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Integrating total quality management and business process re-engineering: is it enough?

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Introduction

In the last few decades of the twentieth century, knowledge has accumulated, innovations have been occurring at an unprecedented rate, competition for technology and markets has intensified, and customers have become more educated and more demanding than ever. This has forced organizations world-wide to set up new methods of dealing within the context of laws and standards that require a completely overhauled way of organizational thinking and behaviour. In 1998, a survey of the leading UK organizations was undertaken by the authors to assess the views and practices regarding future performance excellence. The survey revealed that 96.6% of senior managers who responded agreed that change has become the foremost business issue of our day. Eighty point three per cent of the respondents also agreed that success today requires a completely overhauled way of organizational thinking and behaviour. Clearly, businesses have realized that there is a need to restructure their business practices and become more customer-focused. However, they do not necessarily know how and what to change, to achieve improvements in productivity and performance (Love & Gunasekaran, 1997). In the last decade, two main organizational development models dominated the organizational world, namely, total quality management (TQM) and business process re-engineering (BPR). Organizations have used either or both to achieve the required change and ensure success.

BPR versus TQM: Two opposing camps

Over the past 20 years, quality has been hailed as the key factor for success. However, the organizational world is increasingly moving away from the traditional 'quality' concept, as functions such as inspection, audit and review are all now seen as non-value adding (Silverman & Propst, 1996; Sutter, 1996). Even the highly acclaimed TQM has brought about disappointing results, and has been heavily criticized by many who noted that continuous improvement is not enough (Burdett, 1994; Johansson *et al.*, 1993; Sutter, 1996; Webb, 1995). On the other hand, many have defended TQM and argued that it is the right way to achieve success but it is being misapplied (Maccoby, 1993). However, in spite of any success that TQM had achieved, the organizational world in the late 1980s became frustrated by its concepts. This was the perfect opportunity to introduce BPR. Case studies of dramatic

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success stories were publicized, and by 1996, through the activities of a variety of consulting firms, BPR had become a US$51 billion industry in the US alone (Jennings, 1996).

Two opposing camps soon emerged. The BPR enthusiasts declared the end of TQM, while the TQM followers predicted the quick failure of BPR and described it as a passing fad. Grant *et al.* (1994) stated that TQM contradicted conventional management practices of Western countries and therefore required careful scrutiny. On the other hand, O'Connor (1994) saw BPR as being in conflict with some of the fundamentals of good management and stressed that steady improvement, well managed across a broad front, was the most effective way to get, and stay, ahead.

When comparing the merits of the methodologies applied in both improvement philosophies, the strongest contradiction rests on the notion that BPR discards incremental improvement by demolishing old processes to clear the way for new ones. One of its greatest benefits has been that it served as a wake-up call to remind organizations that business-as-usual (no matter how profitable) is not a reliable key to future success (Brown, 1997). In this regard, many agree, rightfully, that BPR offers a very valid point. Allender (1994) argued that it would be a waste to improve a process that technology had rendered obsolete, but emphasized that, "BPR's narrow concentration on improving processes does not qualify it as the substitute for TQM". Ettlie (1994) took this discussion further and concluded that BPR would not be necessary if companies practised good quality management. However, no matter how much truth these opinions hold, there are many reasons for rapid change, and a requirement for different tools and techniques from those offered by TQM. Almost every organization must engage in BPR at some point to survive in the fast-changing world of the information age (Mortisons & Revenaugh, 1997; Smallwood, 1996).

Recently, further experience with both TQM and BPR has brought the two camps closer. Professionals have started to discuss how the two strategies are related, a fact that the founders of BPR (Davenport, 1993; Hammer & Champy, 1993) have always stressed. "TQM should be used to keep a company's processes tuned up between the periodic process replacements that only BPR can accomplish" (Hammer & Champy, 1993). Wright (1995) argued that, with appropriate facilitation, re-engineering of existing processes to achieve step-function improvements can be leveraged through existing TQM processes.

Comparing TQM and BPR

Before trying to point out the differences between TQM and BPR, it is more useful to find the similarities. Their similar aspects, as noted from the work and research of many scholars and practitioners (Hammer & Champy, 1993; Davenport, 1993; Krieter, 1996; Zairi & Sinclair, 1995; Harrison & Pratt, 1992; Klien, 1994; Talwar, 1993; Janson, 1992; Guha *et al.*, 1993), are summarized in Table 1. These points represent a wide viewpoint, and are meant to highlight the broad commonalities between the two approaches, not to suggest that BPR and TQM are similar in their application methodologies.

Table 2 shows a comprehensive list of the differences between TQM and BPR, as provided by the literature and personal observations.

Tables 1 and 2 clearly show that both approaches have their weaknesses as well as individual strengths. A survey was conducted by the authors Jarrar & Aspinwall to assess the views of senior management regarding both TQM and BPR. Repondents were asked how well they thought either had met key components of organizational success. Figure 1 shows the results. The chart clearly demonstrates the differences between TQM and BPR. Apart from their minimal strategic impact, there were no points perceived to be equally addressed by both. BPR was rated highly in terms of innovation and IT utilization, while TQM provided

Table 1. *Similarities between BPR and TQM*

Similarity aspect	Both TQM and BPR . . .
Quality movement	Are quality movements, involving looking at the company and trying to improve it for the future
Support and commitment	Require the support and commitment of employees and top management, with varying emphasis. BPR requires more top management commitment, while TQM aims more at overall commitment
Measurable results	Produce results that are measurable, although these are much more difficult to assess and still under study in the case of TQM
The customer is the focal point	Begin with customer requirements and maintain a customer focus throughout. Much has been said about losing customer focus within TQM or BPR applications, but these are implementation flaws and not ones of theory of approach.
Process focus	Focus on processes and shift organizational thinking away from function and department mentality
Teamwork	Recognize the importance of teamwork and rely on it for their success
Training	Focus on training everyone in the organization, teaching them new techniques, tools and terminology
Cultural change	Require a complete overhaul of organizational culture, as they destroy the traditional hierarchical command and control organization. However, the shift itself is quite different between the two approaches. They both necessitate moving towards cross-functional working, but the necessitation in terms of culture change is widely different. For example, both require employee involvement and rely on employee empowerment for success. However, within BPR, the involvement and empowerment is led from the top

the best practices for continuous improvement and customer satisfaction. Table 3, which resulted from the survey and a review of the literature, summarizes the major strengths and weaknesses of TQM and BPR.

Integrating TQM and BPR: Is it enough?

It is apparent that there are major problems within the foundations of each individual approach. However, there is also a clear opportunity to unite them both to 'fill each other's gaps'. Several authors and practitioners have taken this on board and have put forward a few suggestions. These attempts can be placed into one of two categories:

(1) Integrating BPR and TQM by using the former as a tool or subset of the latter. Leach (1996) concluded that "TQM is much more likely to lead to success than BPR and BPR might have a place as a specifically designed tool for TQM, but it is not a substitute". Many others agreed (Allender, 1994; Dichter *et al.*, 1993; Kelada, 1996; Raynor, 1993) and suggested that it is more constructive to incorporate BPR as a valuable tool within the framework of TQM. Within this context, BPR can be considered as a "continuous improvement activity that delivers a high rate of increased productivity and quality in a short time" (Kelada, 1996), and "TQM provides the essential cultural framework to enable BPR" (Macdonald, 1995).
(2) Integrating the strategies by applying TQM after BPR. Krieter (1996) concluded his work on the subject by saying, "Use BPR to build a platform for a TQM

Table 2. *TQM versus BPR*

Aspect	TQM	BPR
Initiated by	Conventional know-how Common sense	Panic External pressure from customers, competitors and stakeholders
Starting point	Existing processes—analyse, standardize and improve	Clean slate—throw everything out and start afresh (total redesign)
Frequency of change	Continuous (continuous and incremental)	One-time (occasional)
Focus	Components of the system Individual processes Activities	Macro processes Core processes
Customer focus	Equal emphasis on internal and external customers	Emphasis on external customers. Internal customers are a distraction
Level of change	Incremental improvement for existing processes. Evolutionary	Radical change. Whole new process. Revolutionary
Employee involvement	Total involvement from everyone is essential (all individuals, work groups and some teams)	The BPR and implementation teams (not all employees are needed)
Participation	Bottom-up (built within culture)	Top-down (intensive)
Empowerment	Very important	Important in certain cases
Disadvantages	Difficult to get excited about and commit time to, since it involves many small improvements	Could discard good with bad High cost in most cases
Advantages	Appropriate when resources are at their lowest Provides consistent improvement over time	Erases old paradigms Produces quantum improvements
Typical scope	Narrow, within functions. Process improvement efforts are often within single teams or a few functions	Broad/cross-functional—a single BPR project sweeps across many functions or the whole organization
Risk	Moderate	High
Primary enabler	Statistical process control	Information technology
Payback period	Slow continuous small improvements	Quick dramatic payback

programme. BPR can be used to change the company radically, then TQM can be used to continuously improve the company in the years to come". Similar approaches have been suggested by Stalick and Andrews (1994), Zairi and Sinclair (1995), Wanner and Franceschi (1995) and Towers (1994), who recommended utilizing BPR then following this with a continuous improvement programme effectively to revolutionize and evolutionize.

Both approaches offer valid arguments, and will eventually lead to the same conclusion: an integrated model where both incremental and quantum improvements are possible within a continuous improvement environment. An integration of the best practices of TQM and BPR is the main building block of the model proposed in this paper. It builds on the strengths of both, and eliminates most of their individual weaknesses in the following way:

(1) TQM's stable culture, people participation and evolutionary nature will be used to eradicate or neutralize the stress and fear caused by BPR's revolutionary nature. The changes commensurate with BPR usually scare employees and in fact demotivate them (see Fig. 1). For true success in today's environment, management needs to consider employee participation, for which TQM creates the proper cultural milieu for change.

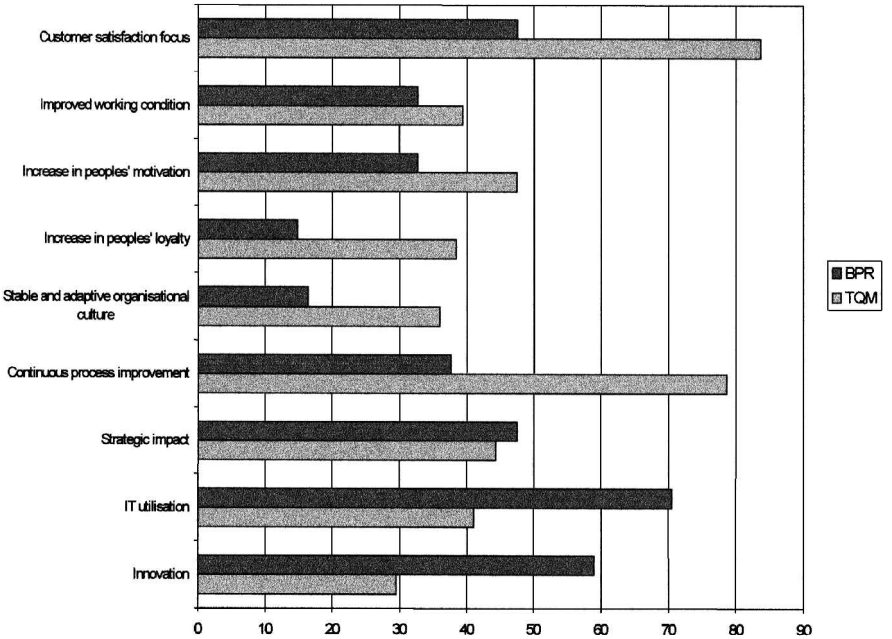

Figure 1. *Survey results on comparing TQM and BPR.*

Table 3. *Major strengths and weaknesses of TQM and BPR approaches*

	Strengths	Weaknesses
BPR	• Dramatic improvements (innovation) • Relatively short time frame (quick results) • Exploits IT capability • Cross-functional nature ensures 'whole process optimization' • Measurable progress and results	• Top-down approach which degenerates to command and control • Massive layoffs (usually) • Revolutionary nature of change can be very stressful and financially exhaustive • Narrow scope focusing on business processes. Usually resulted in neglecting or undermining the people dimensions, e.g. reward, measurement, management, individual beliefs and organizational culture • Operational process focus leads to reduced customer focus • Focus on 'time and cost' savings leads to short/medium-term benefits and lack of strategic impact
TQM	• Bottom-up participative approach • Broad scope covers all organizational aspects • Results in stable culture of continuous improvement • Evolutionary nature makes change easy to implement and reduces resistance	• Lack of strategic impact • Long time frame • May lead to suboptimization • Lack of innovativeness and radical change capability • Difficult to measure progress • Continuous incremental improvement mentality inhibits learning • Lack of IT focus or utilization

(2) The best practices for using IT will come from BPR methodology.
(3) Evidence (Burdett, 1994) shows that TQM tends not to pose the 'earthquake' question which, if answered correctly, entirely changes the way an organization does business; BPR can provide these 'quick strike' and innovative capabilities. TQM's main contribution would be a continuous change and improvement methodology, without which the solutions that BPR offers will bear little fruit (Raynor, 1993; Towers, 1994). Both kinds of change can and should be pursued even though their requirements are different (Huffman, 1997; Joiner, 1996).

The two approaches fail to address the common weaknesses in both TQM and BPR, which if left unaddressed become weaknesses of the integrated model, rendering it insufficient on its own for future performance excellence. These common weaknesses are:

(1) *Lack of strategic impact*: Not conducting strategic business planning to set the future direction of the company prior to starting the TQM initiative has caused major failures, In fact, the inherent lack of strategic integrity embodied within TQM is considered to be one of its main flaws. Similarly, in most cases BPR is undertaken to achieve medium-term cost and time savings rather than longer term strategic benefits. A greater focus on learning at the expense of the preoccupation with cost and time could increase the strategic impact of many BPR applications.
(2) *Lack of 'people' focus*: The survey conducted by the authors (1998) suggested that TQM offers slightly more people focus than BPR. However, the impact of change on people, and the way organizations are dealing with their people, is still considered a problem within both. TQM and BPR are process-oriented approaches where high performance is best secured by analysing the work which needs to be done to attain a predetermined result, and then designing the most efficient sequence or method of work activities to achieve it. Although both concepts emphasize people potential, our study so far has led to the conclusion that the failure of many recent large-scale efforts at corporate change can be traced directly to employee resistance, lack of support, lack of enthusiasm and generally lack of the right culture to support the framework.

Managing business productivity has essentially become synonymous with managing change effectively. To this end, companies must not only determine what to do and how to do it, they also need to be concerned with how employees will react to it. It is becoming increasingly clear that the engine for organizational development is not analysts, but managers and people who do the work. Without altering human knowledge, skill and behaviour, change in technology, processes and structures is unlikely to yield long-term benefits. In fact, the authors view 'human development' as a more suitable alternative to 'traditional' organizational development in a strategy for bringing about dramatic performance improvements.

The new work pattern is flexible working hours, knowledge workers, working from home, etc. So while these patterns emerge, organizations must change the way they deal with their people to achieve maximum benefit. The authors firmly believe that the success of an organization lies more in its intellectual capabilities than in physical assets. The capacity to manage human intellect, and to convert it into useful products and services, is fast becoming the executive skill of the age. The survey of leading UK organizations conducted by the authors asked senior managers to rank the most important business objectives on which organizations need to focus for performance excellence in the new millennium. The participants ranked customer satisfaction as the most important, directly followed by organizational people development, while cost reduction was ranked least important. Moreover, 93.1% of

the respondents believed that people were the most important resource of any business, and 88.5% regarded people management as a strategic issue. Thus, the model to be developed will be people oriented where high performance can be achieved only through people—only people learn, organizations and systems can and must adapt.

The proposed new model for performance excellence

Our experience has shown that successful individual approaches, or even sector-based approaches, are virtually non-existent as a pre-packaged approach. The survey conducted by the authors revealed that 81.9% of senior managers who responded believed that each organization was unique and must find its own path to success by continuously learning and customizing best practices. Thus, the model will be set and presented as a broad framework of generic ideas applicable to all organizations. It offers a base for each organization to study the best practices offered and tailor them to its own needs to achieve excellence. The framework is thus, by definition, open to any new techniques that target excellence. It is a recipe; a mixture of best practices from: BPR, TQM, current best-in class organizations, and a set of new ideas formulated and proposed. However, it is not suggested that such a model will be a silver bullet. Its effectiveness depends on thoroughly understanding the business and the people in it.

The aim of the model is to help organizations achieve performance excellence by ensuring a healthy balance between stability and continuous change. Stability comes from a bedrock of culture and values shared by organizational people, supported by a stable strategy, and systems that change only in a 'creation or reorientation' effort. Continuous change comes from continuous learning, and both aspects rely on fully committed and educated people. The objectives of the model are to:

- focus on delighting the customer;
- commit to continuous learning and improvement;
- emphasize organizational people as the main competitive advantage.

The model proposes turning organizational attention from cost-cutting and staff reduction to sales generation and employee well-being by proposing an equal emphasis on the three main pillars of organization development, i.e. process, people and information technology. The 'process' and 'IT' aspects, however, are continuously changing subject to daily improvements, and can easily be copied by competitors. Our survey revealed that 67.2% of senior managers who responded believed that the three organizational pillars should not enjoy equal emphasis, and ranked them as follows: people (70.5%), process (20.3%) and IT (9.2%). Thus, the model suggests that the only source of competitive advantage is the organization's people (96.7% of the respondents agreed that having trained, motivated and well-led organizational people would result in performance excellence).

Successful organizations in the next century will work on the edge of chaos (Peters, 1997) where they must be spontaneous, adaptive and alive. This in turn suggests the need for human and system flexibility and continuous learning within an organization held together by consistency of purpose, through a clear shared vision and open communication. The schematic diagram in Fig. 2 envisages such an arrangement as several concentric circles with the customer always at the focal point. Processes and people surround, and work for, that customer, and are held together by a clear set of organizational values and goals.

The main building blocks of the model, are as follows:

(1) *Customer obsession*: Past attempts to achieve and retain competitive advantage have

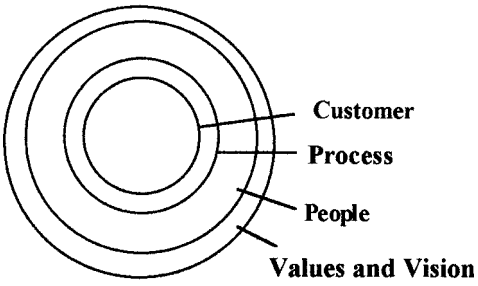

Figure 2. *The proposed model.*

largely looked internally within the organization for improvement. We now believe that the major source for competitive advantage will come from more outward orientation towards customers, and competition will focus on superior customer value delivery. The customer who should enjoy all the attention is the end user, as opposed to internal customers suggested by TQM.

(2) *Vision and values*: the substance that binds the organization together. This includes the strategic planning and management capability, and outstanding leadership. The model proposes integrating the latest techniques of strategic management and thinking within the planning, implementation and assessment stages. It is also suggested that the main competitive advantage for which organizations must aim is creating a 'self-renewal learning' culture, with the main competitive weapon being its people.

(3) *Business process excellence*: Process excellence combines the incremental improvements of TQM and the more revolutionary steps associated with BPR. The major enabler for the coming century will be IT. IT's potential cannot be left unrealized by any organization aiming to survive in the future. However, businesses must creatively integrate IT with human expertise to meet customer needs.

(4) *People*: Organizational people development should be the focal point as the source for future success. Workforce development is a top priority because it is the leverage of an association. The model aims to set out best practices in culture, participative management, team structure, reward, training and development, recruitment, motivation, commitment, communication and knowledge management.

Conclusions

This paper has presented an argument for integrating BPR and TQM. The individual strengths and weaknesses of each have been shown to complement each other. From the evidence presented, it was concluded that the way forward for organizational development is an integrated model, one that builds on the best practices of BPR and TQM and adds strategic planning and a stronger focus on people. Although 'processes' and 'IT' (the main focal areas in TQM and BPR, respectively) are crucial components for success, they are the easiest to perfect in an organization, and can easily be replicated by competitors, thus providing little competitive advantage. People and knowledge management are perceived to be the main sources for competitive advantage in the future.

The model, as it stands, is exploratory in nature. It proposes a body of ideas that form a new theory formulated with more emphasis on 'principles' than on 'financials', organizational

processes rather than final products, and intangible and socially complex resources rather than tangible physical resources. It will, however, be kept simple and governed only by common-sense systems where the right things take place unencumbered by bureaucratic or academic purism. The authors are currently engaged in a practical study to validate its basis and the proposed best practices to give it further credibility.

References

ALLENDER, H. (1994) Is reengineering compatible with total quality management?, *Industrial Engineering*, September, pp. 41–44.

BROWN, T. (1997) And that's no laughing matter, *Automotive & Transportation Interiors*, April, p. 72.

BURDETT, J. (1994) TQM and reengineering: the battle for the organization of tomorrow, *The TQM Magazine*, 6, pp. 7–13.

DAVENPORT, T. (1993) *Process Innovation—Reengineering Work through Information Technology* (Harvard Business School, Boston).

DICHTER, S., GAGNON, C. & ALEXANDER, A. (1993) Memo to a CEO: leading organisational, *The McKinsey Quarterly*, Spring, pp. 89–106.

ETTLIE, J. (1994) Reengineering meets quality, *Production*, 106, pp. 14–15.

GRANT, R., SHANI, R. & KRISHNAN, R. (1994) TQM's challenge to management theory and practices, *Sloan Management Review*, 35, pp. 25–35.

GUHA, S., KETTINGER, W. & TENG, J. (1993) Business process reengineering: building a comprehensive methodology, *Information Systems Management*, 10, pp. 13–22.

HAMMER, M. & CHAMPY, J. (1993) *Reengineering the Corporation—A Manifesto for Business Revolution* (London, Nicholas Brealey).

HARRISON, D. & PRATT, M. (1992) A methodology for reengineering businesses, *Planning Review*, 21, pp. 6–11.

HUFFMAN, J. (1997) The four re's of total improvement, *Quality Progress*, January, pp. 83–88.

JANSON, R. (1992) How reengineering transforms organisations to satisfy customers, *National Productivity Review*, 12, pp. 45–52.

JARRAR, F.Y. & ASPINWALL, E.M. (1998) UK based survey of leading organisations—best practices in people and knowledge management©, (unpublished report).

JENNINGS, D. (1996) BPR: A fast track to nowhere? *Baylor Business Review*, Fall, p. 6.

JOHANSSON, H., MCHUGH, P., PENDLEBURY, A. & WHEELER, W. (1993) *Business Process Reengineering* (London, John Wiley).

JOINER, B. (1996) Quality, innovation, and spontaneous democracy, *Quality Progress*, March, pp. 51–53.

KELADA, J. (1996) *Integrating Reengineering with Total Quality* (USA, ASQC).

KLIEN, M. (1994) Reengineering methodologies and tools, *Information Systems Management*, 11, pp. 30–35.

KRIETER, C. (1996) Total quality management versus business process reengineering: Are academicians teaching what businesses are practising?, *Production and Inventory Management Journal*, 37, pp. 71–75.

LEACH, L. (1996) TQM, reengineering, and the edge of chaos, *Quality Progress*, February, pp. 85–90.

LOVE, P. & GUNASEKARAN, A. (1997) Process BPR: a review of enablers, *International Journal of Production Economics*, 50, pp. 183–197.

MACCOBY, M. (1993) To create quality, first create the culture, *Research-Technology Management*, 36, pp. 49–51.

MACDONALD, J. (1995) *Understanding Business Process Reengineering in a Week* (London, Institute of Management).

MORTINSONS, M. & REVENAUGH, D. (1997) BPR is dead; long live BPR, *International Journal of Information Management*, 17, pp. 79–82.

O'CONNOR, P. (1994) Quality, reliability, and reengineering, *Quality and Reliability Engineering International*, 10, pp. 451–452.

PETERS, T. (1997) *The Circles of Innovation* (London, Clays).

RAYNOR, M. (1993) Reengineering: a powerful addition to the arsenal of continuous improvement, *CMA Magazine*, 67, p. 26.

SILVERMAN, L. & PROPST, A. (1996) Where will they fit in?, *Quality Progress*, July, pp. 33–34.

SMALLWOOD, R. (1996) Business process re-engineering, *Inform*, 10, p. 64.

STALICK, S. & ANDREWS, D. (1994) *Business Reengineering—The Survival Guide* (New Jersey, Yourdon Press).

SUTTER, R. (1996) Rethinking traditional quality assurance, *Quality Progress*, July, pp. 40–41.

TALWAR, R. (1993) Business reengineering—a strategy driven approach, *Long Range Planning*, 6, pp. 24–25.

TOWERS, S. (1994) *Business Process Reengineering—A Practical Handbook for the Executives* (London, Stanley Thomas).

WANNER, R. & FRANCESCHI, J. (1995) *Business Process Reengineering for Quality Improvement* (New York, Reliability Analysis Centre).

WEBB, J. (1995) *Quality Management and the Management of Quality—Making Quality Critical—New Perspectives on Organisational Change* (London, Routledge).

WRIGHT, B. (1995) Leveraging reengineering through TQM, *The TQM Magazine*, 7, pp. 50–53.

ZAIRI, M. & SINCLAIR, D. (1995) Business process reengineering and process improvement—a survey of current practice and future trends in integrated management, *Management Decision*, 33, pp. 3–16.