IMPLEMENTING BUSINESS PROCESS REDESIGN: EARLY LESSONS FROM THE AUSTRALIAN EXPERIENCE

Marianne Broadbent and Carey Butler

Key Centre for Technology Management, Melbourne Business School,
University of Melbourne

ABSTRACT

Business Process Redesign (BPR) is a change management approach aimed at achieving quantum improvements in business performance. Industry interest levels in BPR are high as a direct result of current difficulties in the global economic climate and tight business conditions. Integral to BPR is the availability of new stable technologies which both stimulate and enable process changes. This paper highlights the experiences of a number of Australian firms which have implemented BPR.

A ten step framework for BPR is presented together with a series of caveats. BPR is a difficult, messy and often non-linear activity which challenges many of the ways organisations operate. Information Technology plays a pivotal role in BPR as both an enabler and disenabler for change. Lessons emerging from early Australian experiences with BPR focus on the role of executive sponsorship, consultants, measurements, education and training, technology and people involved in the change process.

INTRODUCTION

> *"The '80s were a time for financial re-engineering ... the '90s are for technological re-engineering"* (Freedman, 1993).

Business conditions in the early 1990s have placed new strains on organisations as they strive to survive in fiercely competitive marketplaces. These strains are intensified amongst I/S groups facing continuing pressure to demonstrate the value of information systems - often with reduced resources. Business Process Redesign (BPR)[1] is now being undertaken by a substantial number of organisations to realign their operations in order to cope with these circumstances. Information Technology (I/T) can be viewed as both an enabling force for leveraging these changes, and as a disenabler if I/T investments have not been circumspect.

Hammer (1990) defines BPR as *"the radical redesign of business processes in order to achieve dramatic improvements in their performance"* - in terms of quality, flexibility and productivity. BPR analyses the work flows of an organisation, discards non-essential procedures and may then use the power of I/T systems and applications to further streamline organisational operations. While the use of technology is not proscribed, the majority of redesign projects undertaken in Australia and elsewhere have invariably included a significant I/T component. The benefits passed on from redesigned processes can include:

[1] Also commonly referenced as Business Process Re-engineering

improved customer responsiveness, dramatic reductions in process time, cost savings, and streamlining of the organisation in terms of structure, staff and resources.

This paper draws on the literature of BPR to examine the reported experiences of Australian firms which have undertaken BPR. We address a number of key questions, through applying a framework for the implementation of BPR, and then discussing its salient features. These questions include:

- What are the motivations for BPR?
- What is the relationship between TQM and BPR?
- What role does the I/S function play in BPR projects?
- How is technology being used in redesign projects to achieve performance breakthroughs?
- What are the key drivers within Australian organisations for implementing BPR?
- What lessons have these organisations learned through their experiences with BPR?

EVOLUTION OF BPR

The term Business Process Redesign, first appeared in the management literature in mid-1990, following the the publication of seminal articles by Hammer (1990) and Davenport & Short (1990). These articles described a new change management philosophy: one which transformed organisational processes beyond mere mechanisation of existing tasks, and offered quantum performance improvements (Craven, 1991).

Traditional functional management approaches were no longer seen as appropriate in a time where quality, innovation and customer service were of paramount importance (Butler Cox, 1991). There was a real need to implement processes that would enable a business to meet the ongoing demands of its marketplace (Bevilaqua & Thornhill, 1992). The apparent plausibility of the approach suggested by Hammer (1990) and others for attaining these goals, has led to the rapid uptake of Business Process Redesign.

Just as BPR's effect on an organisation is often cross-functional in nature, the approach itself draws on tools and techniques from a variety of well established disciplines such as industrial engineering, quality management and systems analysis. Rigby (1993) remarks that many of BPR's attributes can be traced back to work done by early researchers of organisational systems and design, and that established incremental change techniques like Activity Value Analysis or Core Process Redesign, are in many respects, earlier incarnations of BPR.

There are however a number of features which distinguish it from these earlier mechanisms. These include BPR's radical, largely non-incremental nature, claims of rapid paybacks for money and time invested, heavy involvement by management consultancies, and its strong links with enabling technologies. BPR is a change mechanism which if successfully implemented, can assist organisations to compete more effectively in a chosen market, and to realise payoffs on investment in I/T (Fried, 1991; King, 1991; Olson, 1992).

BPR AND TOTAL QUALITY MANAGEMENT

BPR also differs from the Total Quality Management (TQM) approach. While both are based on the premise that superiority in business process performance is critical to competitiveness, they differ in motivation, technique, objective, result and the business circumstances in which they are applied (Gulden & Reck, 1992). TQM favours steady incremental gain, and may often take a number of years before real gains are attained. For firms in highly competitive industries, this lagtime can allow competitors to forge ahead. TQM can however, lay the groundwork for BPR and provide a foundation for a focus on processes:

> In 1991, Digital Australia discovered that its TQM programme would not give the company "*the quantum leap in improvement needed to give it a competitive advantage in the desktop computer market*" (Alexander, 1993). Digital is currently undertaking a BPR project which involves extensive redesign of its supply chain process.
>
> Caltex Australia embarked on its Pacesetter program in 1989 to develop best practice approaches within the firm. Three years later this led to the formation of a Business Process Re-engineering function to streamline business processes and manage the information resources of Caltex in the most efficient and effective manner.
>
> The NRMA has a strong commitment to TQM and made continuous small improvements in their processes. The motoring organisation is now proceeding with a BPR initiative to challenge these processes while retaining their commitment to quality management techniques (Driva & Hunt, 1994).

MOTIVATIONS FOR BPR

A combination of business imperatives and technology availability underpin the motivations to commence BPR. Motivations which are not mutually exclusive include:

(1) a growing realisation that substantial change needed to be made to many current business operations if organisations were to maintain profitability and improve customer responsiveness. These concerns stemmed directly from:
- intensified industry competition within domestic markets and from overseas
- a worldwide economic downturn, which forced many firms to seek seek ways of achieving economies of scope and cost (Economist, 1990; Hammer, 1990; Butler Cox, 1991).

Australian examples: Qantas Airlines, BP Australia, Mobil Australia, and Caltex.

(2) the merger and acquisitions "binge" (King, 1991) of the 1980s had left many organisations with:
- heavy debt burdens caused by rapid expansion; and/or
- incompatible or totally different organisational cultures, work practices and Information Systems

Australian examples: Brash Holdings, the Commonwealth Bank, and Queensland's Department of Employment, Vocational Education, Training and Industrial Relations

(3) rapid advancements over the last decade, had produced a wide diversity of new technologies which were now both flexible and affordable. These included enabling technologies such as imaging, EDI and mobile computing (Butler, 1993).

Australian examples: Myer Grace Bros, MLC, and Norwich Financial Services.

(4) the pressing need for renewal or migration of legacy systems and applications:

- information systems developed 10 years ago are almost sure to fall short of today's organisational requirements (Emery, 1991). It is also increasingly recognised that systems maintenance is now a major cost component of any company investment in I/T. It is therefore vital for organisations to have efficient information systems in order to justify this investment (Hammer, 1990)
- the rapid growth of end-user computing has led to increases in user demands for enterprise-wide interoperability. This provides an added incentive for upgrade of the firm's IT infrastructure (Butler, 1993)

Australian examples: NRMA and TNT

(5) deregulation, re-regulation or privatisation particularly as it affected government agencies.

Australian examples: Telecom Australia, Melbourne Water and Victoria's State Electricity Commission.

INDUSTRY INTEREST IN BPR

Industry interest in BPR has a strong and direct link with any one or more of the motivations noted above. Industry interest levels can also be gauged by the results of recent surveys carried out by two of the major management consulting firms on Fortune 500 corporations in North America.

- CSC Index's annual survey on IS Management issues in 1992 found that over 70% of 407 respondent organisations were already involved in BPR programs, while a further 14% were discussing the possibility of doing so (Index Group, 1993).

- respondents to a recent survey conducted by Dun and Bradstreet Software Services overwhelmingly nominated BPR as the top priority issue for their organisations. "*Almost 60 per cent ... said their companies would reengineer at least part of the business in 1993, resulting in "significant" benefits over the next three years*" (Currid 1992).

These findings are consistent with the Australian scene. Broadbent & Others (1993) biennial survey on Information Systems issues amongst Australasian Share/Guide[2] members, found that respondents regarded Business Process Redesign as an I/S management issue of rapidly emerging importance. Dun & Bradstreet Software Services annual customer poll of 107 Australasian companies reported that 50% of respondents were either already undertaking or planning to undertake BPR initiatives (MIS, 1993). A major international research project on the role and value of I/T infrastructrure currently underway at the Melbourne Business School, found that over half of the 11 Australian firms included in the study were involved in BPR activities. Additional evidence of a growing interest in BPR by Australian firms was well supported in 1993, with around 14 BPR seminars or conferences held round the nation.

We now review the experiences of Australian firms who have reported implementations of BPR. These reports are taken from a variety of sources which include:

- the authors detailed case analysis of two business groups (Broadbent & Butler, 1993; Butler & Broadbent, 1993)
- the case vignettes of eleven firms who are participating in the Melbourne Business School's I/T infrastructure study funded by IBM Consulting Group
- literature reporting Australian BPR implementations
- conference and personal reports lodged with the Key Centre for Technology Management which acts as an information source for managers who have been involved in seminars and educational programs at the Melbourne Business School

FRAMEWORK FOR THE IMPLEMENTATION OF BPR

The framework presented in *Figure 1* has been derived from the literature and the experiences of Australian firms. The framework includes 10 steps which appear to provide a sound basis for the implementation of BPR. In the discussion that follows, examples from Australian firms are used to illustrate these steps. Caveats on this framework are presented in later sections of this paper.

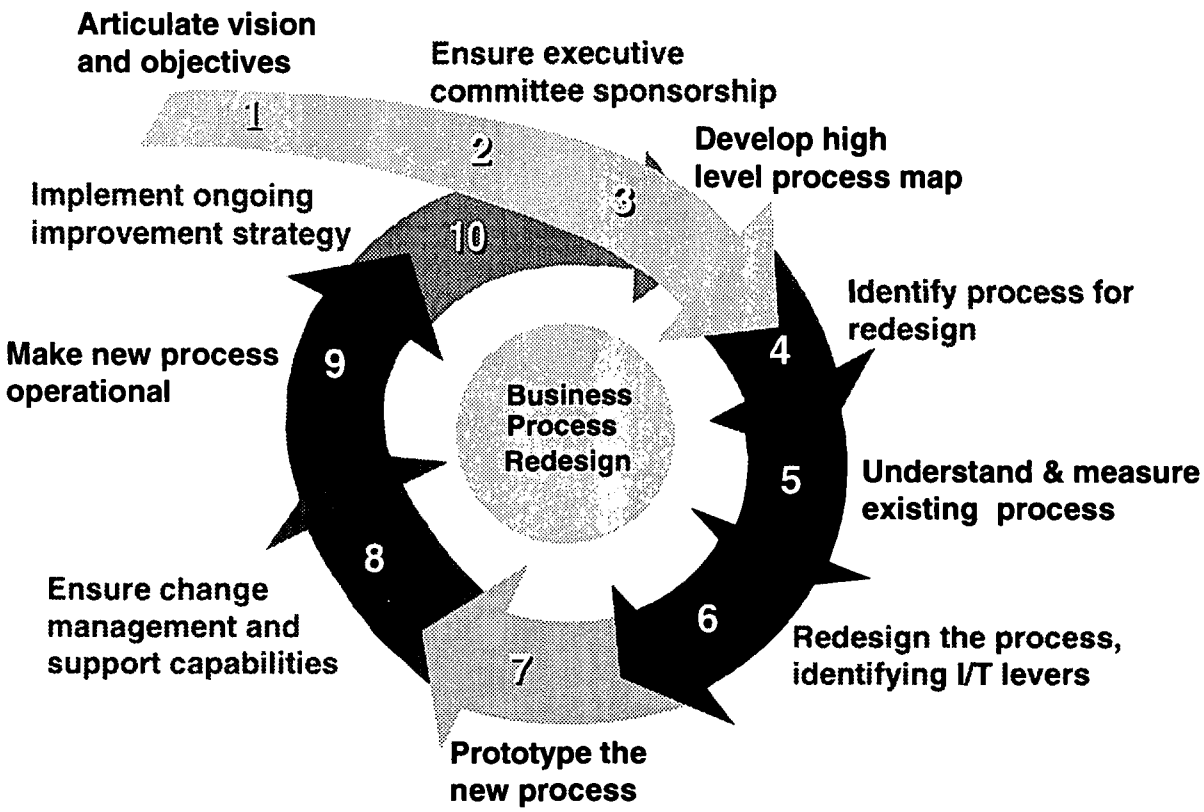
1) Articulate Vision and Objectives: *Evaluation of current business and prioritising of objectives.* The operative word in BPR is redesign - to change a business process to the extent that it will deliver the strongest possible competitive advantage (Carr & others, 1992). This is most likely to succeed in firms which exhibit a consistency of mission or strategic intent.

In 1991, BP Australia and BP New Zealand linked their operations to form the BPOAZ region. A significant part of Phase 1 of BPOAZ's BPR project involved determining a business vision that would integrate two quite different businesses. The vision moved BPOAZ *"from being volume driven to being profit driven, from being transaction processors to being knowledge workers, from being functionally managed to being process managed"* (Broadbent & Butler, 1993). Digital Australia's Qantum project focused on a major redesign of its supply process. Digital regarded the setting of a vision *"with the ability to motivate the organisation towards*

[2] A membership of organisations using IBM mainframes.

stretch goals and high ambitions" as being vital to the success of their project (Alexander, 1993).

Figure 1: A 10 Step Framework for BPR



Faced with increasing accountability and the need to deliver quality services, Melbourne Water has undertaken an extensive redesign project aimed at effecting a *"quantum improvement in performance"* (Lynch, 1994). Part of its methodology for establishing a new business design has involved translating the existing company vision into high level business objectives.

2) Ensure Executive Committee Sponsorship: *Because of its high risk, often radical nature, BPR requires the full support and commitment from top management if it is to succeed.* Hammer considers it essential for any re-engineering effort to have an high level champion to sponsor the project and see it through (Alexander, 1993).

BPOAZ's BPR project started to have an impact when executive level sponsorship was evident (Broadbent & Butler, 1993). Digital Australia considers strong, visible support and visionary sponsorship from senior management vital for success in BPR (Alexander, 1993).

3) Develop High Level Process Map: *Develop a high level view of existing business processes.* Part of Melbourne Water's business design study has involved defining high level business processes critical for meeting business objectives. The 10 processes identified and the interactions between them, constitute Melbourne Water's business process model (Lynch, 1994). Caltex Australia developed a business process map which acted as a guide for its BPR implementation.

BPOAZ conducted a number of Process Definition workshops in order to document how the region currently conducted its business in terms of the Order Management Cycle (OMC)[3]. The workshops produced a series of flowcharts which mapped the stages and individual elements of the OMC, and charted the interactions and levels of involvement between various business units (Broadbent & Butler, 1993). Once the process approach was accepted, charting of all major processes was undertaken.

4) **Identify Process(es) for Redesign:** *Identify critical or bottleneck processes.* In 1991, Australian transport giant TNT suffered its first loss for 30 years and faced strong competition in its traditional markets. TNT's new change program has involved the company in identifying and reassessing its core processes, and has realised a need to substantially upgrade the existing technology base to support these processes (Kelly, 1993). Digital Australia had identified its OMC process as a problem area. After mapping the process and measuring its performance, Digital discovered that the process was costly and inefficient, and that the technology supporting it was cumbersome and outdated (Alexander, 1993).

Queensland's Department of Employment, Vocational Education, Training and Industrial Relations (DEVETIR) is the result of a recent amalgamation of six previous state departments, each having different processes, areas of focus and computer environments. DEVETIR has recently undertaken an extensive redesign project aimed at deriving a common set of processes and developing a new I/T architecture that would support implementation of the new processes.

In late 1992, BP Head Office in London introduced a new company-wide Customer Responsiveness program. In line with this, BPOAZ selected Billing as its first major process for redesign. Billing had strong external interactions and would focus the group on a customer perspective (Broadbent & Butler, 1993). Norwich Financial Services undertook detailed analysis of its membership application and claims processes in order to identify how these processes could be streamlined (Head, 1993).

5) **Understand and Measure Existing Process:** *Use IT tools or other modelling techniques to document and/or understand existing processes.* After using the SimView computer-aided process modelling package to evaluate current freighting procedures and prototype new alternatives, Queensland Rail found ways to cut A$10 million from the process and substantially streamline operations (Mitchell, 1993). Australian car manufacturers Mitsubishi and GMH have also used SimView for simulating their production processes (Mitchell, 1993).

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[3] The OMC is a transactionally-based process which describes the work flows from lodgement of an order by a customer to delivery of that order to the customer. Most company operations involve an OMC element.

BPOAZ used Meta Software's IDEF computer-aided process modelling tool and DEC's symbol-based TOP mapping technique for tracking informational flows in a number of processes targeted for redesign (Butler, 1993). Digital Australia used a variety of prototyping and modelling tools extensively throughout its Quantum redesign project (Alexander, 1993).

6) Redesign Process(es) Identifying I/T Levers: *Develop new process approaches including IT solutions.* I/S holds a unique position in the organisation through its exposure to all areas of the business. Technology can integrate the organisational model by supporting the relationships between its components. While the application of technology is a key ingredient in BPR, it is not however an end in itself.

Digital Australia quickly realised that technology alone would not solve its business problems, but that BPR, supported by technology, could have a dramatic impact on business performance (Alexander, 1993). Myer/Grace Bros regarded the implementation of EDI/QR[4] technologies as vital for maintaining a competitive edge in their marketplace. They quickly realised a need for overhaul of their current systems environment and transactional processes in order to cope with rapid increases in information capture (Butler & Broadbent, 1993).

A sharp drop in international airline travel after the 1990 Gulf War, prompted Qantas Airlines to explore avenues for profit improvement. After developing radical new plans for change throughout the business which included a number of technology improvements and new solutions, the company was able to save US$200 million in operating costs (Carr & others, 1992). Financial services firms such as Norwich and MLC Life have both used document imaging technology to support re-engineered claims processes. MLC claims that productivity gains have exceeded their expectations (Roach, 1994), while Norwich claims 50-70% of their benefits have come through the use of imaging (Head, 1993).

7) Prototype and Test New Process(es): *Test new process for robustness.* Prototyping can be applied to both process and enabling technologies to test out the effectiveness of design with users before implementation (Alexander, 1993). After conducting a systems audit to determine a suitable I/T architecture design, Queensland's DEVETIR prototyped and verified its new processes running under the new architecture at a single site before moving to full implementation in departmental offices throughout Queensland.

Myer/Grace Bros opted for a phased introduction of its EDI/QR project. This entailed carefully trialing each new electronic document with a few selected supplier trading partners before proceeding to commercial activation. This approach also allowed the retailer and its suppliers time to reorganise systems and work practices in order to accommodate more complex EDI documents involving Quick Response (Butler & Broadbent, 1993).

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4 Electronic Data Interchange/Quick Response.

8) Ensure Change Management and Support Capabilities: *Prepare people for, and involve people in the changes that the redesigned process(es) will involve.* As a process undergoes redesign and prototyping, jobs are being reshaped. Process redesign inevitably involves changes in the nature of work. Some tasks are no longer done, while in other areas, the scope of work is expanded. Case management approaches, which can occur when insurance claims processes are redesigned, require a more holistic approach to customers, with one employee often completing a set of tasks previously spread over several workers or even several departments.

Until 1992, Brash Holdings ran its business almost entirely through manual processes. Store managers were required to complete up to 32 forms each day for recording of events. With the implementation of integrated point-of-sale, merchandising and management information systems in 1992-3, the nature of work in both stores and head office changed radically. Brash Holdings seconded key retail staff to head office, and particularly into the I/T function, to work on the most appropriate implementation of new processes and to lead the training program for over 3000 staff.

As part of their change management approach for redesign of the Billing process, BPOAZ held 'stakeholder briefings'. During these meetings, BPOAZ managers were introduced to the concepts of process management. Focus group sessions were then held which explored the relationship between the firm's Customer Responsiveness program and the redesign and process management activities. Once a number of processes had been redesigned, many staff had been involved in redesign workshops. This had a cumulative effect on BPOAZ's ability to speed up redesign of subsequent processes (Broadbent & Butler, 1993).

The implementation of EDI/QR at Myer/Grace Brothers meant radical change for both suppliers and buyers. Two approaches were put in place to support these changes. A retail manager who had worked on a major I/T project was given the responsibility of liaising between I/T staff and retail, buying and merchandising staff. Secondly, education and training sessions were held. This had the effect of bringing together both internal buyers and external suppliers to work through the most appropriate way to shape and implement changes in specific retail areas (Butler & Broadbent, 1993).

9) Make New Process Operational: *Implement the changes, putting in place a process management approach.* The implementation of a redesigned process usually requires concurrent changes in management approaches, how work is performed within the firm, and how technology is used. At BPOAZ, management of activities through business processes has introduced the concept of Process Owners, Process Managers and process teams. The Process Owner for billing is a divisonal manager who has responsibility for monitoring the performance of the process across the various functions involved. When further cross-functional enhancements are needed, the Process Owner sponsors these changes. Daily responsibility for the billing process rests with the Process Manager. This is a fulltime responsibility. Members of the billing process team come from all parts of the business which are involved in that process (Broadbent & Butler, 1993).

As Myer/Grace Brothers has proceeded with EDI/QR introduction, changes have been made to the way the new processes are managed. A more holistic management approach is now in place with one manager having overall responsibility for overseeing the phased implementation (Butler & Broadbent, 1993).

10) Implement Ongoing Improvement Strategies: *Put in place procedures to monitor and measure continuing improvements in the redesigned process(es).* BPOAZ has evolved a firm-specific process management approach whose final step involves continuous improvement re-assessment. A redesigned process must include a set of measures which enable the firm to monitor and improve the performance of that process (Broadbent & Butler, 1993). Just as the application of TQM techniques have provided an impetus for reengineering, those same techniques are being applied in an ongoing assessment of process performance.

NRMA considers that the quality management approach - with its focus on constant measurements aimed at improvements - combines well with BPR: *"The amalgamation of these two techniques gives us a quality system that helps us examine the processes and this is what we need to do to remain competitive"* (Riches, quoted by Driva & Hunt, 1994).

Retrace from Step 3 while ensuring that the vision, objectives and executive committee sponsorship are refreshed and in place. At this point, the high level process map is revisited and selection of the next process for redesign is initiated.

DISCUSSION

The framework presented above was used to highlight the steps which a number of Australian firms undertaking BPR activities have experienced. However, some caveats are required as BPR is not necessarily an activity which can be universally undertaken in a step-wise, proscriptive manner. Some of the salient characteristics of BPR are now discussed.

Non-linear and Political

BPR is a very difficult, messy and often non-linear activity. BPR challenges the empires of existing organisational stakeholders who might at first give their consent and pledge commitment. However, when the extent of possible changes become evident, that support can be quickly eroded. Leading a BPR team can be a risky career move as large scale redesign is usually undertaken in an intensely political environment. This underlies the importance of the highest level of executive sponsorship for changes which are cross-functional in scope.

Phases of Commitment during BPR

The organisational environment goes through several phases: initial commitment, excitement, fear of change, scepticism, tentative involvement and, if successful, large scale

commitment. Redesign activities can and do falter during any one of these phases. During implementation, those involved in driving the changes can expect to observe these phases occurring concurrently in different pockets of the organisation. Restarting BPR is often more difficult than gaining the initial commitment.

Use of Consultants

Most of the BPR implementations we have observed have involved the use of consultants. Taking a new look at an organisation's processes is difficult for those inside the firm without some external inputs. However consultants need to be part of a team headed by a senior manager in the firm. Once the first redesigned processes are in place, subsequent redesign can be undertaken with a lower level of consultant involvement. Firms implementing BPR need to carefully manage consultants to ensure the transfer of skills from consultant members to internal members of the team.

Role of Technology

We have identified four different ways where information technology can play a pivotal role in the redesign of processes.

1) *Systems development or renewal as stimulant and technology as enabler:*
In some instances, the redesign was stimulated as part of a systems development or renewal activity and technology is very much a driving force in enabling new processes. Examples include Brash Holdings, MLC and Norwich Financial Services.

2) *Technology supporting redesign:*
In other organisations, such as BPOAZ, the emphasis is on technology supporting a redesigned process. Greater value is extracted from the I/T in place. Major changes to the organisation's I/T were not required for the level of change implemented.

3) *Technology as both enabler and disenabler:*
Myer/Grace Brothers found that widescale implementation of EDI/QR in the business could not proceed until renewal of their technology base was undertaken. The current systems could not handle the data capture and processing load generated by integrated point-of-sale systems using 13 digit codes for all merchandise. In this third instance, EDI technology is enabling the extensive change of processes in a defined area of activity. However, this cannot be extended until changes are made to the organisation's the information technology infrastructure. Thus technology can be both an enabler and a disenabler for BPR.

4) *Technology discovery as stimulant and enabler:*
Organisations which have not previously used I/T as major component in the delivery of their business might identify a technology which radically changes the way in which the firm works and even the very nature of the business. Flower and Samios, a small Sydney-based architectural firm, provides an example of process change which was not undertaken as such. However the potential of the application of CAD/CAM[5] technology was seen by the firm's leaders and implemented in a way which changed

[5] Computer Aided Design/Computer Aided Manufacturing.

virtually all processes and created a redefined business (Yetton, Johnston & Craig, 1993).

The role of technology might also differ in different processes in the same firm. The above roles are not mutually exclusive and could exist concurrently in large firms.

The Role of the I/S Group

I/S groups are accustomed to working with many parts of organisations and are essentially cross-functional in perspective. I/S groups can often see what the business needs to do to better manage processes. However, this does not make I/S managers natural leaders of BPR implementations. The leaders of BPR teams need to be, and be perceived to be, senior managers who have a very strong and detailed grasp of the business. Sometimes such leaders can come from I/S groups, but this is often not the case initially. BPR teams need some members with strong I/S backgrounds; but if they dominate, or are perceived to dominate, support from key business stakeholders may be withheld if the activity is seen as just another attempt to spend more money on I/T.

LESSONS LEARNED

Organisations facing difficult business conditions might see BPR as a way of bringing about radical improvements in performance. We have presented reported examples of BPR in Australian organisations and mapped these on a ten step framework for implementing BPR. While the firms quoted have reported considerable improvements in their processes, extensive examples of widespread, well documented, substantial and sustainable change in the performance of Australian firms brought about by BPR are not yet apparent. There are however, some key lessons which emerge from the early experiences of Australian firms. These include:

1) the need for strong, visible executive management support
2) the importance of constant communication of the motivation and progress of process changes
3) the use of consultants to aid lateral thinking
4) the need to manage consultants and ensure skills transfer
5) the importance of measurements for both current and redesigned processes
6) the need for an external customer or supplier focus in the redesign of processes
7) education and support of all stakeholders in the process change
8) determining an appropriate role for technology
9) recognition of, and preparation for, the different phases of commitment to BPR which might be evident at different times
10) the importance of focusing on the nature of work and the role of people, not the organisation or its technology

The changes implemented by some organisations vary from simplifying to reinventing processes. The extent of process change appears to be related to a combination of factors: the desperation of the organisation and current state of its processes, the availability of suitable technology to enable and support sustained change, cultural factors related to organisational readiness, and political considerations concerning the acceptability of radical

change. We expect that some organisations which have already had the experience of process simplification, might now take a more radical approach to some of these issues.

CONCLUSION

Conceptual and consulting frameworks emphasise the inter-linkage of strategy, technology, jobs, structure, values and beliefs and management systems (Scott Morton, 1992; Hammer and Champy, 1993). Each of these need to be aligned to bring about and sustain successful process change.

The experience of Australian firms outlined in this paper demonstrates the complex nature of BPR. For many of these firms, BPR has been a change approach which was politically, managerially, and often technically difficult to implement. However, those which have implemented process change successfully, and put in place an ongoing process change strategy, find that they are well placed to handle competitive business pressures.

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