■ *Research Article*

Hoshin Kanri: A Tool for Strategic Policy Deployment

Charles Tennant* and Paul Roberts

Warwick Manufacturing Group, University of Warwick, UK

Methodologies for strategic management encompassing various techniques and models tend to set trends and become paradigms, as they are published and presented to the business community. This paper compares management by objectives (MbO) and business process reengineering (BPR) with the technique of Hoshin Kanri, which has been described as one of the core aspects of Japan's management system. Planning and deployment are critical elements of Hoshin Kanri, which imply that the process of developing targets, the assessment of the means to achieve the targets and the deployment of both are fundamental to successful implementation. The authors have adapted the Hoshin Kanri technique, for application at a major UK engineering company as a tool for *strategic policy deployment*. The benefits were found to include; integration of strategic objectives with tactical daily management, the application of the plan–do–check–act circle to business process management, parallel planning and execution methodology, companywide approach and improvements in communication. Copyright © 2001 John Wiley & Sons, Ltd.

INTRODUCTION

Various methodologies for strategic management have become paradigms, as they become adopted by the business community. Strategy requires the essential elements of integrating an organization's major goals, policies and tactics into a cohesive whole. Once the strategic vision and main policies have been identified, a model for implementation must be determined, which can be deployed as a technique for managing the business. The process of formulating strategy inevitably differs considerably among companies, due to the type and size of the business, its structure and its style of leadership. But generally company strategy can be segmented into the various elements of business, corporate, divisional and operations. The challenge for companies is to identify an appropriate technique, which upon implementation will cohesively integrate the vision and major goals, without alienating other strategies. In particular, the quality strategy can get left behind as an alternative strategy, which is perceived to be secondary to the harsh realities of short-term profits, productivity and cost-reduction actions. This paper describes how the approach known as Hoshin Kanri can be used as a tool for *strategic policy deployment*, provides comparisons with other management concepts, and presents the benefits.

Dr Charles Tennant was awarded an MSc degree in Manufacturing Systems Engineering in 1990 and an Engineering Doctorate in 1998 from the University of Warwick. His doctoral project was 'Developing a Company Wide Quality Strategy in the Automotive Business'. At Warwick Manufacturing Group he specializes in strategic quality management and new product introduction process applications.

Paul A. B. Roberts heads a team of specialists in quality and reliability who lecture on postgraduate programmes in the UK and six countries overseas. In addition to lecturing and supervising masters and doctoral students he provides consultancy support for partner companies of Warwick Manufacturing Group who are seeking improvements to new product introduction, manufacturing and service processes and research and development strategies.

*Correspondence to: Dr Charles Tennant, Warwick Manufacturing Group, School of Engineering, University of Warwick, Coventry CV4 7AL, UK. E-mail: charles.tennant@warwick.ac.uk

HOSHIN KANRI POLICY DEPLOYMENT

Definition of policy deployment

Policy deployment as a technique originated in Japan from the term *hoshin kanri* or *hoshin planning* (Akao, 1991). In fact, policy deployment is a common translation of Hoshin Kanri which in the true Japanese translation means *hoshin* (shining metal, compass, or pointing the direction) and *kanri* (management or control). It is also common to see alternative definitions such as policy management, policy control or management by policy. Hoshin Kanri is one of the pillars of Total Quality Management (TQM) in Japan, sometimes referred to as *the glue* which pulled TQM into a complete methodology rather than a collection of quality tools. Planning and deployment are critical elements of Hoshin Kanri, which imply that the process of developing targets, the development of means to achieve the targets and the deployment of both are crucial to the successful adoption of Hoshin Kanri.

A summary definition of Hoshin Kanri can be stated as the achievement of management's purpose by:

- Enhancement of the company's overall capability and banding together all capability of the company for improved performance.
- Deployment of a unified policy and plan, established as an annual management plan based on a company motto.
- Utilizing major resources for management (people, goods, money) and optimally bonding together quality, volume, cost and timing.

Origins of Hoshin Kanri

Hoshin Kanri originated in Japan in 1950 at a course on Quality Control sponsored by the Japan Association of Science and Technology, and was quickly established as the main criterion in the evaluation for the annual Deming prize. Initially many Japanese companies applied the technique in an *ad-hoc* manner by establishing and developing policies and plans as management items only. Then in 1962 the Bridgestone Tire Company developed Hoshin Kanri as a fundamental element of Total Quality Control (TQC) by adapting the technique as a companywide holistic long-term management strategy and policy. By the 1970s Hoshin Kanri had been widely accepted throughout Japanese industry and the philosophy started to spread to the West following the TQM explosion of the 1980s. In a study of Japanese companies

Hoshin Kanri was the only quality management tool, out of a common portfolio of various tools and techniques, known and used by every company interviewed (King, 1989a). The study concluded that Hoshin Kanri is one of the core aspects of Japan's management system. Companies that are cited as successful case studies of Hoshin Kanri include Hewlett-Packard, Proctor & Gamble and Florida Power and Light. In fact, in 1988 Kenzo Sasaoka the President of Yokagawa Hewlett-Packard, the Japanese division of HP said 'hoshin planning is the foundation of Hewlett-Packard's quality management effort'.

Management tasks and strategy

Yet policy deployment to managers in Western industry would probably mean a study of personnel policies or something similar. Therefore most people would probably guess (wrongly) that policy deployment is a system for making sure that every employee behaves according to company personnel policies. Professor Akao describes hoshin planning as 'The means by which both the overall control system and TQM are deployed'. A literal translation that would make sense to most people is 'target and means management'. This implies a significant focus on the means or process by which targets are reached. In summary, policy deployment is a system that orchestrates continuous improvement and breakthroughs. It picks the area that needs improvement, makes sure the right people get involved, and that the improvement is implemented. Kogure defined the role of TQC within strategic management by classifying management according to the status of the management strategy, as shown in Table 1 (Kogure, 1984).

Hoshin Kanri planning principles

Hoshin planning principles are formulated around companies knowing what their customers will want in five to ten years and understanding what needs to be done to meet and exceed all expectations. This requires a planning system that has integrated Deming's 'Plan–Do–Check–Act' language and activity based on clear long-term thinking. The measurement system needs to be realistic with a focus on process and results and identification of what's important. Groups should be aligned with decisions taken by people who have the necessary information. Planning should be integrated with daily activity underpinned by good vertical and cross-functional communication. Finally, everyone in the organization should be involved with planning at local levels to ensure a

Table 1   Management classifications

Type of management		Definition
Traditional	Drifting management	Premodern management style in which *ad hoc* measures are adopted as problems arise
Traditional	Tactical management	Management system under which there is systematic management with tactical measures
Strategic	Quasi-strategic management	Management system where there is an awareness of need to adopt to change but little experience
Strategic	Strategic management	Management system in which changes in the environment are foreseen and actions taken

significant buy-in to the overall process. Figure 1 shows a model of the Hoshin planning methodology (King, 1989b).

The major elements of the model can be summarized as:

● *Five-year vision* — This should include a draft plan by the president and executive group. This is normally an improvement plan based on internal and external obstacles, and revision based on input from all managers on the draft plan. This enables top management to develop a revised vision that they know will produce desired action.

● *The one-year plan* — This involves the selection of activities based on feasibility and likelihood of achieving desired results. Ideas are generated from the five-year vision, the environment and ideas based on last year's performance. The tentative plans are rated against a selection of criteria and a decision made on the best action plans.

● *Deployment to departments* — This includes the selection of optimum targets and means. It focuses on the identification of key implementation items and a consideration of how they can systematically accomplish the plan. The individual plans developed are evaluated using the criteria that were used for the one-year plans.

● *Detailed implementation* — This is the implementation of the deployment plans. The major focus is on contingency planning. The steps to accomplish the tasks are identified and arranged in order. Things that could go wrong at each stage are listed and appropriate countermeasures selected. The aim here is to achieve a level of self-diagnosis, self-correction and visual presentation of action.

● *Monthly diagnosis* — This is the analysis of things that helped or hindered progress and the activities to benefit from this learning. It focuses attention on the process rather than the target and the root cause rather than the symptoms. Management problems are identified and corrective actions are systematically developed and implemented.

● *President's annual diagnosis* — This is the review of progress to develop activities which will continue to help each manager function at their full potential. The president's audit focuses on numerical targets, but the major focus is on the process that underlies the results. The job of the president is to make sure that management in each sector of the organization is capable. The annual audit provides that information in summary and in detail.
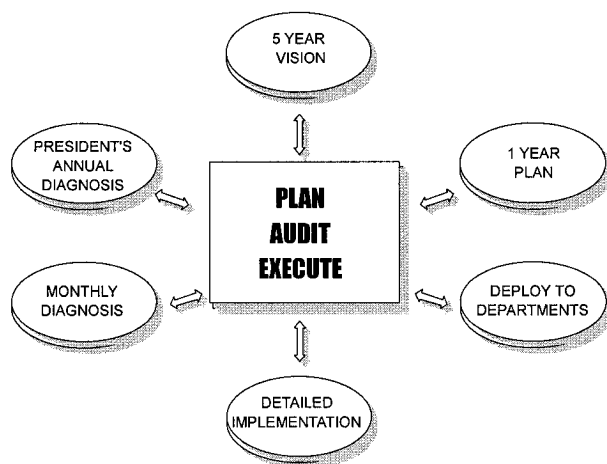
A series of ten steps that must be sequenced through to effectively implement Hoshin Kanri are shown below.

(1) Establish a company motto, quality policy and plan.
(2) Devise long- and medium-term management strategies.
(3) Collect and analyse the information.
(4) Plan the target and means.
(5) Set control items and prepare a control items list.

Figure 1   The Hoshin planning system

(6) Deploy the policy.
(7) Deploy the control items.
(8) Implement the policy plan.
(9) Check the results of the implementation.
(10) Prepare status report for implementing Hoshin Kanri.

This is classical Japanese application of a management concept or technique, which is thought through, disciplined and relatively simple in context. As usual, it is a prerequisite to determine and communicate a company vision and strategy, prior to delving into the details of the technique. In the West it is common to see organizations picking up a new management concept or technique, or rushing headlong into detailed training and implementation, without integrating it with the company strategy. The ten steps of Hoshin Kanri should ideally be implemented at corporate level, and cascaded across to divisions, then down through the individual operations. However, it is feasible that an autonomous division could implement Hoshin Kanri throughout, without the prior adoption of its parent organization. This may be of particular relevance in the merger mania culture of the late 1990s, where a company may take over another that is already well advanced in policy deployment.

Cross-functional management

Cross-functional management (CFM) is necessary for successful implementation of Hoshin Kanri along with a concept known as 'catchball'. CFM requires a refinement in the organization of management relationships to allow continual checking of target and means throughout the Hoshin implementation timescale. Catchball is a term derived from a children's ballgame, where instead of a ball, an idea is thrown around from person to person. It is a critical element that requires continuous communication to ensure the development of appropriate targets and means, and their deployment at all levels in the organiza-

tion. Processes must be developed to ensure feedback in multi-directional horizons, which requires a company commitment to employee involvement and continuous improvement. This approach builds buy-in through employee involvement in the goal-setting process and consensus with the team to ensure appropriate levels for goals and targets (Watson, 1993).

Comparisons of Hoshin Kanri

Hoshin Kanri differs from other techniques of business renewal due to its bottom-up nature, and ability to enable managers to measure the right things building a basis for evaluation, as well as quick regular reviews. A comparison of Hoshin to two other well-known concepts: Management by Objectives (MbO) and Business Process Reengineering (BPR), produces a number of contrasts as shown in Table 2.

The positive aspects of Hoshin centre around the long-term vision to achieve improvement, through a significant focus on processes which involve the setting of challenging yet realistic targets for deployment, coupled with a desire to obtain tangible bottom-up and cross-functional feedback. The ideology here is 'win–win'; that is, the goal of every employee is to contribute to the setting and achieving of targets, which contribute to the direction of the business. Contrast this with the MbO method which tends to focus on achieving top-down targets in the short term, which are often linked to incentive payments as a motivational tool. Fear of failure in the eventual job evaluation discussions can often lead to *ad-hoc* implementation and troubleshooting. The BPR philosophy is similar to Hoshin, in that it encourages setting of a radical vision for process improvement by focusing on performance, growth and renewal. BPR also encourages the communication of tangible messages via multiple channels to remove confusion among employees involved in major reemgineering programmes. However, the number one source of difficulties

Table 2 Comparisons of Hoshin planning

Element	Hoshin	MbO	BPR
Vision	Long term	Short term	Radical
Focus	Processes	Targets	Performance
Implementation	Prioritize	Troubleshoot	Make it work
Measures	Realistic	Incentives	Growth
Review	Improvement	Failure	Renewal
Communication	Deployment of targets	Job evaluation	Tangible messages
Feedback	Top-down and bottom-up	Top-down	Multiple channels

generally experienced by companies struggling to implement reengineering occurs within the area of coping with the reactions of the people in the organization to the enormity of the change.

Industrial application of Hoshin Kanri

As previously discussed, Hoshin Kanri replaced Management By Objectives (which was popular in Japan in the 1960s) because it was seen to be more flexible in dealing with quickly changing economic situations. Industrial applications of Hoshin Kanri have tended to be focused on Japanese companies such as Yokagawa Hewlett-Packard (Johannson, 1996), Komatsu and Toyota (Dale, 1993). Examples of Hoshin Kanri application within Western companies revealed a handful of practitioners within the USA. These included NovAtel (Yong, 1994), Xerox (Watson, 1994), Hewlett-Packard, Texas Instruments (Stratton, 1997) and Intel (Zurn, 1997). Additional published work identified tended to be in the form of theoretical descriptions of Hoshin Kanri, and observations on its general lack of application in the West. One study reported that whilst many companies were struggling to achieve objectives through their TQM efforts, stating that only 36% of respondents reported that TQM was having a significant impact on their ability to achieve objectives (Hacker and Kleiner, 1997). Their observation of anecdotal data was that 'successful companies in Japan and North America are applying policy deployment to operationalize TQ', yet whilst Japanese companies have been refining Hoshin Kanri for nearly 25 years, 'policy deployment in the United States though remains in its infancy'. A theoretical application of policy deployment as a model for implementing TQM training has also been suggested (Farina, 1992). Whilst common pitfalls associated with policy deployment, including failure to integrate it with TQM, no connection with process management and inadequate cross-functional management have been reported (Munshi, 1993).

HOSHIN KANRI CASE STUDY

Background

In the early 1990s a major UK engineering company was facing the classic dilemma of how to reinforce a TQM programme from the late 1980s, and develop a strategy for ongoing business improvement. The TQM programme had delivered the standard elements of creating an

executive quality council, companwide training programme, diagnostic quality audit, improved communications, and various quality initiatives. However, there was still a need to develop a strategic quality plan to keep momentum and which could form the basis of a companywide measurement system incorporating a system of regular reviews. The company vision and strategic objectives had been defined during the TQM programme, along with the establishment of a number of quality related initiatives. Following the definition of the key business processes a model for strategic policy deployment was developed; which related the vision, strategic objectives, business processes and management action plans into one cohesive big picture as shown in Figure 2.

Policy deployment model

Key quality improvement milestones for each of the key business processes were agreed by consensus amongst 25% of the management population across the company by application of a group judgement technique known as Delphi (Rohrbagh, 1979). The milestones represented actions or events stretching over a five-year horizon. Figure 3 shows the policy deployment model used to represent a structure for delivery. This was based on the development of functional and business unit plans, operational goals and tracking progress using appropriate measures. The measures were developed and monitored by stakeholder groups for each of the key company processes and regular progress reports were made to the executive quality council. The main emphasis was to achieve a culture of 'Kaizen', by orientating the organization and its employees towards the five-year plan through deployment of one-year plans into process-based results objectives (Imai, 1986). A novel example of deployment down to business unit/functional level is shown in the example in Figure 4. This shows the 'lighthouse' process used to set and communicate the competitive benchmarks and performance goals for the following year. The milestone measures were based on self-diagnosis by the business units and individual departments, who recorded their progress against pre-agreed performance limits for each milestone. The progress was then summed to provide a companywide status. This effectively allowed the executive quality council to make a number of significant observations: identify particular areas of the business with performance shortfalls, review key business processes which were not improving, and communicate examples of success. Also, individual
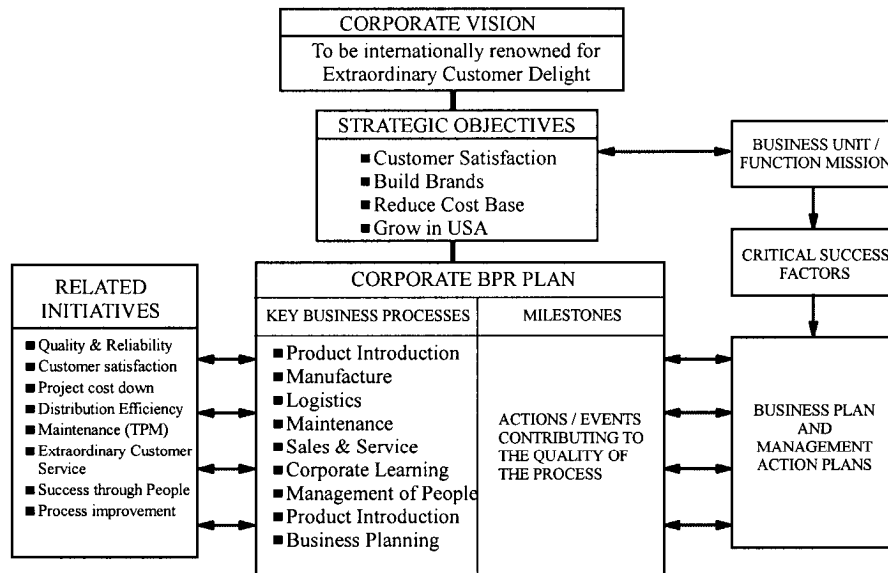
Figure 2   Strategic policy deployment

employees had the ability to track their particular annual objectives back through the departmental business plan, to the company milestone plan to associate contribution and involvement. Figure 5 shows an example of the Hoshin Kanri monthly review report format.

Culture change through processes

Deployment of the key business milestones down to business unit plans and operational goals was targeted to change the culture of planning and measurement in the business. In this way it was possible to motivate functions and associated team members to change their principal work process. If we take the case of the design engineer, the scope of job role and responsibility can be modified and enhanced to both meet the operational needs of the business and achieve radical personal development for the individual in the form of new developed competencies. This can only be realistically achieved by setting new and different goals and targets in the way that they and ultimately
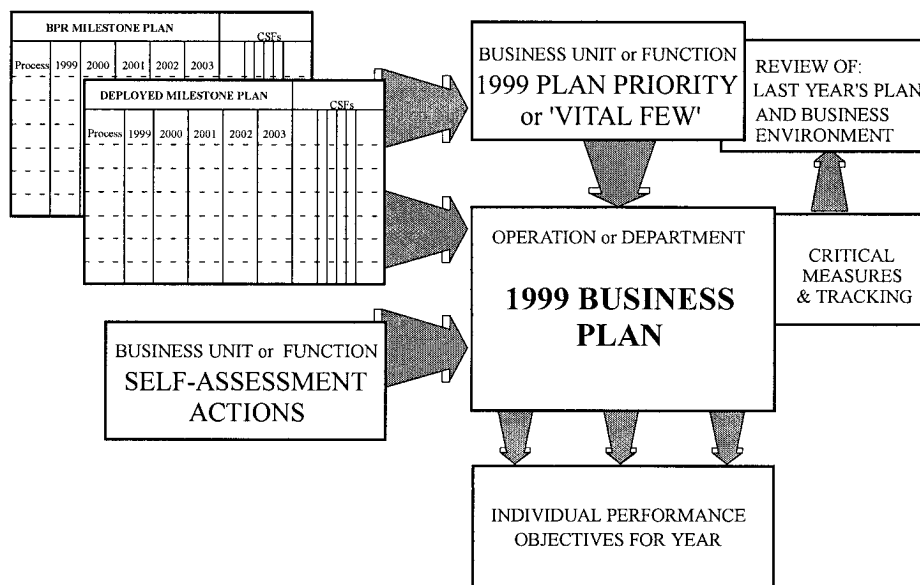
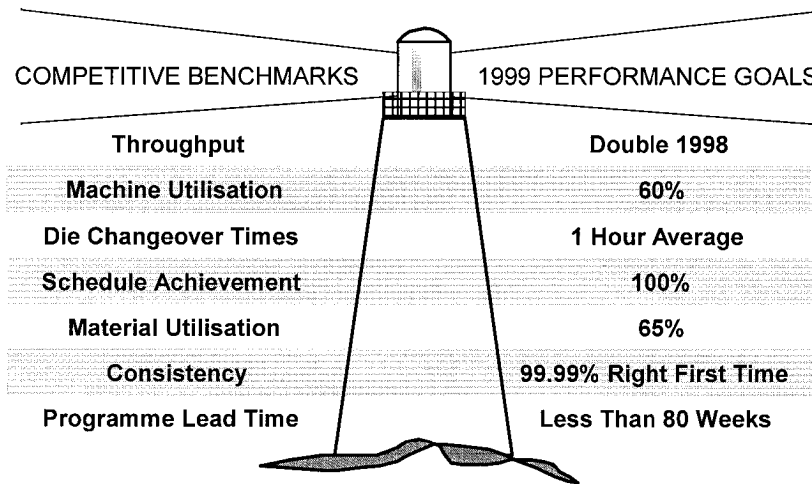

Figure 3   Policy deployment model

COMPETITIVE BENCHMARKS | 1999 PERFORMANCE GOALS

Throughput	Double 1998
Machine Utilisation	60%
Die Changeover Times	1 Hour Average
Schedule Achievement	100%
Material Utilisation	65%
Consistency	99.99% Right First Time
Programme Lead Time	Less Than 80 Weeks

Figure 4   Target setting and deployment

their teams are measured. Table 3 shows the culture change achieved through the focus on processes within the policy deployment implementation.

The benefits of Hoshin Kanri

The benefits of Hoshin Kanri as a tool for strategic policy deployment compared with conventional planning systems include; integration of strategic objectives with tactical daily management, the application of the plan–do–check–act circle to business process management, parallel planning and execution methodology, company wide approach, improvements in communication, increased consensus and buy-in to goal setting and cross-functional-management integration.

CONCLUSIONS

(1) Methodologies for strategic and operational business management encompassing various techniques and models tend to set trends and become paradigms, as they are published and presented to the business community.

(2) Policy deployment is an appropriate technique for integrating strategy and operations as a

MILESTONE	Status	Limits	Department				Actions
New Product Introduction			A	B	C	D	
1. Identify 70% of E.C. prior S/O	●	○ < 50% ● > 70%	●	●	●	●	Increase limits to 75%
2. Application of F.M.E.C.A.	○	○ < 70% ● > 90%	○	○	○	○	Train all engineers
3. Achieve upper quarter JDP	○	○ < Ave ● = Top3	○	○	○	○	Identify root causes
4. Cost targeting in place	●	○ = None ● = Done	●	●	●	●	Communicate savings
5. Parts off tools & process	●	○ < 80% ● > 95%	●	●	●	●	Increase limits to 98%
6. Quality audit demerits (40)	○	○ > 60 ● < 40	○	○	○	○	Fit and finish review

Figure 5   Hoshin Kanri monthly reviews

Table 3   Culture change through processes

'Old'	Business process	'New'
Product 'push'	New product intro	Customer-driven
'Don't stop the track'	Manufacturing	Cell manufacturing
Breakdown	Maintenance	Total productive maint
Scale/lowest cost	Logistics — in	Supply partnership
Wholesales 'push'	Logistics — out	Distribution efficiency
Conquest selling	Sales & service	Customer retention
Survival of the fittest	Corporate learning	Learning company
Strong management	Management of people	Leadership
Top 10 problems	Product improvement	Root cause elimination
Corporate planning	Business planning	Policy deployment/Strategic thinking

methodology for leading and managing the business.

(3) The policy deployment model presented is based on an adaptation of a Japanese technique called Hoshin Kanri and applied in a large Western engineering company.

(4) The methodology developed for policy deployment was communicated across the business which resulted in the creation of milestones for each of the key business processes, which were subsequently deployed to individual business units, departments and individual annual performance objectives.

(5) Hoshin Kanri can be adapted for application in a large Western company across the organizations of engineering, sales and marketing, finance and manufacturing.

ACKNOWLEDGEMENTS

REFERENCES

Akao Y. 1991. *Hoshin Kanri*. Productivity Press: New York.

Dale BG. 1993. The key features of Japanese total quality control. *Quality And Reliability Engineering International* (9): 169–178.

Farina JE. 1992. Implementing TQM training through policy deployment. *International Industrial Engineering Conference Proceedings*. Institute Of Industrial Engineers.

Hacker ME, Kleiner BM. 1997. Policy deployment — the missing link in operationalizing the total quality management philosophy. *ASQC 50th Quality Congress Transactions*.

Imai M. 1986. *Kaizen — The Key to Japan's Competitive Success*. McGraw-Hill: New York.

Johannsen CG. 1996. Strategic issues in quality management: theoretical considerations. *Journal of Information Science* **22**:(3).

King RE. 1989a. *Hoshin Planning The Developmental Approach*. GOAL/QPC.

King RE. 1989b. Hoshin planning, the foundation of total quality management. *ASQC 43rd Quality Congress Transactions*.

Kogure M. 1984. *TQC and Strategic Management*. Nikka Giren: Tokyo.

Munshi KF. 1993. Policy deployment: a key to long term TQM success. *ASQC 47th Quality Congress Transactions*.

Rohrbagh J. 1979. Improving the quality of group judgement: social judgement analysis and the Delphi technique. *Organisational Behaviour and Human Performance* (24): 73–92.

Stratton B. 1997. TI has eye on alignment. *Quality Progress*.

Tennant C. 1998. *Deployment of a Company Wide Quality Strategy in the Automotive Business*. Executive Summary, Engineering Doctorate (EngD), University of Warwick, UK.

Watson GH. 1993. *Strategic Benchmarking*. John Wiley: New York.

Watson GH. 1994. Managing for results — the Xerox approach to policy deployment. *ASQC 48th Quality Congress Transactions*.

Yong HG. 1994. Enhancing performance using policy deployment. *ASQC 48th Quality Congress Transactions*.

Zurn JT. 1997. Linked policy deployment. *ASQC 50th Quality Congress Transactions*.