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# Business Process Reengineering

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# **Business Process Reengineering**

## **What are the social implications for the future if we continue to utilise IT to transform organisations?**

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### **Executive Summary**

What does the future hold for corporations as we approach a new millennium? According to Meel et al (1994) many organisations need to transform in order to maintain a competitive position within the market place. Industry trends have indicated that current or anticipated economic uncertainty has resulted in many organisations instigating changes to their current operations (Cascio 1993) to improve productivity, customer service, quality, speed and responsiveness within the organisation. But what impact will this have upon the workforce of the future?

Business process reengineering has been utilised as a tool to transform organisations, utilising the enabling characteristics of technology to achieve dramatic improvements in productivity and customer service on a wide scale. Advocates of BPR promote reengineering as empowering and enriching the workforce, whilst less enthusiastic proponents portray the deployment of IT in reengineering initiatives as a dehumanising process, whereby the principle objective is to maintain control over the workforce. The issue of integrating automatic control mechanisms into new systems is a controversial but pertinent issue for organisations of the future, as many corporations are reengineering their operations and developing new information systems.

The technological infrastructure is already available for organisation's to monitor most aspects of our daily lives, therefore, it is feasible that a panoptic<sup>1</sup> society that is overseen by a computerised office manager may become common place in reengineered corporations of the future. Although the author envisages the corporation that is capable of integrating control functions into processes whilst simultaneously enriching organisational life in the redesign process shall achieve a higher level of success and maintainable improvements.

### **Abstract**

Since the conceptualisation of business process reengineering (BPR) in the late eighties and early nineties, interest in the topic has gained momentum, although very few authors have examined the impact upon the workforce and society. This research draws upon existing literature to examine the problems encountered by corporations in the mid 90's, the role of business process reengineering (BPR) and the utilisation of information technology (IT) in the transformation process. The paper also examines the deployment of IT in BPR to examine the impact upon the workforce, the implications for the organisation's social system and the anticipated effects upon employees in the future. The impact upon the workforce has been examined in relation to the effects of downsizing, and the impact of deskilling and controlling the workforce verses the potential to enrich organisational life.

### **1.0 Introduction**

For organisations of the future change is imminent. Current trends have indicated that many organisations have already implemented wide scale changes. However, is this a result of organisational profiteering or has the need for transformation become a competitive necessity? Many organisations have implemented or are in the process of implementing business process reengineering, as the rhetoric promise of reengineering has been exemplified by examples of organisations achieving dramatic improvements in business efficiency and customer service on a wide scale. This paper has been developed by critically evaluating literature on IT, BPR and the social impact of change in relation to the present and future. The objective is to discuss the social implications for the future, if corporation's continue to deploy IT as a mechanism to reengineer the organisation.

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<sup>1</sup>Panoptic is Greek for 'all seeing'. The members of this type of society are the object of constant surveillance; they may be seen, but they cannot see (Foucault 1979).

## 2.0 The Corporate Dilemma

### 2.1 Current Trends

With a global decline in manufacturing and an increase in the size of the service sector, white-collar workers occupy a substantial segment of the workforce. In 1990 the U.S service sector accounted for 75% of the workforce in the private sector (Meel et al 1994) and more than 85% of the "installed base of information technology" (Roach 1991). The nature of work has changed dramatically since the beginning of this century. Society has become more information intensive and technology has been frequently utilised as a tool for increasing productivity, customer service, quality, speed and responsiveness within the industry. However, many of the expected productivity<sup>2</sup> gains have not been realised (Attewell 1996; Brynjolfsson 1993; Roach 1991). As a result, information workers have become the focus of the productivity debate in the mid 1990s.

The need to reduce overheads has been stimulated by current and anticipated economic uncertainty, a loss of market share and high debt ratios, which has resulted in many organisations downsizing their workforce (Cascio 1993). Between 1987 and 1991 approximately 85% of the Fortune 1000 companies downsized, which effected approximately 5 million white-collar employees (Cascio 1993). Roach (1991) has characterised this epidemic of restructuring as a precursor to deeper changes in the future of the service industry, rather than the current global recession. Change has become common place in the mid 1990's, as many organisations have begun or are in the process of implementing radical change programmes. However, Libey has expressed his concerns for change in the years before and after the dawn of the century :

*We are trying to do everything in the ten years before the change. And in the ten years after, we're fixing everything we did wrong. ... It happened in the sixteenth century, the seventeenth century, the eighteenth century, the nineteenth century, and its happening now.*

(cited in Weiland 1996, p60).

Industry trends have indicated that many organisations have altered the size of their workforce. However, what impact has this transformation had upon the remaining members and the organisation's social system, and how will these changes effect the future of our white collar workforce?

### 2.2 The Implications for the Future

Societies obsession with technology has escalated resulting in many organisations investing heavily in computing. Whilst each organisation's goals vary, many corporations have envisaged an extensively computerised future as "preferable to the less computerised world in which we currently live" (Iacono 1996, p.86). This interest in technology corresponds with rapid increases in organisational and educational expenditure (Chaya et al 1995; Becker 1996). Today individuals are exposed to technology in almost every aspect of their daily lives. Not surprisingly, Kling's (1996) research has found that many authors depict social progress in the year 2000 as closely associated with technological progress.

These trends characterise the significance of the information revolution and societies dependence upon technology, both today and in the future. Attewell has defined the information revolution as a 'self-fuelling' process, whereby "improvements in the availability of information lead to ever greater demands for information" (1996, p.235). Despite the rhetoric appeal of technology and societies quest for advancement, have organisations redesigned their processes and deployed IT solely as a mechanism to increase profits and maintain control or has the deployment of IT become a competitive necessity?

### 2.3 Organisational Profiteering or a Competitive Necessity?

Many problems businesses encounter relate to environmental changes. As a result, many bureaucratic organisations have lost their competitive advantage, as their command and control structures have become a barrier to expedient service delivery and product quality initiatives (Huff 1992). According to Meel et al (1994, p.601), "... organisations need to transform their business in order to survive". Unfortunately, many of these transformation processes have involved the

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<sup>2</sup> This could also be attributed to mismeasurement, unaccounted lag times, redistribution of profits or mismanagement (Brynjolfsson 1993).

elimination of employees within the organisation, as a method of improving efficiency and reducing overheads, without redesigning the organisation's current work structures. Paradoxically, many of these organisations have experienced a decrease in efficiency and an increase in human resource expenditure, as many employees are rehired on a part time basis or as consultants (Cascio 1993). To achieve long-term sustainable improvements in efficiency, organisational redesign as part of a continuous improvement initiative is required to eliminate inefficiency, waste and redundancies (Cascio 1993).

### **3.0 The Role Of IT In The Transformation Process**

In the eighties, there was a tremendous 'technological push' and organisations began to automate existing manual processes at an alarming rate, without regard or insight into the efficiency of the existing processes. Hierarchical lines of control were embedded in many of these procedures and technology merely provided a means of 'speeding up' the process. "The principles of command, control and compartmentalisation" upon which many traditional organisations were founded (Cascio, 1993 p.95) now represent a barrier to the organisational efficiency. The capabilities of IT have enabled many traditional organisations to alter their existing structures and practices (Morton 1991). Many organisations have recognised the need to transform and are moving towards the more popular networked structure (Rockart & Short 1991). Networking provides organisations with greater flexibility by interconnecting information, people and skills together in a more effective manner (Rockart & Short 1991), as these organisations generally comprise of flatter organisational hierarchies and are interconnected by communication technologies.

BPR utilises IT as a tool to transform organisations by restructuring existing processes and flattening existing structures, by eliminating restricting command and control points which were a legacy of the previous structure. The utilisation of IT within most successful reengineering initiatives is not considered as a solution, rather an enabler to the process (Huff 1992). BPR literature frequently portrays technology as an enabler or lever to reengineering initiatives, capable of providing measurable returns on investments (Hammer & Champy 1993; Willmott & Wray-Bliss 1995; Butler 1994; Bjorn-Anderson & Cavaye 1994; Petrovic & Zsifkovits 1994). Subsequently, organisations have been looking at new ways to harness the powers of technology to gain competitive advantage, with many corporations utilising IT as a 'strategic weapon'. The role of technology as an enabler to reengineering initiatives in current literature is primarily supported by organisations achieving substantial cost savings and decreases in response times. For many organisations the use of IT has become a competitive necessity.

The enabling characteristics of technology are emphasised by the automation of processes that are too costly to perform (Petrovic & Zsifkovits 1994). Davenport and Short (1990, p.22) claim Rank Xerox instigated a IT-driven reengineering initiative, and emerged from a lengthy period of stagnation to achieve a 20% increase in revenue growth, a 27% reduction in personnel involved in customer relations and a reduction in order delivery time from thirty-six to six days on average. Citibank/Citicorp achieved a 760% increase in profit earning and a 40% reduction in the staff processing loan applications after a two year period (Butler 1994). As the utilisation of technology often alters the structure of business processes the number of employees required to perform the process can often be dramatically reduced, thereby reducing labour costs (Petrovic & Zsifkovits 1994; Nance and Sessions 1994). Hammer (1990) claims Ford achieved a 75% reduction in personnel when they reengineered their accounts payable process. These organisations utilised the enabling characteristics of technology to achieve substantial cost savings and improvements in productivity.

Technology can also be utilised to reduce turn around times and time delays associated with geographically dispersed resources and increase customer satisfaction and turnover. As the underlying assumptions inherent in the reengineering concept advocate empowering employees, the adoption of central computer systems can provide employees with access to a wider range of information to perform an entire process. The strategic use of computerisation enables organisations to delegate the decision making process to lower level managers (Attewell & Rule 1984) and monitor work activities and outputs, thereby providing higher level managers with greater control and more timely information (Nance and Sessions 1994). The IBM corporation utilised IT to reengineer their credit approvals process and achieved a 90% reduction in processing time, increased turnover - hundredfold (one hundred times) and moderately reduced the number of personal required to process

their credit applications (Hammer 1993). The utilisation of IT in reengineering initiatives can improve work practices by dramatically reducing turn around times within an organisation and increasing customer service levels, which can indirectly increase the organisation's competitiveness within the industry.

These rhetorical successes over shadow the high failure rates attributed to many reengineering initiatives by exemplifying the advantages of utilising IT to transform organisations, although in many instances the economic benefits are not realised. Often the large expenditure associated with computerisation is not in proportion to the attainable benefits and the social costs are often neglected (Iacono & Kling 1996). Whilst in times of economic uncertainty and financial hardship the potential benefits of IT often overshadow the social ramifications of change.

#### **4.0 The Social Implications Of Utilising It In The Redesign Process**

There are two views of the impact of IT upon the workforce, that is, the deskilling verses the enrichment hypothesis (Eason 1988). The deskilling hypothesis perceives technology as a superior entity that requires employees to perform mundane duties, thereby reducing their skill set and overall levels of workplace satisfaction. Whereas the enrichment hypothesis perceives technology as 'freeing' employees from monotonous tasks and enabling them to perform a more creative and fulfilling role within the organisation. The social implications of utilising IT to reengineer the corporation has been examined in relation to the deployment of technology within the workplace. More specifically, the associated effects of downsizing (as many reengineering initiatives have resulted in downsizing (Greenbaum 1995; Guimaraes 1995)) and the impact of technological redesign upon the workforce in relation to deskilling and controlling the workforce (as the concept of empowerment ultimately provides management with greater control). The opportunities for enriching organisational life and the implications for the organisation's social system and the future are also examined.

#### **4.1 The Impact upon the Workforce - Current & Future**

Whilst the long-term implications of societies quest for enhanced access to information can only be speculated, in the immediate term technological progress is placing greater burdens upon organisations and the workforce (Attewell 1996). As a result, many organisations have increased their capital expenditure and implemented reengineering initiatives to increase their competitiveness within the industry. Unfortunately, many of these changes have had a significant impact upon the workforce in terms of downsizing. BPR does not necessarily imply downsizing, although in many instances reengineering initiatives have resulted in downsizing (Greenbaum 1995; Guimaraes 1995). The enabling characteristics of IT have provided organisations with a tool to dramatically reduce the size their workforce. As a result, wide scale reductions in the white-collar workforce has left many people unemployed, and in many instances the negative impact of downsizing overshadows the potential benefits of employee enrichment that can be achieved through reengineering.

##### ***Downsizing***

Greenbaum (1995) has described reengineering as often a dehumanising process that gives management greater control over the standardisation and combination of work practices by utilising integrated technologies. Numerous studies have concluded that employees who have survived downsizing distrust management, morale and productivity declines, employees become self absorbed, narrow minded and risk adverse (Cascio 1993). Employment insecurity is also a consequence of many reengineering initiatives (Willmott & Wray-Bliss 1995) as often substantial reductions in personnel are imminent and managers who remain often encounter hostile organisational environments (Cascio 1993). Whilst, the employees that remain in the reengineered corporation generally have increased responsibilities, greater workloads and less opportunities for advancement as the cost cutting techniques employed have eliminated many of the managerial positions (Greenbaum 1995).

##### ***Deskilling***

Several researchers (Schultz & Whisler 1964; Whisler 1970; Glenn & Feldberg 1977; and Attewell and Rule 1984) have discussed the effects of deskilling upon the workforce in the 60's, 70's and early 80's, however, the issue has been largely neglected in the 90's. As the utilisation and deployment of IT has changed direction the relationship between deskilling and the deployment of technology in the reengineered corporation cannot be successfully extrapolated from previous research in its entirety.

Reengineering has changed the nature of work from the Tayloristic piecemeal approach to a holistic process. Workers in the reengineered corporation often perform multidisciplinary tasks with the aid of expert systems that assume the role of the decision maker. As a result, the skill levels previously required to perform the task can be substantially reduced, which effectively deskills the workforce. This scenario is also applicable to the role of middle management as more information systems are being utilised to analyse data, management positions are being eliminated or reduced to the role of messengers (Crowston & Malone 1994).

### **Controlling the Workforce**

The deployment of IT within reengineering initiatives is also a principle mechanism for monitoring the workforce. Many researchers have attributed computer systems to a new range of possibilities for supervising and maintaining control (Crowston & Malone 1994). The issue of integrating automatic control mechanisms into new systems is a controversial but pertinent issue for organisations of the future, as many corporations are reengineering their operations and developing new information systems. Some organisations believe monitoring is essential and beneficial to employees, whilst some employees perceive monitoring as dehumanising and an invasion of privacy (Chalykoff & Kochan 1994). Whatever the outcome of this debate it is feasible that monitoring will become more prevalent in the workplace of the future (Chalykoff & Kochan 1994), as management's quest for control increases.

### **Enrichment**

Advocates of BPR claim reengineering frees employees from the outdated and constraining practices that have been associated with traditional organisations (Willmott & Wray-Bliss 1995). Reengineering often abolishes lower level tasks, such as data entry by eliminating or repackaging these tasks into integrated positions (Greenbaum 1995) which enables many employees to perform a wider range of activities, thereby reducing the repetitive nature of the task. Positive outcomes resulting from the utilisation of IT to redesign processes include enhanced customer service and increased job satisfaction (Attewell 1996). The concept of individual empowerment is often promoted by organisations instigating BPR as a mechanism for employees to achieve satisfaction and personal development. (Willmott & Wray-Bliss 1995). Reengineering empowers employees by enabling them to perform complete activities in contrast to Taylor's piecemeal approach. The benefits of this approach are supported by "Hackman and Oldman's (1980) notion that jobs are more satisfying when they involve the completion of a 'whole' and identifiable piece of work" (cited in Crowston & Malone 1994 p.265).

### **4.2 The Implications for the Organisation's Social System**

BPR's concept of obliterating organisations, destroys established work practices and regulations that have been sustained by an employee's value system, organisational predictability and their measure of security (Willmott and Wray-Bliss 1995). The restructuring of the organisation and the integration of tasks can also reduce the communication procedures between coworkers and the levels of social interaction within the organisation (Crowston & Malone 1994), and the elimination of face-to-face communication has the potential to isolate employees and disrupt the organisation's social system. The creation of systems that reduce the need for interaction between employees diminishes the opportunities to form social ties within the workplace (Crowston & Malone 1994) and does not promote a learning environment. This may also affect an organisation's competitiveness as motivated and well trained employees are universally recognised as the key for improving an organisation's competitiveness (Guimaraes 1995). As the nature of information systems are changing further investigation is required to examine the implications for an organisation's social system in the future, if we continue to deploy technology as a mechanism to control and eliminate social interaction within the workforce.

### **4.3 The Implications for the Future**

Winner's perceptions for the future of the white collar workforce represents a unenchanted view of organisational life.

*Facing them is a structure that incorporates the authoritarianism of the industrial workplace and augments its power in ingenious ways. No longer are the Taylorite time-and-motion measurements limited by an awkward stopwatch carried from place to*

*place by a wandering manager. Now workers' motions can be ubiquitously monitored in units calculable to the nearest microsecond.*

(1996, p.83)

As many organisations are moving towards networked structures (Rockart & Short 1991) and increasing their dependence upon infrastructure technologies, management's desire to maintain control is a legacy of their previous structure. The information systems of networked organisations have a perpetuating need to maintain control and utilise surveillance techniques to improve upon the traditional bureaucracies and centralise their planning and control functions (Wilson 1995).

Electronic surveillance is not a new concept, although management's quest for maintaining control over the 'bottom line' is likely to dramatically increase with declining IT costs and technological advances in the near future. The technological infrastructure is already available for organisation's to monitor most aspects of our daily lives, therefore, it is feasible that a panoptic society that is overseen by a computerised office manager may become common place in reengineered corporations of the future. Although the author envisages the corporation that is capable of integrating control functions into processes whilst simultaneously enriching organisational life in the redesign process shall achieve a higher level of success and maintainable improvements.

## **5.0 Conclusion**

Societies quest for information and its dependence upon technology has fuelled the information revolution. As a result the utilisation of IT in the workplace and our educational institutions has escalated. The deployment of IT and the need for transformation has now become a competitive necessity for many organisations, if they are to survive in the future, and the wide scale adoption of technology has resulted in many authors debating the relationship between IT and productivity. Although in many instances they have neglected the social ramifications of this phenomena.

The nature of work in the nineties has changed direction, as many organisations have reengineered or are in the process of reengineering. BPR has gained popularity and has been utilised as the principle mechanism to transform organisations by exploiting the enabling characteristics of technology to achieve substantial improvements in business efficiency and customer service on a wide scale. But what impact has this had upon the workforce and an organisation's social system? The author has resurrected the deskilling and enrichment hypothesis to examine the impact upon the workforce in conjunction with the effects of downsizing as there is a clear relationship between BPR, organisational transformation and downsizing. Advocates of BPR promote reengineering as empowering and enriching the workforce, whilst less enthusiastic proponents portray the deployment of IT in reengineering initiatives as a dehumanising process. Whereby the principle objective of reengineering is to maintain control over the workforce, which can have a negative impact upon the organisation's social system. The implications of this phenomena include isolating employees which creates an environment that is not conducive to learning and reduces the opportunities for social interaction.

Many reengineered corporations have incorporated automatic control systems into their information systems to monitor performance and in many instances replace management. As a result, the employees that remain in the reengineered corporation generally have increased responsibilities, greater workloads and less opportunities for advancement as many of the managerial positions have eliminated (Greenbaum 1995). The issue of integrating automatic control mechanisms and monitoring is a controversial but pertinent issue for organisations of the future as they redesign their information systems and an area that requires further research. The author predicts monitoring shall become more prevalent in the reengineered corporation and the panoptic society that is overseen by a computerised office manager shall become common place in the near future.

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