TITLE

MAINTAINING DISTINCTIVE CAPACITY AFTER RESTRUCTURE: SOME INTERACTIONS BETWEEN ORGANISATIONAL FORM AND ORGANISATIONAL KNOWLEDGE

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Author: Dr Ronald C Beckett
Affiliation, Professorial Fellow, University of Wollongong, Australia
Affiliation address: C/O The Reinvention Network, Level 2, 215 - 219 George St, Liverpool, PO Box 167, Liverpool BC, 1871, NSW
Telephone: 61-2-9600 5255
Facsimile: 61-2-9601 2800
Email: rcb@reinvent.net.au
MAINTAINING DISTINCTIVE CAPACITY AFTER RESTRUCTURE: SOME INTERACTIONS BETWEEN ORGANISATIONAL FORM AND ORGANISATIONAL KNOWLEDGE

Ronald C. Beckett

Abstract

Many researchers are looking at new forms of organisation that offer strategic advantage in a global, rapidly changing business environment, and some of these ideas are discussed. But, whilst changes in technology make new ways of working possible, it is still people, with their unique skills and knowledge, that must work co-operatively to secure advantages offered by new organisational forms. The new forms may have benefits but they also have potential vulnerabilities. And they must facilitate, not inhibit, the work of the people in them. As organisations restructure in response to changes in their operating environment and move away from arrangements that may have served them well for decades, it has been observed that there is a danger of some positive attributes being lost.

So, in moving from one organisational form to another, a range of matters to do with both the old and the new should be considered to maintain the distinctive features of a particular organisation that support its competitiveness. Some case study material from two independent Divisions of an Australian Aerospace Company observed over a number of years is presented to illustrate this. In this paper, a perspective based on knowledge transfer and knowledge management considerations is presented, discussing the relative merits of functional hierarchy, network and team forms of organisation. The purpose is to enunciate some organisational design considerations that may help maintain distinctive capacity in a knowledge economy environment.
Introduction

The initial stimulation for this paper was the author’s long term observation of a 70 year old Business Enterprise that has possibly seen more change in its underlying organisation structure in the past 10 years than in the previous 60. There have been three ownership changes. The company has changed its strategic positioning from supporting a dominant position in a specialist regional market, to supporting a niche position in a global market. The company has been re-engineered, downsized and delayered in a variety of ways. In the late 1990’s the Company sought to obtain more leverage from knowledge it could access both internally and externally, leading to extended networking. Each change has bought its own good news and bad news.

It is expected the rate of change will continue so a variety of ideas on “better” forms of organisation has been considered. The final stimulation for this paper was the promotion of “agile organisations” in the “knowledge economy” – how do these concepts link together, and how do they relate to some generic forms of organisation. Other work by the author (Beckett 2003b) has described coherent business systems as comprised of a number of interlinked subsystems: a physical subsystem of activities, an information subsystem that supports the physical subsystem and decision-making, a decision subsystem that supports operation of the physical subsystem, and a knowledge subsystem that maintains physical, information and decision system domain knowledge plus architectural knowledge that informs the linkage between subsystems plus the linkage with other business systems (eg finance and marketing). Case studies illustrate how distinctive enterprise competencies and knowledge might be lost as structural change takes place. Finally, some particular knowledge acquisition and dissemination strengths are observed for three generic organisational forms: function-based, team-based and network-based organisation, and these observations are used to support an organisational design approach appropriate to the knowledge economy.

The Search for “Better” Forms of Organisation

It is postulated that an organisation’s imperative and strategies for competing, particularly in a global market, can influence the size and attributes of the organisational elements of that organisation. There are a variety of perspectives on this issue. Concepts of global networks of collaborating businesses are popular (Lipnack & Stamps, 1994, Roberts,1997, Owen, 1996,
O’Neill and Sackett, 1994). A strategy of focussing on intellectual capital and core competencies, and outsourcing everything else, logically leading to a network of niche service operations has been put (Quinn, 1993, O’Neill and Sackett, 1994, Ruthven, 1997). Focusing on customer service as the engine for growth, whilst retaining the business perspective of a shareholder, requires great organisational flexibility to maintain balance (Kock and Golden, 1995). Different kinds of formal or informal “rules” abound, and the creation and management of knowledge is seen to be an important core competency (Dunphy and Stace, 1994, Nonaka and Takuechi, 1995). Sustaining established businesses and fostering longer term “start up” ventures leads to the need for different leadership and organisational attributes in different parts of the business and these may change with time as the business evolves (Baghai, Coley and White, 1996, O’Neill and Sackett, 1994, McGann, 1997). In this case, how are the parts of the business linked and integrated?

There is an assumption that an answer lies in selecting an appropriate organisational form. Some researchers have looked outside the Business world for ideas on this matter.

Belbin (1996) is a champion of team based organisation. In contemplating a perceived trend towards small, responsive, enterprise elements, Belbin observed that large complex organisations in nature, such as a hive of bees, or a nest of ants were efficient. So why must “small is beautiful” prevail? He perceived patterns in hierarchies of teams being practised on a very large scale in these natural models. This suggests that not only self managed teams form the basis of work organisation but that the whole business should operate as a hierarchy of teams. Strategic teams concerned with longer term and global enterprise matters would set general direction. Cross-functional teams would co-ordinate specific projects and change programs across the organisation. His observations also suggested that the mix of team member attributes might be different for each kind of team.

Tuck and Earle (1996), a venture capitalist and an anthropologist, looked at the dynamics within different businesses and parts of businesses and compared them with tribal culture and political behaviour. They observed three primitive organisational elements that have counterparts in modern companies: the working group, the camp and the hierarchy, and agreed every company is a “politically organised” community. They saw aspects of scale at work. Small multi-skilled teams temporarily formed for a specific purpose (e.g. to hunt, to lay a section of railroad track) where the leadership role changes depending on the task at hand. Camps of about 30 people where, whilst there may be some job specialisation, most camp members have multiple skills and can participate in a range of working groups. The camp does not admit to having a leader but there is usually
someone who facilitates decision-making. The hierarchy encompasses several camp sized groups that form a tribe and several tribes may form a nation. There are clearly defined leaders and many strata of authority. These hierarchies evolved as a means of providing mechanisms for relations between tribes, conducting religious observances, and to allow for occupational specialization. Whilst there are clear lines of authority, there are no inherent means of reaching consensus.

Lipnack and Stamps (1994) observed that different forms of organisation have been prevalent at different times in history: small groups during the Nomadic age, hierarchies during the Agricultural age, bureaucracies during the Industrial age and networks during the Information age. It is noted that each form of organisation has its own benefits and elements of all of them may be expected to co-exist in a modern organisation, according to Lipnack and Stamps provided they are tied together by networks. Some perceived attributes of each organisation form are shown in the table below.

<table>
<thead>
<tr>
<th>Form</th>
<th>Application</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Networks</td>
<td>Mutual aid, professional associations, alliances, distributed sites</td>
<td>In networks, people link as they cross internal functions, geographic boundaries and even corporate lines with remarkable speed. The people in the network come from the bureaucracy and the hierarchy. Their new relationships to one another creates the networks</td>
</tr>
<tr>
<td>Bureaucracies</td>
<td>Codes, inspection, accounting, payroll, maintenance</td>
<td>Although most people complain bitterly about them, bureaucracies, when appropriate and enabling, can be elegantly functional, high-performance entities. They standardise contractual agreements and develop common methods by which work gets done and paid for.</td>
</tr>
<tr>
<td>Hierarchies</td>
<td>Fire fighting, owner-executive decisions, vision, goals, strategy</td>
<td>Legitimised by owners, hierarchies provide executive functions. They set goals, maintain authority and cope with crises, while the senior employees maintain the bureaucracy.</td>
</tr>
<tr>
<td>Small Groups</td>
<td>Education, cross-functional teams, special projects, work groups</td>
<td>Traditional face-to-face small groups continue to be the basic working unit today. At the same time, information enabled virtual teams cross functions, deliver results to customers and undertake special projects, while the 100 year old hierarchy continues to set strategy.</td>
</tr>
</tbody>
</table>

Table 1: A Characterisation of Some Organisational Forms (from Lipnack and Stamps, 1994)

Jaques (1989) presents an organisation framework he calls the “requisite organisation”. He argues that firstly, all business organisations need certain generic kinds of functions for successful operations (eg financial management, client relations), secondly that managers have specific kinds
of accountability/authority and task assignment/role relationships – some directly to superiors and subordinates and some in support of other managers, and finally that the extent of hierarchy is a function of organisation size. Jaques also presents the idea that management time horizons are longer higher up the hierarchy, implying that time horizon might also be related to size.

Based on personal experience in a variety of Chief Executive positions, Fairtlough (1994) develops the idea of the creative compartment; a group (or clan) of several hundred people who work together in an open way so that the effectiveness of communication gives it great capability and adaptability. It is suggested that groups of this size can assemble a rich blend of skills and knowledge, giving them the potential to produce extra-ordinary results. It is noted that compartments may associate in “families” for a variety of reasons:

- for co-ordinated approaches in the market place
- for sharing business processes that yield economic benefits
- to establish a “power bloc”, or a “critical mass” to influence political or market opportunities
- to support world-wide associations around new technologies and research collaborations
- to cluster around a powerful resource provider (like a Bank or a Trading company).

We see this reflected in the Divisionalisation of companies, and for a period of time, the case study companies were organised along these lines as the then owners shared the views of Fairtlough.

Hammer and Stanton (1999) promote the notion of “process organisations” that span and include functional groups within an organisation to align with market needs. Here the business process is defined to meet specific customer requirements using standardised practices that present a common face to the customer and reduce overhead costs.

O’Neill and Sacket (1994) consider the concept of an extended manufacturing enterprise that not only networks individual operations together, but seeks specific long-term benefits. These are:

- compression of concept-to-customer lead time
- a just-in-time supply chain
- logistic support throughout the product/service life.

Because the participants are both independent and interdependent at the same time, it is noted that power via conventional hierarchy is seriously weakened by the flat, geographically distributed and
transient nature of the Extended Enterprise.

The drive for flat, responsive structures and new systems of operation through business process re-engineering is not without its critics. Hilmer and Donaldson (1996) observe that flat structures are not universally appropriate, e.g. in R&D, where senior managers may also have a key technical role in addition to management responsibilities. If taken to excess, they can result in bottlenecks and poorly balanced decisions due to lack of appropriate resources to facilitate responsiveness. A. Kovac-Kakabadse, N. Kovac-Kakabadse and Kouzmin (1997) have observed that downsizing and delayering can produce the “survivor syndrome” - low morale, lack of trust and a decline in commitment to the organisation. However, achieving commitment in a “lean” organisation means a more critical role for social structure, trust and personal engagement - just the opposite of what is observed.

Many authors forecast that competence in creating and managing knowledge will be a significant source of competitive advantage in the 21st century. Nonaka and Takeuchi (1995), from study of Japanese and Western practices, express the view that the very layer of middle management that re-engineering can delete is essential for knowledge transfer. They suggest a 3-layer overlay of structure and systems. Project teams operate in a network style in one layer. Hierarchical business systems operate in another layer to give strategic direction. A third layer contains a knowledge base that is accessed by individual organisation members. In their model, middle managers bridge the gap between the visionary ideas of the top and the chaotic reality of the front line, mediating between “what should be” and “what is”. Yet in some restructuring initiatives it is middle managers who are retrenched.

**Agile Organisations and the Knowledge Economy**

Bryan, Fraser, Oppenheim and Rall (1999) see that successful enterprises in the 21st century will own and leverage superior intangible assets such as talent, knowledge, brands, relationships and reputation, and that globalisation means pace and timing – knowing what to do and when to do it will be all important. They see cooperative specialisation as a key strategy – “Twenty years from now, some $50 trillion of globally integrated economic activity will permit an extraordinary degree of specialisation. An economy of this size could easily be disaggregated into 5000 global business arenas, each representing $10 billion of production.
Or perhaps 50,000 global micro-business arenas, each of which would represent $1 billion of production. Or, more likely still, 5,000,000 tightly defined global nanostructures representing $10 million of production each” (p208). Find a global niche and dominate it fast is the message. This implies a blending of two forms of structure – strong specialisation and networking capabilities.

It is suggested here that agile enterprises are flexible in form and capable of rapid change whilst preserving functionality. The author observed an example at a recent conference on innovation, CINet (2002) where a Vice-President from the Nokia Company explained that by adopting the same business systems in all parts of the world, the Company had been able to change its organisation structure, with its supporting computer systems being reconfigured over a weekend. The new organisation was functionally the same as the old one, but it had been reconfigured to serve markets better. Here the change in market engagement was supported by stability in some aspects of the organisation.

A capacity to act is enhanced by competencies in knowledge acquisition, knowledge sharing and knowledge application. Both tacit knowledge transfer through team-based organisation and explicit knowledge transfer though systems are needed (Nonaka and Takeuchi, 1995). Sveiby (1997) describes knowledge assets as “The new organisational wealth”. He ascribes the extent by which the market value of a firm exceeds the book value of its tangible assets to intangible assets such as people (sustaining core competencies) and knowledge (domain, cross-functional bridging and organisation architectural types). But how is this knowledge base maintained if organisations continuously change, as access to it is dependent to some extent on personal linkages.

**Some Observations on Rapid Structural Change**

The notion of agility implies some sort of repeated rapid change. However, we have seen comment about companies who have downsized and delayered achieving short term results, but with doubtful abilities to survive in the long run (O’Neill and Sackett, 1994, Kovac-kakabadse et al, 1997).
Over a number of decades, some businesses have been observed to decentralize, then recentralize a number of times over. Why? Are managers just following the latest fad or is there more to it? Are there underlying problems in going from one organisational form to another, or has the change process itself been ineffective? Certainly, there is evidence that the success rate with change programs is not high (Nutt, 1992).

Dunphy and Stace (1) have noted apparent paradoxes between seemingly successful but opposing approaches to implementing strategic change:

- Strategic intent and adaptation vs rational, planned strategy development
- Cultural change vs structural change
- Continuous improvement vs radical transformation
- Empowerment vs leadership and command.

They have also noted different wealth creating traditions in different parts of the world. In Western Europe, balancing multiple stakeholder concerns requires skills to manage in a complex environment. In the USA and other Western economies there is a market force, short term profit focus. In Japan/Asia there is a longer-term view of developing international competitiveness via adding value/customizing products, and via domestic collaboration. They express the view it is now necessary to draw on all of these traditions and approaches to change to develop new and dynamic wealth creation models consistent with the needs of particular situations. The implied interactions suggest a number of factors need to be considered in moving to a new organisational structure:

- **Just looking at structural architecture in isolation is inappropriate.**
- **Wealth creation is becoming more closely linked to knowledge access and utilisation**

So, accepting that change programs of any sort have their own complexities, are there none-the-less issues associated primarily with structure? Are there simply mismatches between a structural change implemented and other factors like empowerment or leadership? Are there longer term sustainability considerations that might be associated with of particular forms of organisation.

**Case examples**

The authors experience with two separate operations of an Australian Aerospace manufacturing company
provides an insight into some of the possibilities. Originally separately owned competitors, the two operations had some cultural differences, but both undertook broadly similar business re-engineering through the 1990s. The organisations had separate origins, and both were more than 50 years old. In the past, both had used functional bureaucracy, divisional structures and, for major new projects, cross-functional project teams. To varying degrees, both pursued a cellular work group approach on the shop floor in the early 1990s, and continued moving towards fully self-managed work groups. Functional specializations were progressively distributed into product centred strategic business units. Due to cultural differences, workload opportunities and differences in technology specialization, their detailed implementation arrangements differed. But both sites experienced a number of similar downsides not initially self-evident. These included:

- Gradual degradation in core competencies and process excellence - Manufacturing Engineering and Materials Management were impacted at both sites, despite the fact that training and procedures were put in place at the time of devolution of functional groups. The Design Engineering function was impacted at one site where initial reliance was put on a strategic alliance that later failed due to a change in focus of the alliance partner. Some older divisional structures were very function-oriented and there was some concern about the loss of shared knowledge relating to key manufacturing processes. A degradation took place over a number of years, so was not immediately apparent.

- Loss of “corporate memory” behind some of the practices and systems in use - Because of the long established nature of the organisations, many of the employees had worked together in a variety of roles for 10 or 20 years. The informal understandings that had been built up about what worked and what didn’t, and the awareness of who knew what, had developed in the context of past structures. The total business system was people, structure and procedures. Not only was the system disrupted by people changes associated with re-engineering, but the past, implicitly understood linkages had been changed, causing some confusion.

- Differing emphases on the progression of original change plans, as individual managers changed within the Company. - This impacted both cultural perspectives and decision-making practices of different groups, sometimes degrading interfaces between the groups.

- Reduced focus on longer-term initiatives due to high rate of internal change and, in one case, becoming too “lean” to be able to support such initiatives. A well developed informal mentoring practice was degraded above the shop floor level by the lean infrastructure.

- Employee attitudes changed with variations in perceptions of stability/security - Apart from destabilizing factors associated with re-engineering previously noted (Kovac-Kakabadse et al, 1997), the fact that the old organisation charts helped people understand who did what, and were useful to individuals
thinking about their career progression, was not considered in the re-design process targeting flatter organisation structures

- Cultural diversity impacted practical implementation matters. At one site in particular, there were three distinct generations of employees: a long serving group, a relatively long serving group of generation X people, and a relatively new group. In addition, there was considerable ethnic diversity. Work teams of around ten people were the norm, and training, operating rules etc were provided on team-based management practices, but the behaviour of teams differed depending on the mix of generations and ethic groups. Older employees wanted to be told what to do. Generation X’ers wanted to have a say in every decision. One team with a predominance of people from the Indian subcontinent had trouble working together if those born of a lower caste had to instruct those born of a higher caste. This highlighted a potential mismatch between structure and culture

- Evidence of some potential down sides, as well as benefits, of different forms of organisation:
  - The need to make contractual commitments and negotiate capacity with “network” partners. This was handled differently in previous vertically integrated or sub-contract relationships, which had to be “un-learned”
  - Introspective team focus that may cloud a real output orientation - people enthusiastically adopting team-work, but playing their own game
  - The need for, and some expectations of, a wider range of decision-making processes (autocratic, consultative, collaborative, consensus) caused some confusion, particularly with those individuals comfortable with traditional leader centred processes.

The Company had used three forms of organisation in various combinations at different times: dedicated product or project clusters focussed on delivered outcomes, generic operational process groups focussed on technical excellence and efficient use of assets, and “virtual organisation” concepts working collaboratively with others, particularly in Research and Development. Some observations made by the author about each form established within the case study companies at some time are shown in Table 2.

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>ATTRIBUTES</th>
<th>IMPERATIVES OF SUCCESSFUL OPERATIONS</th>
<th>POTENTIAL DOWNSIDES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORGANISATIONAL STRATEGY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEDICATED PRODUCT OR PROJECT</td>
<td>• Vertical integration of key/competitive processes • Dedicated product facilities and people</td>
<td>• End customer focus • Total product excellence • Excellent schedule compliance</td>
<td>• Duplication of resources in a multi – project environment • New structure required for new projects</td>
</tr>
</tbody>
</table>
Table 2: Some Organisational Strategies used by the Case Study Companies

On balance, the re-engineering process made the two organisations significantly more competitive. But the strategic management of potential losses in moving from the old form and management of potential vulnerabilities of new forms was not adequately addressed. To design a new structure, both the beneficial attributes and downsides of various forms of organisation need to be understood in the context of the operating environment. A form of audit process that identified beneficial aspects of the old organisation to be preserved, and potential downsides of the new organisation to be managed was developed. This has been reported elsewhere (Beckett, 2003a).

Knowledge Management and Organisational Forms

Most re-engineering programs focus on production flow or information flow management to remove redundant activities and find better ways to do the remaining activities, perhaps with some technology input. But, it is suggested here, based on the case study experience, that few of these programs also look at the factors of knowledge management, decision making processes and overall organisational connectivity that are part of the total business system and that are perceived to be important in the future.
Here, organisational forms are looked at from these three perspectives. It has been found convenient to classify the wide range of organisation forms possibilities into 3 archetypes for this purpose: functional hierarchy based, network based and team based. Some knowledge and decision characteristics along with examples of each archetype are shown in table 3 below.

From this characterization, it can be seen that each of the three forms has some distinct advantages:

- Team based organisations share know-how to adapt themselves and change in response to environmental needs
- The network based organisations support sharing of physical and intellectual assets and facilitate rapid learning to grasp opportunities
- The function based organisations promote excellence and specializations that may sustain key competitive competencies and support the maintenance of organisational levels, consistent with span of control leadership concepts.

Looking into the actual operations, it is more common than not to find all 3 forms at work simultaneously, regardless of the formally stated structure of an organisation. (ATK, 1995, Dunford and Palmer, 1997, Argyris and Schon, 1978). For example most universities are operated as functional hierarchies, but networks and teams (committees) are found necessary for proper functioning of the organisation. Whether this is driven of some primitive urge (Tuck and Earle, 1996), some natural law (Belbin, 1996, Lipnack and Stamps, 1994) or because people find by trial and error what works and what doesn’t is not important. Mixed forms are evolving on both local and global scales to blend consistency of operation with organisational agility. These forms have multiple decision paths, with various forms of knowledge management that focus on knowledge conversion into action. Some examples are:

- A hierarchy of teams
- Networked teams
- Larger scale networks, e.g. Kieretsu
- Franchised operations (bureaucracy, operational teams, network organisation blended together).

<table>
<thead>
<tr>
<th>ORGANISATION FORM</th>
<th>CHARACTERISTICS</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Functional Hierarchy Based</strong></td>
<td>• Concepts of levels and specialized purpose</td>
<td>• Functional bureaucracies: to maintain excellence in core competencies and</td>
</tr>
</tbody>
</table>
| Hierarchy Based | Focus on explicit knowledge  
Sequential decision making | consistency of internal processes  
Divisional structures: to maintain excellence in operational processes, speed decision making  
Strategic business units: to maintain excellence in customer focus and performance orientation. |
|-----------------|--------------------------|----------------------------------------------------------------------------------|
| Network Based   | Provides links across boundaries  
Focus on knowledge transfer and conversion  
Analysis of complex matters from breadth of perspectives | Strategic alliances: to gain competitive advantage from accessing privileged assets  
Networked divisions: to stimulate learning and synergistic opportunities  
Virtual organisations: to extend the scale and scope of realizable opportunities |
| Team Based      | Members define boundaries  
Focus on tacit knowledge  
Consensus decision making common | Strategic teams: to share knowledge and plan the future  
Cross-functional teams: to quickly create something new using concurrent diverse inputs  
Operational teams: to adaptively handle day-to-day requirements |

Table 3 Some Attributes of Three Generic Forms of Organisation

Never-the-less, it is suggested that each of the three forms has distinctive features that should make one of them predominant in a particular Enterprise. From this perspective, for example, a University should be a hierarchical bureaucracy to promote excellence in particular knowledge domains, focus on making knowledge explicit and available, sustain key competencies and offer an underlying stability.

We suggest here that change management and knowledge management may be interconnected and that a particular way of thinking may be adopted to utilise this interconnection. To introduce significant change in an organization, all aspects of knowledge transfer discussed by Nonaka and Takeuchi (1995) should be utilised to draw on the knowledge of those affected. For example:

- Tacit to tacit knowledge transfer through socialisation processes, commonly involving the use of models, metaphors and analogy to facilitate sense-making and to understand the intent and nature of the change
- Tacit to explicit knowledge transfer through externalisation processes, commonly involving facilitation tools to enunciate issues and concerns to be dealt with in making a change
- Explicit to explicit knowledge transfer to combine the newly externalised model with the intended change strategy, commonly involving the use of information technology tools.
Explicit to tacit knowledge transfer, helping people internalize the new way of doing things through training and mentoring, and creative idea generation to make the change a positive experience.

Discussion

From the literature relating to the search for “better” forms of organization, a number of drivers such as size and geography are suggested. And some of these drivers will change with time for any enterprise, leading to restructuring. From a knowledge perspective, it is considered that the forms of organisation adopted in a particular enterprise will primarily depend on:

- The organisational strategic imperatives: its reason for being
- The scale and scope of the enterprise
- The enterprise operating environment
- The people in the enterprise and its key processes

Each of these will be considered in turn, along with a number of sub-tier factors.

Strategic imperatives

Some organisational strategic imperatives will influence the predominant form of the organisation, for example:

- Excellence and specialisation are best served by a functional hierarchy. So, perhaps some organisations decentralize, then recentralise in pursuit of this excellence in core competencies
- Focussed specialisation, perceived as a good competitive strategy by some (Ruthven, 1997), is best served by Divisions or Strategic Business Units
- Asset sharing and rapid learning to grasp opportunities is best served by networking practices. This is evidenced by new Internet based business that completely change market access considerations (Burgess and Wood, 1997, Savage, 1997)
- Sharing know-how and adapting to the operating environment is best served by team based processes that share the whole life experience, tacit knowledge and leadership capabilities of the individual members (Belbin, 1996, Nonaka and Takuechi, 1995, Cope and Kalantzis, 1997)
Issues of scale and scope

The scale and scope of an enterprise impacts viable forms and decision-making processes. Geography - the extent to which an enterprise is widely dispersed impacts the nature of knowledge sharing, decision-making processes and power structures (Nonaka and Takeuchi, 1995). Size and span of control - it is suggested (Tuck and Earle, 1996) that it is difficult to sustain groups of more than fifty people without some subdivision and hierarchy. There is also some opinion that stable teams should contain eight to fifteen people. Smaller teams can carry out short-term assignments but are too fragile for long-term stability. Some also argue that six or seven is the largest number of relationships a person can deal with continuously and that decision-making performance in egalitarian groups falls off rapidly as the group size exceeds six (Miller, 1956). From a numerical perspective, these arguments logically lead to some form of hierarchy in all but the smallest organisations. There are also arguments that most people are comfortable with hierarchy, as we use hierarchical information classification to simplify complexity in our every day lives (e.g. personal transport classified as cars then brand then type then colour) (Argyris and Schon, 1978, Simon, 1969). Product/process complexity - single products made by simple processes require less specialisation, minimizing the need for bureaucracy and hierarchy. Wide ranging or complex product profiles require a degree of specialization, possibly with wider market access. Complex and expensive processes may require specialized assets and supply management arrangements that see these attributes dominate the organisation focus and “critical mass”. The nature of the organisation core competencies - the extent to which the organisation requires in-house product, process and service competencies will determine what organisational forms are practical for a particular scale of operation. For example, a small organisation may focus on product competencies and support the others by strategic alliances. Where critical knowledge resides both within and outside an organisation needs to be understood (Beckett, 2000)

The business environment

The operating environment impacts resource allocation and operating systems. The stability or turbulence of the environment (or the organisational imperative) can be assessed in terms of the need for innovation (gradual or rapid), customer demand (steady or unpredictable), competitors (unchanging or subject to sudden market shifts) and government influence (set policies or struggling for a new policy) (Lipnack and Stamps, 1994). The pace of change can be different in various parts of the business. Stability permits lower risk forms of organisation, such as hierarchical bureaucracies that can focus primarily on excellence.
The need for adaptability and flexibility to pursue new opportunities tends towards networks and teams. If access to privileged assets is needed for unique products, processes or services, then a network/alliance form of organisation would be most appropriate (O’Neill and Sackett, 1994). Alternatively, if an organisation owns some unique privileged asset, a focus on excellence (suggesting a hierarchical bureaucracy) may be appropriate. Cultural issues - if an organisation operates across cultural boundaries, either between co-operating organisations or across geographic regions, the form of organisation may be influenced by the decision-making processes that are viable. The operating systems may also be impacted. Some options include (Belbin, 1996):

- Operate the same way as at home base
- Change the local values to be consistent with those enunciated by the organisation
- Adjust all aspects of operations to local culture settings.

Some of these options may limit organisational form, e.g. the scope for bureaucracy.

**The trouble with people**


Power/political culture - there are four kinds of power/political culture that can influence who does what within an organisation (Belbin, 1996):

- An authoritarian culture, where things get done only by finding a person with the status to make decisions
- The kinship culture, where priority is given to family members
- The consensus culture, where no one individual is empowered to make decisions. The referral process is protracted but, in the end, the decision becomes totally binding
- The bribe culture, where no one can be expected to do anything without a sweetener.

Some of these matters may have to be dealt with through an intermediary or by setting up local organisations. The latter requires distributed decision-making.

Generational factors and the increasing number of knowledge workers. - As “baby boomers”, and now the next generation, increasingly populate any organisation, there is:
• Less acceptance or tolerance of authoritarian arrangements
• A greater focus on independence of the individual
• Growing resistance to the establishment of boundaries where work influences one’s personal life (Conger, 1997)

The increasing level of general education in the workforce and the increasing impact of “knowledge workers” has implications for:

• People wanting more say in how work is done
• The company’s skill base walking out of the door
• In concert with modern electronic communications, dis-linking the work to be done from the place of work (Drucker, 1992).

The need to maintain core competencies - some researchers (Hamel and Prahalad, 1990) see the long term survival of organisations closely linked to their ability to maintain core competencies that yield competitive advantage. Others have identified the need for both operational and reshaping competencies, to continually adapt the organisation to changing environments (Dunphy, Turner and Crawford, 1996)). These considerations lead to people frequently taking time out of day-to-day activities for personal renewal, re-shaping and to support innovation. However people in this situation may be seen by some “efficiency experts” as redundant to operational requirements. An associated issue is regularly stimulating organisational “superstars” who need to be continuously challenged (Belbin, 1996). These requirements lead to networking and off-line taskforce/learning processes.

Decision networks and the management of knowledge have been projected as important aspects of today’s global businesses. It has been projected that, as labour and capital become readily available in a global business, knowledge will become a primary organisational resource (Drucker, 1992, Ruthven, 1997). So, the acquisition and management of knowledge, and how it is used, should be facilitated by organisational structure. Some see middle management as critical to this process in a three layer business system: hierarchical business systems in one layer, networked project teams in another and a knowledge base that can be accessed by individuals in the other (Nonaka and Takuechi, 1995).
Introducing new forms of organisation

So, there are a lot of different ideas, but what is actually happening? One might conclude, on the face of it - not much. The Consulting Company, A.T. Kearney, conducted a survey of 10 successful multi-national companies, whose management practices are frequently reported to be at the leading edge (ATK, 1995). They showed classical structures and functional managers still very much in evidence. Below that, however, there is a complex evolution of traditional roles going on. Task management is gravitating from functions to process aligned teams. Traditional functional departments are re-focussing on developing and maintaining competencies. The role of middle management is evolving from control to integration. In a recently completed Australian survey of several hundred companies (Dunford and Palmer, 1997), a large number said they were adopting new forms of work organisation. But most also appeared to have traditional organisation charts and standardized practices that would preserve hierarchy and bureaucracy.

If the drive for new forms of organisation is so great, why do the older forms still appear prevalent? Is there a lack of innovation, or do the traditional forms have some real benefits? Are there elements of Jaques (1989) “requisite organisation” being observed here? It is suggested in this paper that the observed responses represent different blends of the three archetypes presented in Table 3, and that such blending is necessary to preserve both domain and architectural knowledge within an organisation. Looking into the future, if enterprise agility and knowledge management are to become key practices, then how do they interact? Some suggestions are presented in Table 4 below.

<table>
<thead>
<tr>
<th>AGILE ATTRIBUTES</th>
<th>FLEXIBLE FORM</th>
<th>RAPID CHANGE</th>
<th>FUNCTIONAL PRESERVATION</th>
</tr>
</thead>
</table>
| KNOWLEDGE ACQUISITION | • Supports internal and external knowledge access | • Requires coherent vision  
• Adaptable mental models must be embedded | • Maintain core competencies by keeping up to date, supporting exploration and renewal |
| KNOWLEDGE SHARING | • Requires defined roles, shared architectural knowledge about people and connections | • Requires stable business systems, shared cross-functional knowledge | • Supported by requisite organisation defining knowledge custodians, shared domain knowledge |
| KNOWLEDGE UTILISATION | • Network organisation pursuing market opportunities | • Team based process organisation focussed on customer needs | • Functional organisation maintaining brand and reputation |
Table 4: How do Agile Enterprise and Knowledge Management Practices Interact?

In the table above, the way the many facets of agile organisation and knowledge management might interact is explored. The view presented suggests that for organisations to be agile, there needs to be stability in a number of thing: in functions that maintain domain knowledge, in business processes and systems that maintain cross-functional knowledge, and in roles that maintain architectural knowledge.

It can be argued that this approach is being pursued by the Nokia Company (see earlier discussion) in seeking to move from a global critical mass with strategic partners, to a critical mass in global partners with a strategic core. Their targeted core comprises an organisation architecture with business sectors spanned by generic technologies and with business units linked by generic business processes. Agile business units are based on “best of breed “capability – wherever that might be available, either within or external to the company. A governance structure where business units control strategy, business models and operational models is blended with shared corporate infrastructure that controls business processes, application, I.T., platforms, computing and support, clearly delineating some generic roles.

Conclusions

Structural change in Business Enterprises may well be necessary as businesses develop and as their operating environment changes. But, whilst changing the organisational chart may seem straight forward, if the impacts of change are not understood, the organisation may become dysfunctional. Re-engineering may assure physical functionality is retained and enhanced, but may lead to a gradual decay in some core competencies.

We need to remain aware of the potential benefits foregone in moving from a structure that may have served the enterprise well for many years. We need to be equally aware of the vulnerabilities of new forms of organisation and identify ways to manage their potential downsides.

Adopting a knowledge perspective, it is suggested that organisational imperatives, scale and scope, the
business environment and peoples values will all impact the blend of three archetype organisational forms that are appropriate:

- Functional hierarchies to maintain domain knowledge and transfer explicit knowledge
- Networks to renew knowledge and access specialist knowledge within and external to the organisation
- Teams to share tacit knowledge and mobilise cross-functional knowledge

But whilst each form of organisation has benefits, each also has potential downsides, and it is suggested here that blending these three archetypes can minimise such downsides through understanding where knowledge resides within an organisation, how it is shared, and how it is renewed after an organisational change.

It is further suggested that change implementation may be usefully tackled from a knowledge perspective utilising the SETI model of Nonaka and Takeuchi (1995) to draw on the knowledge of those impacted by the change.
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