

Knowledge evaluation for creation capability in organization

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ABSTRACT: This research sets out a journey which culminates in the development of an analytical framework, the 'Assessment of organizational creativity' which is intended to assist organisations in evaluating their ability to support and develop creativity. This framework is derived from the common thread of the research, which is drawn from a range of research and consultancy projects, and the resulting published work, spanning an eight year period, centring on the role of knowledge and creativity in the strategy and performance of organisations. The central core of the research is the nine published papers upon which it is based but it also derives from the broader perspective of my published work in the form of both articles and books. The research further draws upon my own experience as a leader and manager in the context of university business schools and as a consultant, researcher and developer in the context of a range of international private and public sector organisations. The work is based upon a premise that theory should inform practice and that practice should inform theory. The 'Assessment of organizational creativity' framework is informed by both theory and practice and is intended to assist in management practice. The 'Assessment of organizational creativity' presented in this work should be regarded as the framework in its present form which is likely to develop further as my research progresses in the future.

Keywords: Knowledge evaluation, Capability, Organization, Management, Framework.

INTRODUCTION

This research is focused on and presents nine published papers, it is rooted in, and draws upon, a far wider body of my work in terms of both articles and books. In particular, some of the reflections upon the existing body of literature, and the conceptual thinking which shapes this research, were first published in two of the three books which I have co-authored. Although these books are not presented as part of the research they are widely referenced throughout the work.

It is important to stress that the research is not entirely retrospective and is, in fact, live in the sense that the 'Creativity Appraisal', presented as one of the major contributions of my work, is a tool which is still very much under development, even though it has been in use, in one form or another, for several years.

In addition to being a journey in terms of my critical thinking on strategy, the work presented in the research, also presents what has been an even more dramatic and tempestuous personal voyage of discovery in terms of epistemology and methodology. A dominant positivist paradigm, and its often heavy reliance on quantitative approaches, has been largely replaced by a view of the world which is less certain, more questioning, more reflective and, in some ways more confused. The only certainty is that there are no certainties! At the same time, it is important to stress my conviction that the major *raison d'être* for management research is to inform management thinking and practice. For me this connection is essential. Academic peer review is an essential component in evaluating the contribution of research but so are the views of practitioners themselves. In this context, while this research offers no prescriptions for managers, it does attempt to develop and present concepts, frameworks and tools which may be of assistance to them in strategy and strategising within their organisations.

The remainder of this section locates scope and objectives of the research in the context of the discipline of strategic management and research philosophy in broad terms before these areas are critically explored in detail in subsequent sections.

Strategic Management

Strategic management is still in the early stages of its development as an academic discipline. Although there is no single agreed definition of the term 'strategic management', and there is much disagreement about its scope, it can be broadly conceptualised as a set of theories and frameworks through which managers can envision and plan for the long term future of the organisation as a whole. Despite the lack of consensus on its definition, there is considerable agreement on the core activities involved in 'doing' strategy (McKiernan, 1997; Mintzberg, 1998a, Stonehouse, 2004). Strategic management, or strategising as it is sometimes called today, incorporates several interlinked activities including strategic thinking, strategic learning, strategic planning, and strategy implementation, review and adaptation.

For many researchers in the field, strategic management has the purpose of assisting managers in the quest to achieve sustainable competitive advantage for the organisation (Porter, 1980;1985). The quest for competitive advantage begins with the development of a long term vision or 'strategic intent' for the organisation (Prahalad and Hamel, 1990). This vision, and the strategy which aims to enact it, must be based upon strategic learning by the organisation about itself (in terms of resources, competences, activities, processes, systems, culture, structure etc.) and its environment (customers, markets, suppliers, competitors etc.) This strategic learning is intended to produce strategic knowledge (Nonaka, 1991) which enables the making of strategic decisions on the future direction of the organisation. Strategic planning engenders the setting of long objectives, and the development and implementation of plans designed to achieve them for the organisation. Such strategic plans must be reviewed and adapted in the light of changing circumstances.

Knowledge, Learning, Creativity and Strategy

The development of strategic management has seen, and will continue to see, many twists and turns. The description of strategic management in the preceding section represents a view of where the body of thinking behind strategy is today. This in itself is an oversimplification which will be explored in subsequent sections. Nevertheless, much of the recent thinking in strategy has centred around the need for continuous innovation and the context of a rapidly changing, complex and dynamic environment. In this state of flux it has been argued that knowledge, learning and creativity are the only means by which competitive advantage can be achieved and sustained (Nonaka, 1991; Nonaka et al., 2000; Stonehouse and Pemberton 1999). This research is built upon these lines of thinking and explores how the literature of strategy has arrived at this point and where it may go in the future.

Research Aim and Objectives

The overall aim of this research is:

To develop a conceptual framework which assists organisations in the evaluation of their learning and creative potentials

In order to achieve this aim the main objectives of the research are:

1. To investigate and critically evaluate the role of knowledge, learning and creativity in strategy and strategising
2. To identify and critically evaluate the factors influencing learning and knowledge creation within organisations
3. To situate the work of the author in the context of the literature of strategic management, organisational learning and knowledge creation
4. To explain and evaluate the research methodology and methods which underlie the individual articles which comprise the main body of the research

Research Methodology

The purpose of this section is to consider some of the methodological issues in my work and how they have been addressed. From a methodological perspective a PhD by publication is inevitably different from a more conventional PhD. In the case of a more conventional PhD many of the methodological issues will have surfaced early in the research and are addressed throughout the project, with only minor adjustments made at the end. The opposite is true in the case of a PhD by publication. The methodological issues may often only be considered superficially as each piece of research is undertaken. Many of the issues of philosophy, epistemology and ontology

are only explicitly addressed at the end of the process. For this reason I do not intend to undertake a detailed discussion of the various dimensions of research methodology, rather I wish to explain my own developmental journey in the course of researching and writing the articles which comprise this research. Essentially my approach is that of pragmatism in that I do not wish to be categorised or confined by any particular ontology or epistemology. I certainly have no conviction that objectivity is possible or essential, nor that a positivistic approach is superior to others. Neither can I be convinced that seeking a degree of objectivity is undesirable. I also have a belief that mixed methods (quantitative and qualitative) are a highly practical means of investigating many management subjects. As Hammersley (1996: 312) puts it:

“the notion of different research paradigms defies the ways in which research is carried out in practice.” Furthermore, Bernstein (2000) argues that as the boundaries are eroded between social science disciplines, there is a definite move away from using separate research paradigms towards a more unified approach. This has certainly been my experience as a researcher in the field of strategic management.

Of course, an essential component of my pragmatic approach is a wish to advance both management knowledge and practice. The advancement of management knowledge is important, and it is important that the research undertaken is rigorous (Huff, 2000; van Aken, 2005; Peirce, 1960). It is equally as important that the research is relevant to the practice of management. On this basis Pettigrew (2001) argues that management research should simultaneously pass the ‘double hurdle’ of rigour and relevance, in the sense that the research should inform the practice of managers. A number of writers have identified and discussed the gap between management research and its impact on practitioners (Gibbons, 1994; Tranfield and Starkey 1998; Hodgkinson, 2001; Van Aken, 2005). In the course of this debate these researchers made the important distinction between Mode 1 and Mode 2 knowledge production. Mode 1 knowledge production is characterised as being ‘purely academic and mono-disciplinary, while Mode 2 is multidisciplinary and aims at solving complex and relevant field problems’ (van Aken, 2005).

By implication Mode 2 research seeks to inform practice and performance in the field of management and this has been fundamental to all my work. Mode 2 research has the twin purpose of a rigorous approach to the conduct of the research and equally requires the production of ‘knowledge for action’ (Argyris, 1993). Van Aken (2005) suggests that much of the academic research in organisation and management is Mode 1 and is based upon the approach in the explanatory sciences (e.g. natural sciences and sociology) and the main purpose is to ‘describe, explain and predict’. Mode 2 research, on the other hand, is more inspired by the ‘design sciences’ like medicine and engineering, where the main purpose is to develop knowledge that will be used by professionals in the design of solutions to real problems. Stonehouse and Pemberton (2002) point out the immaturity of strategy as a discipline in that its tools and techniques are not widely employed by practitioners, particularly in smaller enterprises and even in larger enterprises usage is patchy.

The time period over which my research has been conducted and its broad scope suggests that a range of methods will have been employed. This is indeed the case but the methods used have been more influenced by a desire for rigour together with a belief that different methods are more appropriate for gathering different types of views, data, perspectives and information. Webb (1966) argues that researchers often use a variety of methods to triangulate their work and further confirm their ideas.

Quantitative methods have the advantage of making it possible to obtain data which gives a macro level view of a subject in a relatively short period of time combined with an ease of processing and analysing. On the other hand they are far less effective at a micro level in gaining individual views and the subtleties that lie behind them. Denzin and Lincoln make an important distinction:

“Both quantitative and qualitative researchers are concerned with the individual’s point of view. However, qualitative investigators think they can get closer to the actor’s perspective through detailed interviewing and observation. They argue that quantitative researchers are seldom able to capture their subjects’ perspectives because they have to rely on more remote, inferential empirical methods and materials.” (Denzin and Lincoln, 2000: 10).

Perhaps more importantly, ‘quantitative and qualitative data need to be treated as broadly complementary, though not necessarily as compatible...’ (Denzin, 1970). They provide different perspectives which may or may not be complementary but certainly make for better understanding.

Nature and Purpose of Strategic Management

The unifying thread of this research is strategic management. This section explores the nature, purpose and evolution of strategic management, together with a range of different approaches which can be adopted to it. It then examines the need for adopting a more holistic approach to the subject and the need to consider strategic situations from a range of different perspectives and through a range of theoretical lenses so as to gain a better understanding of the issues involved and the actions required. It then concludes by critically evaluating my contribution to the development of the subject and its concepts and tools.

All social organisations, whether business or otherwise, exist for a specific set of explicit and implicit purposes and related goals. For businesses the purposes and goals centre on providing goods or services to customers in a way which is profitable. The primary focus for business is on achieving profit through performance improvement which results in what might be termed 'competitive advantage' or 'superior performance'. At the same time there is increasing pressure on public sector and 'not for profit organisations', like the health service, education and charities, to provide high quality service at the same time as making efficient use of their resources. They strive to achieve competitive advantage or value for money services can be regarded as the domain of strategy and strategic management. An organisation's strategy can be regarded as the determination of an organisation's long terms objectives and goals and means (plans, policies and actions) through which it seeks to achieve them.

The interchangeable usage in the literature of strategy can cause considerable ambiguity and confusion. It is therefore necessary to identify and distinguish between some of the key terms in the literature, specifically, strategic management, strategic thinking and leadership, strategic learning and strategic planning (Stonehouse and Pemberton, 2002).

Strategic management is perhaps best regarded as a collection of theories, frameworks, tools and techniques, drawn from research and business practice, which are intended to assist managers in understanding the position and performance of their organisation as a basis for the development and implementation of strategies and plans designed to deliver sustained improvements in organisational performance. Such improvements depend upon *strategic thinking and leadership* which relate to the ability of an organisation's leaders to look creatively and strategically into the future, thus deriving the vision and 'strategic intent' which act as the basis of competitive advantage (Prahalad and Hamel, 1990). Such strategic thinking is based upon strategic learning, which is concerned with the processes by which leaders and organisations learn about themselves which, in turn, form the basis of the new knowledge and creativity upon which superior performance is based (Nonaka, 1991).

Strategic planning is the part of strategic management which attempts to formalize strategic thinking into objectives, strategies and operational plans which are designed to achieve organisational objectives. Strategic planning has been criticized by, among others Mintzberg (1993, 1994a, 1994b), as resulting in a highly prescriptive approach to strategy which often fails to deliver its intended outcomes. Stonehouse and Pemberton (2002) argue that this is not necessarily the case stating that: "while the uncertainty of the modern business environment means that detailed and prescriptive long term planning are of little value, some form of broad long term planning, related to strategic thinking and vision, is necessary if strategic intent is to be translated into action." (Stonehouse and Pemberton, 2002: 854). In other words, while a highly mechanistic approach to strategic planning is unlikely to deliver competitive advantage, a complete lack of planning is likely to prove even more disastrous. What is required is a flexible approach to planning which incorporates 'adaptive mechanisms', allowing for the adjustment of strategy as the dynamics of the business environment fluctuate.

Knowledge, Learning and Creativity

This section begins to focus on knowledge, learning and creativity in terms of their role and importance in contributing to the competitive advantage of organisations. The previous section set out some of the approaches which can be adopted to strategic management and explained my contribution to them and towards developing a more holistic view of making and doing strategy. Within this section the nature and potential of knowledge, learning and creativity are explored in relation to strategic management.

In the last decade or so, research in the field of strategy has shifted its attention to exploring the role of knowledge, learning and creativity in acquiring and sustaining competitive advantage (Senge, 1990a, 1990b; Nonaka, 1991; Argyris, 1992; Nonaka et al., 2000; Skyrme, 2000; Davenport and Prusak, 1998; Stonehouse and Pemberton, 2005; Stonehouse and Pemberton, 1999; Stonehouse, 2005). This work has focused on seeking to understand the nature and strategic importance of:

- knowledge
- its creation and management (incorporating organisational learning)
- the organisational factors which facilitate or inhibit its creation and management

The knowledge-based approach to strategic management is not divorced from nor generally in conflict with the other schools of thought discussed in Section 3. In fact, it is complementary to them, contributes to their development and draws upon their literature (Stonehouse et al., 2004). This section is concerned with developing understanding of knowledge and its creation, in the context of strategic management, while Section 5 examines the organisational dimension of the literature and my contribution to it.

The Context of Learning and Creativity in Organisations

While the previous sections have considered the nature of competitive advantage, the means by which organisations seek to achieve it through their strategies, the role of knowledge, learning and creativity in its achievement, this section investigates the importance of the organisational context (Stonehouse and Pemberton, 1999) or social architecture (Senge, 1990a, 1990b) in providing an environment in which new knowledge can be created more readily. The section goes on to consider the ways in which the various dimensions of social architecture, namely leadership; culture; structure and infrastructure, influence the efficiency and effectiveness of organisational learning and creativity.

It is the nature of learning and creativity which places organisational context and social architecture at the centre of the processes involved. In the previous section it was established that learning and creativity are essentially cognitive, conscious, and experiential. Learning and creativity can be considered from a number of perspectives including sociological, behavioural, and technological. In the 1990s, probably largely because of the rapid pace of innovation in information and communications technologies, there was something of a focus on the contribution of technology to learning and creativity. This approach has largely been replaced by a socio-technological one which emphasizes the contributions of and interactions between technology and the social dimensions of organisation like leadership, culture, structures and systems. In the previous section the role of individual and organisational learning in the creative processes were considered and highlighted. Clearly, the social and technological dimensions of organisations can and do play an important role in either facilitating or hindering the activities and processes through which learning and creativity take place.

Individual learning, organisational learning and creativity are interdependent processes which take place within what may be regarded as the context, setting or ecosystem of the organisation. Investigations have looked into the importance of factors like organisational climate (Amabile & Gryskiewicz, 1989), group interactions (Scott and Bruce, 1994) and organisational structure (Arad, Hanson, and Schnieder, 1997) in creativity. Nonaka, (2000) use the Japanese word 'Ba' to describe the organisational context for learning and creativity while Senge (1990) terms it 'social architecture'. Whichever term is used this organisational setting within which knowledge is developed through learning and creativity consists of factors like leadership, culture, structure, infrastructure and systems.

Since social architecture will impact upon the efficiency and effectiveness with which leaning and creativity will take place it is necessary to consider each of the facets of organisational context and their potential impacts on knowledge creation. To put this another way, organisations will seek to 'manage' knowledge and its creation in a similar way to that in which they seek to manage other resources and assets like people and finance. In fact, many organisations have gone to great lengths to 'learn about learning' in order to develop cultures, structures, systems and behaviours which support learning and knowledge creation. There has been an increased focus on different aspects of learning and the potential organisational impacts upon them including the concepts of liminal learning (Turner, 1984) deuterolearning, second order learning/learning how to learn (Bateson, 1972), triple loop learning (Swieringa and Wierdsma, 1992) or learning about learning itself (Bateson, 1972; Argyris and Schon, 1996; Pemberton and Stonehouse.

2000). As Minocha and Stonehouse (2006) explain it:

"These concentrate on the ways in which organisations can improve the rate at which they learn by developing an effective learning culture (Aksu and Bahattin, 2005; Hampden-Turner and Trompenaars, 2006; Bell and Bell, 2005), leadership (Gigerenzer, 2006), systems (Karkkainen and Hallikas, 2006; Perrott, 2004) and structures (Hines et al., 2004). In other words these works either emphasise the importance of the learning space or 'prescribe' fluidity in the social architecture (Bogenreider, 2002) of the organisation." (Minocha and Stonehouse, 2006: 1348)

At this stage it is probably useful to consider the major aspects of social architecture in relation their potential impacts on learning and creativity.

The Creativity Appraisal

The Creativity Appraisal began life in 1999 in its first iteration as the Organisational Learning Audit. My research and studies of the literature had led me to form an interest in understanding the contribution of an organisation's social architecture (Senge, 1990) or learning context (Stonehouse and Pemberton, 1999) to its learning capabilities. As time progressed I began to recognise the need to go beyond learning, which tends to focus on existing knowledge, into the realms of creativity with a focus on knowledge creation and application in particular.

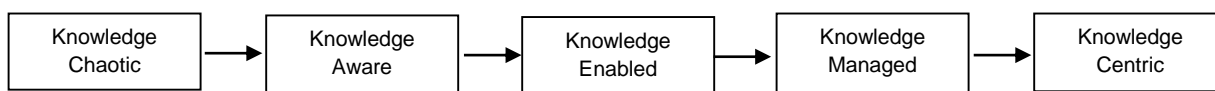
It is important to note that my research did not focus on individual learning and creativity, and the literature of psychology that explores and explains these areas is largely beyond the scope of this research. In the same way this research does not cover the subject of knowledge mapping. While this is an essential part of organisational learning, knowledge management and creativity approaches to knowledge mapping are well researched and well documented (Pemberton and Stonehouse, 2004; Stonehouse and Pemberton, 2005). Instead my focus has been on building an

understanding of social architecture (organisational learning context) and its impact on learning and creative capability within organisations so as to provide a framework through which leaders and managers can develop a deeper understanding of their organisation's creative capability and potential for development.

The main purpose of this research, besides providing an overview of my research and its contribution to strategic management, organisational learning and creativity, is the development of the Creativity Appraisal. The Creativity Appraisal provides a lens through which to examine the social architecture, or learning context of an organisation, so as to provide a deeper understanding of the organisation's creative capability and potential.

The Creativity Appraisal has a number of antecedents in the work of the European Foundation for Quality Management (EFQM) on benchmarking organisational excellence (Yarrow, 1999; Pemberton, Stonehouse and Yarrow, 2001), the KPMG knowledge-centricity framework (KPMG, 1997) and the work of Skyrme (1999) as well as my own research in the area (Stonehouse and Pemberton, 1999; Pemberton and Stonehouse, 2000; Stonehouse, 2001; Stonehouse and Pemberton, 2005; Minocha and Stonehouse, 2006), much of which is documented in this research. The EFQM developed a tool known as Probe (Yarrow, 1999) which was designed to allow organisations to benchmark themselves and their performance against standards regarded as being 'world class'. The benchmarking process produces a profile of the organisation against world class standards which allows management to identify areas of excellence and those areas where there is potential for improvement. This widely employed framework and technique gave an indication of how a similar frame might be developed to monitor the capability of an organisation in terms of the capacity of its social architecture to provide an environment supportive of learning, creativity and innovation.

The consulting group, KPMG (1997), identified five phases of development that companies undergo in seeking to develop knowledge management:



This gave an indication of the journey of development upon which organisations embark in order to create and manage knowledge. Again this was an important precursor of my work, giving an indication of the direction of travel towards a social architecture capable of promoting and sustaining creativity. It tended to focus, however, on the mapping of knowledge rather than providing an in-depth methodology for charting an organisation's capability to support creativity.

In 1999 I developed the first forerunner of the Creativity Appraisal in the shape of the organisational learning audit (Appendix I) This was first utilised in a piece of consultancy work for the Chinese company Yutong (the largest coach manufacturer in Asia) in 1999. The concept was then taken by Minocha in 2002 as the basis of her study of organisational learning in the Bollywood film industry (Minocha, 2002, Minocha and Stonehouse, 2006). The audit tool was then used by one of my masters dissertation students Roman Ukhov (2002) to perform a learning audit of the Russian steel giant Severstal as a precursor to setting up the company's corporate university. The next iteration in the development of the creativity audit came in 2004-2006 when a variant was used by Will Kolosz, one of my PhD students to evaluate organisational learning among SMEs in the North East of England (Kolosz, 2006). Currently one of my PhD students, Jan Auernhammer, is developing a specialist version of the tool to be used in Daimler-Chrysler to evaluate the organisation's capacity for creativity. This research has been part-funded and fully supported by the company. The work is due for completion in 2009-10.

Conceptual Basis of the Creativity Appraisal

The literature of organisational learning and creativity establishes that social architecture has an important impact on the capabilities of an organisation to enable creativity and to innovate as the basis of building and sustaining competitive advantage (Senge, 1990; Stonehouse and Pemberton, 1999; Skyrme, 1999; Nonaka, 1991; Stonehouse, Pemberton and Barber, 2001; Pemberton, Stonehouse and Francis, 2002; Pemberton and Stonehouse, 2002; Stonehouse and Pemberton, 2005; Stonehouse, 2005). The same literature also identifies various dimensions of social architecture and their potential impacts upon learning and creativity within an organisation. These are summarised in table 1 below.

Table1. Dimensions of Social Architecture and Creativity

Dimensions of Social Architecture / Organisational Context	Potential for Facilitating Creativity
Leadership	Builds shared vision Encourages innovation Empowers people Coaches, mentors and develops people Encourages sharing of ideas Adopts a consultative approach Shows a high degree of stewardship for both people and the organisation Develops a social architecture conducive to learning and creativity
Culture	Places value on: Knowledge Creativity and learning Sharing of ideas Trust Constructive criticism and questioning Devolved decision making Allowing mistakes Experimentation Risk taking
Structure	Structure can facilitate teamworking and sharing through: Matrix / network structures Flat structures Grouping of experts Project teams
Infrastructure	Extensive formal and informal communication networks High levels of communication Well developed ICT infrastructure Use of knowledge sharing software Multi media storage of knowledge

Of course, where an organisation's social architecture does not display or support all or some of the characteristics set out above there is potential for improving organisational performance through organisational development which moves its social architecture towards supporting characteristics which are likely to be supportive of learning and creativity.

These dimensions of social architecture have been used as the basis of design for the process and interventions known as the Creativity Appraisal.

The process employs a questionnaire devised by the authors. Several other authors have developed similar mechanisms, including the knowledge management diagnostic (Bukowitz and Williams, 1999) and the knowledge management toolkit (Skyrme, 1999). Our appraisal questionnaire, in its 2005 format (Stonehouse and Pemberton, 2005), allowed the organisation to self assess in terms of:

- Leadership and vision
- Culture & structure
- Processes
- Explicit knowledge
- Tacit knowledge
- Knowledge monitoring, gathering, storage and dissemination
- Markets and customers
- Knowledge measurement
- Human infrastructure
- Technology infrastructure

Within each section, a number of sub-themes are examined, where respondents within an organisation indicate the strength of agreement with a number of statements using a five-point Likert scale. More detailed discussion is provided in Pemberton, (2002).

The Creativity Appraisal in Action

The successor to the Organisational Learning Audit was the Knowledge Creation Appraisal (Stonehouse and Pemberton, 2005) which led to the final development of the Creativity Appraisal, a tool for assessing the ability of the organisation to create new knowledge.

As explained in the previous section my objective was to take the concepts of creativity developed through research and explained in the literature and to develop a practical framework which would allow practicing managers to evaluate the extent to which their organisation had developed a social architecture which supported learning and creativity. In the first instance we developed a tool which provided indicators of the extent to which an organisation had progressed on the knowledge journey from being knowledge chaotic to being knowledge centric (KPMG, 1997; Stonehouse and Pemberton, 2005). Our research allowed us to develop two such tools the Creativity Audit (formerly the Knowledge Creation Audit) and Knowledge-Centricity Matrix (Stonehouse and Pemberton, 2005; Pemberton, Stonehouse and Francis, 2002).

As we stated:

“These tools are distinct but interrelated. The former serves the purpose of gathering data on the ability of the organisation to create and manage knowledge in terms of its social architecture (leadership, culture, structure and infrastructure) while the latter is a means of representing the status of the organisation in relation to knowledge-centricity. It is important to recognise that the development of these analytical frameworks is an ongoing and continuous process.” (Stonehouse and Pemberton, 2005: 254)

The Creativity Appraisal is not simply a set of documents, although documents and questionnaires are integral to its effectiveness. Rather it is a process which serves a number of important purposes:

1. It is designed to raise awareness of the importance of creativity, particularly knowledge creation and its application in the organisation. It introduces managers and employees to the concepts and processes of creativity and strategic knowledge management.
2. It is a frame through which an organisation can evaluate its ability to support and nurture creativity.
3. It is a change agent for supporting organisational development which better facilitates creativity and innovation.

The knowledge creation audit is a process which consists of the six stages:

1. An introduction for managers and employees to the concepts of knowledge-based competitive advantage, knowledge creation and management.
2. Completion of the knowledge creation appraisal questionnaires by selected individuals within the organisation.
3. Completion of knowledge creation appraisal questionnaires by groups within the organisation.
4. Analysis of individual and group questionnaires by the appraisal team.
5. Discussion of appraisal findings with key members of the organisation.
6. Identification of individual and organisational development requirements necessary to progress the organisation towards a social architecture which effectively supports creativity and innovation (Derived from Stonehouse and Pemberton, 2005).

The initial step in the appraisal is a briefing for all those designated by the organisation to take part in the appraisal to acquaint them with the concepts of strategic management, learning and creativity, and knowledge creation and innovation. At this stage no reference is made to the nature or importance of social architecture or organisational context to the processes of learning and creativity. A questionnaire (Appendix I) is then administered to managers and employees designated by the organisation as participants in the process. The composition of the participant group is determined between the consultant and senior management and is representative of a range of levels in the organisation and covers all its functional areas. This enables the questionnaire to obtain a broad range of views and highlights similarities and differences of opinion between individuals and groups within the organisation.

The purpose of this questionnaire is to allow employees to express their views on the organisation's social architecture in terms of its leadership, culture, structure and social architecture. The questionnaire employs a series of statements on various aspects of these dimensions of social architecture and participants are asked to indicate the degree of their agreement with each statement on a Likert scale of 1 to 5, where 1 indicates no agreement and 5 indicates strong agreement. A series of open interviews are also conducted with senior managers to obtain their views on the organisation, its social architecture and its creative capability. These provide important data for discussion in the group development sessions described below. Furthermore, it is desirable that the consultants are able to spend some time observing work and behaviour within the organisation to provide further evidence to validate the views expressed by managers in their interviews and respondents to the questionnaire.

These results are then processed by the consultants but are not shared with the participants at this stage so as to allow a series of group discussions to take place without any prejudice which might arise if the results were known. The discussion groups are deliberately composed in two different formats:

- 1.Groups which are selected to represent a range of levels of managers and employees from the organisation's hierarchy
- 2.Groups which are selected from single levels within the hierarchy but which represent a range of areas of activity across the organisation

These groups are not selected for any particularly scientific reason but rather because they tend to produce interesting and conflicting results. Each of these groups uses a blank appraisal questionnaire as the basis of their discussions and is directed to attempt to arrive at answers which represent a consensus among the group. Our experience is that a diverse range of views are expressed within the discussions and between the groups.

At this stage, before inter-group discussion takes place facilitated by the consultants, the overall results of the individual questionnaires are shared with the participants. An inter-group discussion is then held between all the groups and the answers produced by the groups are then compared with each other and with the overall results of the individually completed questionnaires. This stage allows similarities and differences between the various results to be highlighted and, more importantly, the possible reasons for the differences to be discussed and analysed. The outcome of these discussions and the questionnaires is twofold:

- 1.It gives all participants clearer views of the organisation's social architecture, although it is often the case that participants identify and recognise different social architectures rather than a single architecture. This is still important as it highlights and surfaces similarities and differences of opinion which must be recognised by all.
- 2.It generates a profile of the organisation's social architecture in relation to the likely support that it provides for learning, creativity and innovation. This draws attention to areas of excellence but also to those areas where organisational development would be likely to foster improvements in creativity and innovation.

A summary of the results for the organisation are finally represented on a Creativity Grid (Stonehouse and Pemberton, 2005; Pemberton and Stonehouse; 2002). These results provide a snapshot of the organisation which can be used as the basis of an organisational development intervention designed to bring about changes in various dimensions of the organisation's social architecture so as to improve the levels of support that it provides for learning and creativity. It is beyond the scope of this paper to explore the organisational development interventions which might be employed so as to achieve change. Progress by the organisation towards its desired goals of change in its social architecture can be monitored by repeating some or all parts of the audit process at points in the future.

Critical Reflections on the Creativity Appraisal

The Creativity Appraisal has proved a useful tool in assessing certain dimensions of learning and creative capabilities within organisations. In this respect, its continuing evolution over a period of years has been instrumental in improving its effectiveness. It seems to be of greatest value in raising awareness of organisational facilitators of, and barriers to organisational learning and creativity in terms of the social architecture embedded within a particular organisation. Its use, however, must be placed in the context of a number of health warnings. First, it provides only a limited snapshot of an organisation's social architecture at a particular point in time. Of course, social architecture changes over time, and indeed one of the reasons for conducting the audit is as a means of precipitating change. The appraisal must therefore be repeated over time to identify changes in social architecture that are occurring. It also provides a macro perspective of the social architecture and does not examine its many dimensions at a micro level, in detail.

Second, the use of the appraisal does not in anyway guarantee organisational development. It is useful in raising awareness and in causing discussion and debate around the organisation's learning and creative capabilities but further interventions are required if organisational development is to be achieved. Third, the audit does not address issues around individual creativity, although some of my recent work has centred on beginning to examine the role that individual leaders and managers can play in empowering others to be creative. It is my intention to develop the theme of leading and managing for creativity further in my future research. Despite these evident limitations of my work to date, it can be argued that it represents a valuable contribution to research, knowledge and practice in the field and is possibly a reasonable exemplar of the potential of mode 2 research.

CONCLUSION

This section revisits my research aims and objectives, provides a critically reflective summary of the contribution of my work to the theory and practice of strategic management, particularly the area of creativity. It also explores the limitations of the research and contributions, before identifying my future research directions.

In Section 1, I identified the overall aim of the research:

To develop a conceptual framework which assists organisations in the evaluation of their learning and creative potentials In support of this aim, the main objectives of the research were stated as:

1. To investigate and critically evaluate the role of knowledge, learning and creativity in strategy and strategising.
2. To identify and critically evaluate the factors influencing learning and knowledge creation within organisations.
3. To situate the work of the author in the context of the literature of strategic management, organisational learning and knowledge creation.
4. To explain and evaluate the research methodology and methods which underlie the individual articles which comprise the main body of the research.

In essence Sections 3, 4 and 5 were concerned with setting out and evaluating my contribution, through my publications and the research upon which they are based, to the literatures of strategic management, knowledge management, organisational learning and creativity. From this critical evaluation of the literature and my contribution to it, I then went on in Section 6 to explain the evolution of the Creativity Appraisal and its applications, concluding by examining its limitations. The following sections of this section summarise my contributions to theory and practice in relation to my research objectives. The section then concludes by further exploring some of the methodological issues in the research and the need for further research in the area.

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