both external and internal environments which made innovation difficult. A linkage was advanced between a complex systems view of organization and resilience. This was used to provide an overarching meta-framework within which the development of tools and structures can take place. It was however extended to be applicable to organizations through the integration of an understanding of the fundamental characteristics of human agents as biological actors. This was supplied by the theory of autopoietic systems. We drew here on prior theoretical work in which we have provided both a theory of organization which integrates these perspectives and which has distinguished between non-reflexive and reflexive emergence. We noted that much of what is important in generating, maintaining and influencing the dynamics of organization, including both their capacity to innovate and their intrinsic resilience to both external and internal change happens in language. The establishment of an innovation capability therefore required introduction of structures and systems as well as new languages. These are illustrated with respect to the chosen case.

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[5] A caveat to this statement is that some organisations have developed, strong innovation cultures which provide the space necessary to explore complex ideas within their exploit structures, i.e. Google, 3M, yet these organisations also carry strong R&D functions, which Banks usually do not develop.

Post-script

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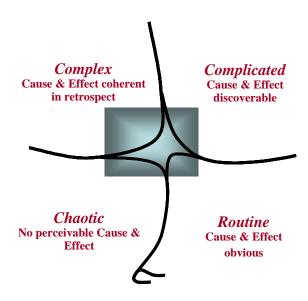
Figure 1. Kurtz and Snowden's (2003) Sense making framework

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