



Hoshin Kanri: Implementing the Catchball Process

Charles Tennant and Paul Roberts

Involving employees in strategy deployment is an active topic of strategic management, but has been difficult to achieve in western companies. The methodology known as Hoshin Kanri has proved an effective strategy deployment process in Japan where it has been extensively applied for integrating strategy and Total Quality Management (TQM), but its adoption in the West has been low, except for a few innovatory companies. The application of Hoshin Kanri relies on a process called "*catchball*" to gain consensus on the deployment of Hoshin targets and measures in a team environment. This paper presents a process design based on an adaptation of the Delphi technique for the effective implementation of catchball, to reinforce the link between the corporate strategy and annual planning cycle. The catchball process described was implemented at the Rover Group, a UK-based automotive company, to develop the company's quality strategy based on Hoshin Kanri principles. © 2001 Elsevier Science Ltd. All rights reserved.

Introduction

One of the current active topics in strategic management is the involvement of employees in the strategy deployment stages of the process, particularly in western companies, which have struggled with the concept of relating top management goals to the daily work of employees. It is preferable if the top management goals are integrated through the formulation and development of policies and, by the involvement of a wider group of managers through consensus. This should enable a higher level of buy-in to the goals, improved understanding of the enablers to achieving them, and the motivation to communicate them into practical daily work processes. However, this has proved to be a difficult process for western companies.

Many Japanese companies have already established an effective strategy deployment process, known as Hoshin Kanri, which attempts to integrate top management goals into daily oper-

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ations.¹ This technique was originally developed in Japan from the concept of *Management by Objectives*, and has been the subject of many English translations, which although similar, can cause confusion in interpretation. The various translations include "policy deployment, policy control and management by policy". This paper does not intend to provide a full description of Hoshin Kanri other than a brief overview. Instead, it explores areas of difficulty for implementing the process in western companies. A particularly difficult phase of Hoshin Kanri is in the implementation of a process known as "catchball", which is used to gain consensus on the deployment of Hoshin targets and measures, in a team environment known as "cross-functional management". The difficulties are explored, and a process is presented that was developed for and applied at the Rover Group, a UK-based automotive company, to develop the company's quality strategy based on Hoshin Kanri principles.

Strategic planning issues

Corporate strategy is concerned with the direction a company takes over time and with the use of its available resources; where the best strategy for a company depends on current levels of performance, particular strengths and weaknesses, and the opportunities or threats in its particular environment. Some ground rules for strategic planning are summarised as follows.²

- Targets must be challenging but realistic so as to discourage complacency;
- Input from management must be encouraged;
- Effective planning normally involves iteration;
- Take a balanced and realistic view;
- Commit sufficient time and thought to the process.

It is preferable that the line management who is to drive the planning process also helps evolve it, with a stronger focus on the most important issues, and a greater emphasis on implementation. Also, it is necessary to determine whether the strategic planning process will trim ambitions to match the available resources, or to leverage resources to reach seemingly unattainable goals, which has been previously termed *Strategic Intent*.³ The ascendance of Japanese companies has been seen as evidence that western techniques for strategic planning have often failed, where the former have tended to focus on quality, productivity and teamwork rather than complex planning techniques.⁴ An effective strategic planning process is an important enabler for performance improvement in dynamic and complex industries, but performance can be even higher when managers are authorised to make autonomous decisions and learn from their actions.⁵

A particular approach for enabling the strategic planning process has been the adoption of *Strategic Business Process Management*, which requires the organisation to be conceptualised as a series of business processes.⁶ Yet a fundamental question is what should organisations do once they have developed a process-based architecture to ensure that the business process review does not merely lead to a list of several dozen processes with little further development? The crucial point is not the basic questions relating to strategic planning, but rather the techniques and organisational approaches which companies have traditionally used to answer them. Therefore, to be effective, strategic planning must use a process, which is not separated from implementation, and involves a series of regular iterative reviews.

Hoshin Kanri

Overview

Hoshin Kanri is an organising framework for strategic management, which is concerned with the following four primary tasks.⁷

- To provide a focus on corporate direction by setting, annually, a few strategic priorities;
- To align the strategic priorities with local plans and programmes;
- To integrate the strategic priorities with daily management;
- To provide a structured review of the progress of the strategic priorities.

Planning and deployment are critical elements of Hoshin Kanri, which imply that the process of determining targets, the development of means to achieve the targets, and the deployment of both are crucial for success. Hoshin planning principles are formulated around companies knowing what their customers will want in five to ten years' time, and understanding what needs to be done to meet and exceed all expectations. The measurement system needs to be realistic, with a focus on process and results and identification of what is 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 organisation should be involved with planning at local levels to ensure a significant buy-in to the overall process. Figure 1 shows a model of the Hoshin planning system, which can be compared with the Shewhart "Plan-Do-Check-Act" (PDCA) continuous improvement cycle. A particularly crucial element within the Hoshin system is the President's annual diagnosis, which relies on a summary report of the progress made, leading to either a reconfirmation or refinement of the five-year vision and vital few hoshins or goals.

Group which are seeking improvements to new product introduction, manufacturing and service processes and research and development strategies.

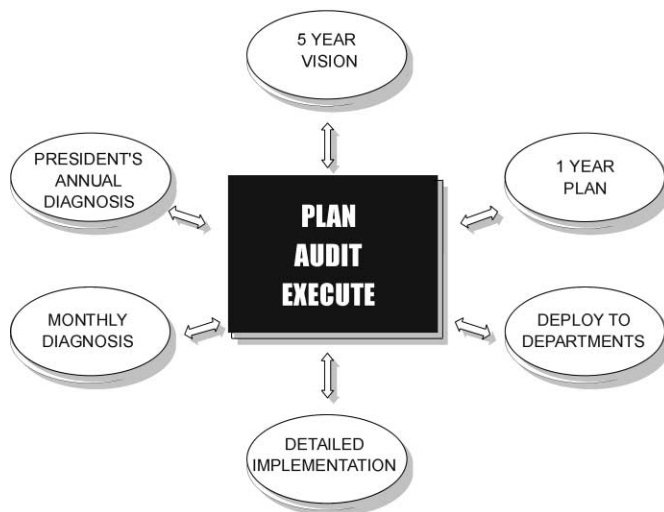


Figure 1. The Hoshin planning system

Adaptations

There have been a number of adaptations of Hoshin Kanri to align the technique to western thinking and management approaches. Examples include: *Policy Deployment* at AT&T, *Managing for Results* at Xerox, *Goal Deployment* at Exxon Chemical, *Policy Management* at Florida Power and Light, *Hoshin Planning* at Hewlett-Packard and *Hoshin Kanri* at Digital Equipment and the *FAIR* model developed by Witcher et al.⁸ FAIR is an acronym, which relates to the PDCA cycle: Focus (act), Alignment (plan), Integration (do) and Responsiveness (check).

One of the early innovators in policy deployment application in the UK was Rover Group with the development of their five-year quality strategy through policy deployment.⁹ The *Policy Deployment* project at Rover progressed through further iterations and refinements as an adaptation of Hoshin Kanri.¹⁰ This paper will expand upon the catchball process developed for implementation at Rover to ensure effective consensus with the deployment of top management goals into working processes, as operated daily by employees.

Research implications

Areas of difficulty

Although Hoshin Kanri has been extensively used in Japan for more than 30 years as a methodology for integrating strategy and *Total Quality Management* (TQM), its adoption in the West has been low, except in a number of innovative companies. This may be due to confusion with the translation, or merely because the approach incorporates a number of difficult phases which require mastery. This is further compounded by the general lack of reference to Hoshin Kanri in quality management textbooks, other than superficial descriptions. Research in the UK has identified a particularly difficult nature of Hoshin Kanri implemen-

tation concerning “the links between corporate strategy and annual planning”, where a process known as “catchball”, is recommended to provide an effective link.¹¹ The research recommended developing methodologies to achieve a high degree of co-ordination of Hoshin activities, with either normal daily work processes, or specific projects. Therefore, the research question addressed within this paper is “how can the consensus process known as catchball, be effectively implemented in western companies to facilitate the Hoshin Kanri method, to translate top management goals into daily working?”

Feedback into corporate strategy

Figure 2 shows the aforementioned FAIR model of Hoshin Kanri aligned to the PDCA cycle. The Hoshin Kanri technique suggests the application of catchball, to reinforce the link between corporate strategy and annual planning. In the FAIR model, this occurs at the intersection between the “focus” (act) and “alignment” (plan) phases. Previous research has identified that a weakness in communication can often occur at this link, and that it is not clear how feedback generated from the Hoshin cycle assists the “focus” phase in up-dating corporate strategy.¹¹ Furthermore, it is suggested that in the UK, the absence of senior executive involvement from “a corporate centre” actively participating in annual audits, compounds the problems of aligning the corporate strategy with operational and quality issues.

Catchball process

The catchball process is necessary for successful implementation of Hoshin Kanri in an environment of cross-functional management.¹² Catchball is a term derived from a children’s ball game, but 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 organisation. Processes must be developed to ensure feedback in multi-directional horizons, which requires a company commitment to

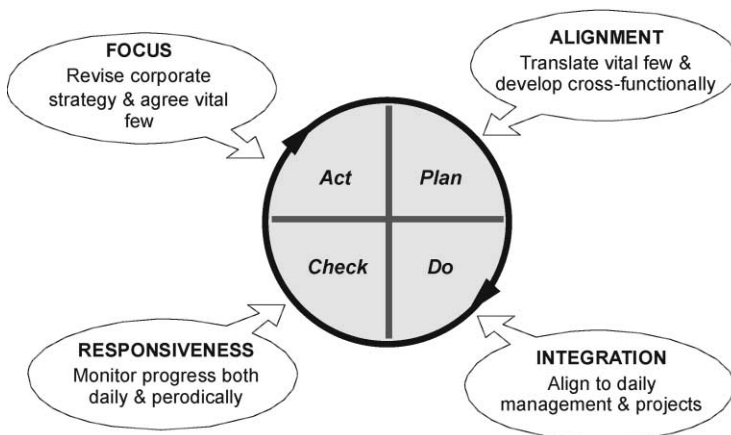


Figure 2. The “FAIR” model of Hoshin Kanri

*Having the right
balance of
management style
alone is not enough*

employee involvement and continuous improvement. Cross-functional management also relies on a refinement in the organisation of management relationships, to allow continual checking of target and means throughout the Hoshin implementation timescale. It is this iterative process of discussing and debating plans and targets at each level until consensus is reached, along with methods for meeting the goal, which ensures that the total organisation is committed to the same goals.¹³ This paper will address these fundamental research issues with the development of a unique process, which has been designed to solve problems associated with the implementation of catchball within the Hoshin Kanri technique. In particular, it will present the concept of involving managers in the formulation of policies by consensus, to effect the translation of top management goals into daily working processes.

Catchball process design

Management style

When deciding on an appropriate process design for the consensus-building element, known as catchball within Hoshin Kanri, it is necessary to consider the prevailing management style within the organisation.¹⁴ It is suggested that the criteria by which judgements are made, either by groups or individuals, are based on the notion of shared mutual concepts and missions. This implies a management style that is based on creative, flexible and responsive principles. However, having the right balance of management style alone is not enough. What is required is a process for sharing ideas based on originality, coupled with the benefits of group analysis and agreement whether that is in the setting of Hoshin targets, or reviewing the achievement of targets for incorporating within the next corporate strategy cycle.

Consensus building techniques

The research identified a number of consensus-building techniques for consideration within the implementation of the catchball process within Hoshin Kanri. These were reviewed in order to optimise the development of the catchball process at Rover.

Ringi system

A particular consensus-building method known as “*the ringi system of decision-making*” is reputedly employed by more than 80 per cent of all Japanese industries.¹⁵ “*Rin*” means submitting a proposal to one’s superior and receiving their approval, and “*gi*” means deliberations and decisions. The ringi system is characterised as a bottom-up method of decision-making, which has to have unanimous approval of everyone in the system. Ringi allows individuals to communicate a level of dissatisfaction without actually halting the course of the decision. This approach is more often applied in the decision-making processes within operations rather than in the area of strategy. Therefore it could be adapted

in the West to provide a level of integration within Hoshin Kanri, between the development of the strategic goals and the translation of these into real operational daily plans. The ringi approach attempts to prevent the phenomenon known as “*groupthink*”, which leads to a deterioration of mental efficiency, reality testing, and moral judgement, resulting from in-group pressures and an irrational tendency to follow instructions without question.¹⁶ The ringi system has many similarities to the process of catchball, and in fact reinforces the potential value of Hoshin Kanri.

Social judgement

Social judgement theory assumes that an individual draws conclusions about unknown quantities or qualities on the basis of available information, which can be applied as a concept for achieving consensus in the development of strategic goals and policies.¹⁷ Individuals may disagree in judgement, at least in part because of the importance that each assigns to the available information. The earliest studies of social judgement compared the accuracy of an individual’s aggregated judgement, with a statistically aggregated judgement of several individuals. These were frequently called “*statitized*” groups because the individual members never met together. The most common aggregation rule was a simple arithmetic mean, and the findings produced a consistent pattern. Where the tasks had great intentional depth, the average “*statitized*” group judgements were not shown to be significantly better than the average of the individuals treated separately. However, on tasks involving little intentional depth, the opposite is true. The issue to be considered is what optimal sample size from the population is required to achieve consensus? This was carefully considered within the approach taken at Rover.

Delphi technique

The Delphi technique was originally developed by a US defence research project in the 1950s, and has since been applied in the Far East and Europe, primarily to develop long-range technological forecasts.¹⁸ The Delphi technique is defined as: “*A method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem*”. To accomplish this “*structured communication*” feedback must be provided of individual contributions of information and knowledge, some assessment of the group judgement or view, some opportunity for individuals to revise views and some degree of anonymity for the individual responses. The Delphi technique tends to be applied where there is a recognised need to structure a group communication process in order to obtain a useful result, as in the following examples:

- *The problem can benefit from subjective judgements on a collective basis;*
- *The individuals needed to contribute may represent diverse backgrounds;*

- *More individuals are needed than can effectively interact in a face-to-face exchange;*
- *Time and cost make frequent group meetings infeasible;*
- *The need to avoid dominance by quantity or strength of personality.*

Catchball aims to involve people as team members rather than individuals

The Delphi technique requires a small monitor team who designs a questionnaire that is sent to a larger respondent group. After the questionnaire is returned the monitor team summarises the results and using these develops a new questionnaire for the respondent group. The respondent group is usually given at least one opportunity to re-evaluate its original answers, based upon an examination of the group response. An alternative approach is often called a “*Delphi Conference*” which involves the use of a computer to compile the group results in real-time. This approach has the advantage of eliminating the delay caused at the summary stage but does require that the characteristics of the communication be well defined before the Delphi is undertaken. Some common reasons for the failure of a Delphi include: poor selection of respondent group, too much use of jargon, monitor teams imposing views and preconceptions, not allowing for the contribution of other perspectives, poor techniques of summarising, and not exploring disagreements so that discouraged dissenters drop out and artificial consensus is generated. It is the task of the Delphi designer to minimise these problems and balance the communication goals within the context of the objective of the particular Delphi and the nature of the participants. The technique aims to develop consensus by avoiding dominance by quantity or strength of personality, through questionnaire surveys analysed by a monitoring team. However, employing statistised groups which do not meet during a Delphi survey can lead to aggregated judgement, which does not adequately take account of the best available judgement from the most competent respondent, as demonstrated by the concept of social judgement. Arriving at a balanced design for the communication structure is still very much an art.

Adaptation of Delphi

The key differences between social judgement and the Delphi technique are shown in Table 1. The significant differences are concerned with the absence of the individual respondents within a Delphi survey actually meeting to exchange views and develop consensus.

The catchball process aims to involve people as team members, rather than individuals, based on the premise that groups perform at a level generally better than the competence of their average members, but rarely as well as their most proficient members. This team-based approach is usually achieved by application of the problem-solving tools, often associated with TQM. Therefore, the consensus-building elements of the catchball process design need to be carefully considered.

Table 1. Delphi and social judgement techniques

Delphi technique	Social judgement
Absence of discussion among group members	Presence of discussion among group members
Focus on the evaluation and feedback of outcomes	Focus on the information exchange about the logic of judgement
Carefully restricted exchange of information	Face-to-face encounters
Remote and private opinion achieved through a series of structured questionnaires	Involves use of discussion groups

The catchball process developed for Rover was based on an adaptation of the Delphi technique to allow elements of group interaction. Although it is clear that the effective implementation of catchball within a Hoshin Kanri application is not absolutely necessary, it was felt that it would improve the rigour of generating consensus at Rover. The application of the Delphi technique within the strategy deployment process at Rover was innovative, as research of UK companies has concluded that the Delphi technique only ranked 16th out of 23 tools and techniques often used in strategic analysis.¹⁹

The catchball process at Rover group

Justification for single case study

The single case study example was selected because the principal author was employed at Rover from 1985 to 1999, and was actively involved in the development and implementation of the catchball process. The work described in this paper represents project work within the portfolio of the Engineering Doctorate published by the principal author in 1998.²⁰ The co-author was initially employed at the Warwick Manufacturing Group in 1990, to facilitate the introduction of quality and reliability tools and methodologies at Rover and acted as academic supervisor to the Engineering Doctorate. Although the narrow scope of single case studies imposes limitations, in this case this is more than offset by the depth of detail achieved, and the suitability of the research context within UK manufacturing industry.

Rover Group

The UK-based automotive company Rover Group employing around 40,000 on four manufacturing sites, one engineering centre and a head office administration, had been through a quality transformation by 1994 when it was acquired by BMW of Germany. A TQM programme had been delivered in the late

A major process review was conducted to establish a framework for the quality strategy

1980s, but by the early 1990s was demonstrating signs of slow down. The senior management team decided to develop a long-range quality strategy which could be used to direct the quality efforts and measurement systems robustly. The process of creating the *Rover Group Quality Strategy* was initiated by the Quality Strategy Director (Dr Joe Cullen) in 1990, who appointed the principal author as Quality Strategy Manager (Dr Charles Tennant), the co-author (Paul Roberts) being actively involved as a process facilitator. It was decided to develop the quality strategy based on the principles of Hoshin Kanri, in order to deploy the company's vision and four strategic objectives, down to working level processes. Rover had already been collaborating with the Honda Motor Company for more than ten years and was therefore familiar with Japanese management techniques. Therefore, the case study will demonstrate a solution to the original research question: "*how can the consensus process known as catchball, be effectively implemented in western companies to facilitate the Hoshin Kanri method, to translate top management goals into daily working?*"

Initially a major company-wide process review was conducted as a means to establish an agreed framework for the quality strategy. This was based on three broad steps and involved interviews with more than 100 directors, managers, staff and front line customer service staff visits. The initial steps were determined as follows:

- *Identification of the main company macro-level processes;*
- *Prioritise company processes against four key goals;*
- *Agree company process for developing quality strategy milestones based on catchball.*

These steps were instrumental in developing the concept of the quality strategy based on the principles of Hoshin Kanri.

Strategic policy deployment model

Before considering the design of a process to implement catchball, it is necessary to have an appropriate framework which aligns the Hoshin targets with the business plan and organisation. The design of the catchball process must enable this alignment to be robustly deployed into business plans and management action plans across the business. The review phase is a separate stage to catchball, and must involve corporate staff who can use the information in the annual corporate planning cycle. Therefore, following the creation of the quality strategy framework, a model known as *Strategic Policy Deployment*, was designed to relate Rover's vision and four strategic objectives with the company's key business processes, against a five-year time horizon, as shown in Figure 3.²⁰

It was decided to agree annual milestones for each of the nine key business processes within the quality strategy. This would

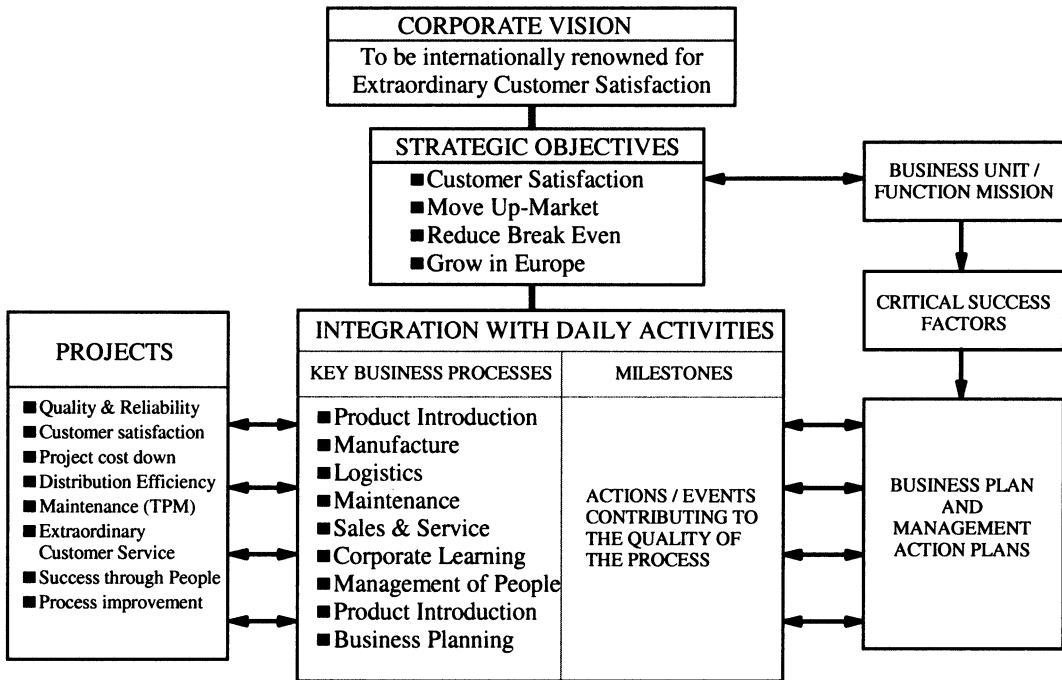


Figure 3. Strategic policy deployment

relate to the concept of agreeing the means for achieving the four strategic objectives, otherwise known as the vital few hoshins. The milestone definition used was: “an action or event whose occurrence can be objectively verified and which will materially contribute to the improvement of the process”. Therefore, a milestone can be something which is carried out; such as re-engineer a sub-process, or achieve a result such as reaching a target level for customer satisfaction. The main concept behind the milestone plan was to distinguish between the hard and soft interdependencies often found in major projects. Hard dependencies are the type typically encountered in sequential projects, such as engineering programmes, whereas with soft dependencies it may be possible to commence some tasks before the final training programme is completed, as in the case of Statistical Process Control (SPC). The extent to which any one activity must be completed in a network of soft inter-dependent milestones for the goal to be achieved depends on how far the other activities have been completed. In this case, failure to achieve any one milestone does not invalidate the plan: it simply imposes a higher level of achievement as a minimum requirement on all other milestones. This concept became known as “geodesic planning”, which avoids defining specific inter-dependencies, instead relying heavily on commitment to the vision.

Designing the catchball process

Agreeing the milestones for each year by consensus became a major issue, for which a number of potential solutions were considered.

- *Quality strategy team research the major issues and formulate the milestone plan based without achieving any real consensus, or buy-in to the strategy;*
- *Form small groups of senior executives and create the milestone plan based on minor levels of consensus, and buy-in to the strategy;*
- *Involve a significant sample of the management population in a company-wide consensus-building process, which would significantly aid buy-in to the strategy.*

The first option was considered to be unsuitable, based on the realisation that the quality strategy team would not be able to identify all major issues intuitively, let alone accurately identify effective remedial actions. The second option, although preferable to the first, would only be based on minor consensus, and would not take sufficient account of the major company issues and process dependencies. Therefore, the third option was selected based on the premise that as significant company resources would be expended on the deployment of the quality strategy, then it was justifiable to allocate commensurate levels of resource and time to develop, clarify and communicate the strategy. Based on the research into consensus-building techniques, an adaptation of the Delphi methodology was applied to design the catchball process. The *Rover Group Quality Strategy* catchball process is shown in Figure 4. A significant and novel feature of this process, is the combination of individual one-to-one interviews, followed by the Delphi survey, review workshops and feedback to the key business process owners.

Implementation of the catchball process

The first step within the catchball process, was to identify and interview a sample of up to 12 key stakeholders for each of the

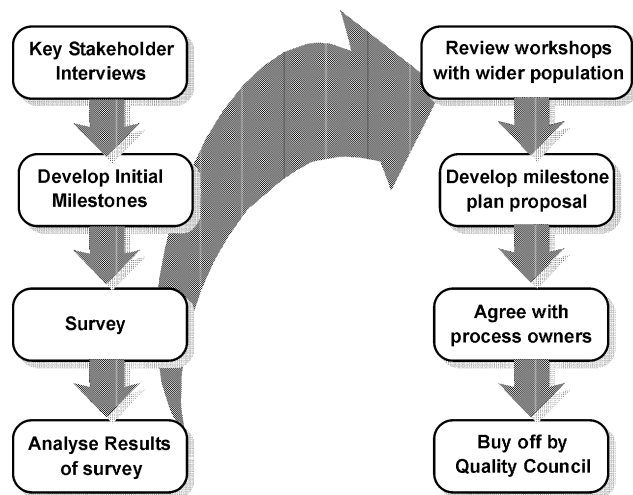


Figure 4. The catchball process

nine key main business processes. These were essentially senior executives who were process owners, internal customers or suppliers to the process as shown in Table 2. The interviews involved a cross-section of company functions, thereby demonstrating cross-functional management, as suggested within the Hoshin Kanri approach.

The objective of the interviews was to seed the process with initial ideas. They followed a consistent structure starting with the key question: “*What is your vision of what the process should look like in five years’ time?*” This vision was of the relevant key business process being reviewed, rather than the overall company vision. Once the process vision was established, the next subject was the gap between the vision and the present situation. Understanding the gap then led to an identification of the milestones necessary for achieving the vision. Only at the point during the interview when a clear view of the vision, gap and milestones was realised did the conversations move on to the issue of milestone timing.

The results of the interviews for each process were analysed and converted into a milestone chart by using the affinity analysis technique. The affinity analysis technique is one of the *seven new quality control tools* which is designed to collect facts, opinions and ideas about the unknown and unexplored areas that are in a disorganised state.²¹ The technique is based on writing facts

Table 2. Business process owners, customers and suppliers

Process	Process owner	Customer	Supplier
New Product Introduction	Project Directors	Sales and Marketing	Sales and Marketing Finance Business Strategy Director
Manufacturing	Manufacturing Directors	Sales and Marketing	Logistics Directors Product Directors Sales Directors Purchase Director
Sales and Service	Sales Directors Service Director	External Customers Dealer Network Product Directors Manufacturing Directors	Manufacturing Directors Logistics Directors Product Directors
Management of People	Personnel Director	All Company Managers and Employees	All Company Managers
Corporate Learning	Rover Learning Business Managing Director	All Company Employees	All Company Managers and Employees
Maintenance	Manufacturing Engineering	Manufacturing Directors	Logistics Directors Purchase Director
Business Planning	Business Strategy Director	Executive Committee	All Company Managers
Logistics	Logistics Directors	Manufacturing Directors Sales Directors	Sales Directors Purchase Director
Product Improvement	Product Directors	Manufacturing Directors	Sales Directors

(in this case proposed milestones) on to individual cards and then sorting them into groups based on their “*affinity*”. It is a particularly powerful team technique that depends on the right half of the brain. That is the half that controls the ability to think instantaneously, intuitively, emotionally and synthetically.

Initial milestones as agreed by the catchball process

Between nine and 12 milestones were identified for each process, an example of which is shown for the New Product Introduction process in Figure 5. It can be clearly seen that the milestones represented a combination of both actions and events, where milestone number one is an action, whereas milestone number eight is an event.

The initial milestones were then issued in the form of a Delphi survey to a much wider group of stakeholders of up to 150 on some of the processes. The purpose of the survey was to gain agreement on the process vision, and prioritise the milestones in order of importance and achievement timing. Respondents to the survey were subsequently invited to attend half-day workshops to discuss the results of the analysis that had already been circulated. This represented an adaptation of the Delphi technique, where normally the respondents would never meet as a group. Circulating the results prior to the workshop made attendees aware of the issues and allowed them to think about them. The output of the workshops was again analysed using the affinity technique to produce a proposed milestone plan for the process, which was circulated to the original group of up to 12 senior stakeholders, and finally presented to the Executive Committee for approval. Once approved, the process milestones were established as company policy. In total, 89 milestones were agreed for the nine macro-level business processes, by application of the catchball process.

1991	<ol style="list-style-type: none"> 1. Benchmark world class quality and reliability 2. All new products deliver corporate plan return on sales 3. Demonstrate understanding of and buy into the New Product Development process
1992	<ol style="list-style-type: none"> 4. Project milestone events demonstrate all programmes are in control measured by key task achievement 5. Publish 200 standard designs (Rover blueprint designs) 6. 200 preferred suppliers supporting the design and development process
1993	<ol style="list-style-type: none"> 7. Achieve world class levels of training and application of quality and reliability techniques 8. <i>Achieve quality and reliability equal to best European mass producer</i>
1994	
1995	<ol style="list-style-type: none"> 9. <i>Achieve world best in class quality and reliability in each product sector</i>

Figure 5. Initial milestones for new product introduction

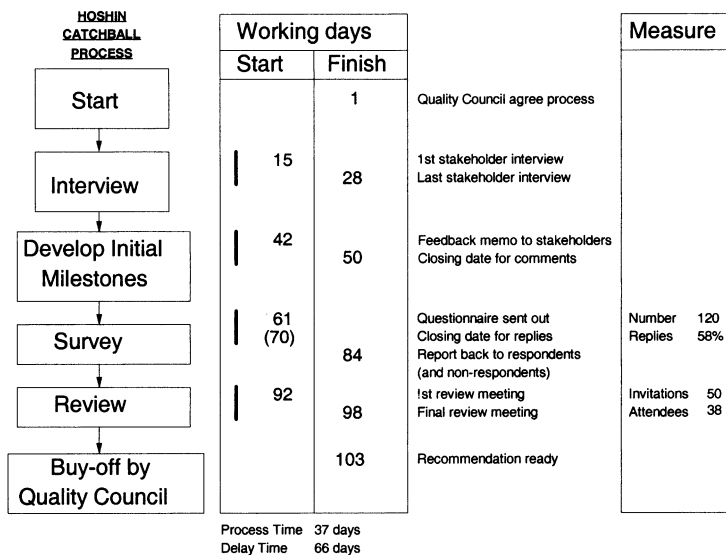
Data collection

The case study was driven by primary data, as collected by the principal author during the catchball process design and implementation. The data collected during the initial interviews was summarised into the Delphi questionnaire in the form of initial milestones, which were summarised into date order simply by mean and range from the survey respondents. This was carried out to provide points of discussion at the workshops, rather than to determine analytically the planned date of achievement, as it was the involvement at the workshops which provided the main value in the consensus-building method within the catchball process.

Catchball process status and measures

Two main process measures were used within the catchball process. One was a holistic view of overall progress, the other an individual process measure. The reason for instituting the measures was to ensure that the catchball process was implemented with the rigour often associated with any normal company project. Both measures were presented in the form of simple charts, which tracked the status for each process through the milestone development stages, and were reported monthly to the Executive Committee. Figure 6 shows an example of the catchball process and measures of elapsed time, which identifies actual added-value process time and delay time, along with Delphi questionnaire response and group discussion attendance.

The elapsed time through the milestone development stages was measured and recorded along with respondent rate to surveys and workshop attendees. These measures were critical for two reasons. First, the initial application of the catchball process for milestone development had taken 60 working days. This



NB:- This chart shows the measures of elapsed time through the catchball process

Figure 6. Catchball Process and measures


9 COMPANY PROCESSES	YEAR					LINKS TO S.O.'s
	1991	1992	1993	1994	1995	
New Product Introduction	*	*		*		 <p>Corporate Vision Rover is internationally renowned for extraordinary customer satisfaction</p> <p>Strategic Objectives (S.O.'s) Grow in Europe Move Upmarket Reduce Breakeven Customer Satisfaction</p>
Manufacture	*	*	*			
Logistics	*	*		*		
Maintenance						
Sales & Service						
Corporate Learning						
Management of People	*		*			
Product Improvement		*	*	*		
Business Planning	*	*		*		

Figure 8. Rover Group quality strategy

ing deployment. The main concern surrounded confidentiality, because while the strategy stated what needed to be achieved over the next five years, it was also by nature an admission of what had not been achieved to date. This was resolved by the then Chief Executive (George Simpson), who in the true spirit of Hoshin Kanri, declared the *Rover Group Quality Strategy* as the company's business plan of significant importance to all company managers and authorised a communication cascade.

The quality strategy was eventually deployed into daily working processes across all company functions, became the subject of regular review by self-assessment, and was further refined and communicated annually over an eight-year cycle, from 1991 to 1999. It can be claimed therefore that the consensus process known as catchball can be effectively implemented in western companies to facilitate the Hoshin Kanri method, to translate top management goals into daily working, as demonstrated by the case study.

Discussion

This case study has addressed the fundamental issue of integrating top management goals to daily working, particularly in western organisations, where this has not been achieved with success for a number of reasons. One of the main problems with western organisations is that strategic planning is often considered, and implemented, as a separate process from the operations side of the business and the output subsequently imposed across the organisation, as a series of projects and management action plans. This tends to result in a lack of ownership across the company, as a major consequence of misunderstanding the strategic objectives, and more importantly, of how to integrate them with working level processes. Second, the strategic objectives often become difficult to track in terms of progress results, due to the aforementioned misunderstanding and lack of integration with what actually happens in the day-to-day business of the company. A solution to this problem has been suggested as the adoption of the Japanese technique known as Hoshin Kanri which attempts to integrate top management goals into daily oper-

ations. This is achieved by involving employees across the organisation in the strategic planning process through individual and team contributions, in a non-threatening culture of consensus building. Yet, although Hoshin Kanri has been successfully applied in many Japanese companies, its adoption in the West is considered as low.

A review of the main issues surrounding the difficulties in the application of Hoshin Kanri within western organisations concluded that one particular area of difficulty concerned the links between corporate strategy and annual planning. In order to achieve a high degree of co-ordination of Hoshin activities, with either normal daily work processes or specific projects, a consensus-building process known as catchball is needed. Therefore, the research question addressed within this paper was “*how can the consensus process known as catchball, be effectively implemented in western companies to facilitate the Hoshin Kanri method, to translate top management goals into daily working?*” This was developed following a conclusion drawn at Rover that Hoshin Kanri had already been demonstrated by Japanese companies to be an effective strategy deployment technique. In particular, it was felt that Hoshin Kanri would achieve effective involvement of managers, generally in strategy development and deployment throughout the organisation. However, it was concluded that to apply catchball effectively within the cultural constraints of a major western organisation a unique process would need to be designed, rather than be expected to occur naturally.

A catchball process was designed for application at Rover as a means for agreeing improvement milestones for the company’s quality strategy. The process was developed using a novel combination of the Delphi technique to achieve individual contributions, and consensus-building workshops based on group judgement approaches, by considering the outputs of the Delphi surveys. The catchball process involved approximately 700 managers totalling 8,000 man-hours’ contribution over a 12-month period, to agree the initial 89 milestones contained within the *Rover Group Quality Strategy*. The milestones were agreed over a five-year horizon covering the period 1991 to 1995, and were aligned to the nine key business process visions, four strategic objectives, and the overall corporate vision. This delivered a strategic plan, which conformed to the principles of Hoshin Kanri, and was communicated across the company in a one-page A3 sized format.

An early learning point was that managers initially struggled with the concept of thinking more than one year out, and required facilitation throughout the interviews to develop their strategic thinking. However on most of the key processes, the basic issues started to crystallise after about four to five interviews, which could then be used as input on subsequent interviews. However care was taken to ensure that the interviewees were not stifled by previous comments, and therefore were allowed free thought during the interview. Another area of difficulty was to prevent what became known as “*high guts to brains*

ratio”, where managers would suggest unachievable milestone dates within the five-year time horizon in their responses to the Delphi survey. This was based on misguided commitment to the process, and was resolved by running group workshops to flush out the main issues. It was this modification to the Delphi technique that created rigorous levels of consensus within the management sample. A second learning point was the requirement for the development of an effective cascade process for the strategy, incorporating a results measurement system. This was achieved with the creation of a model known as *Strategic Policy Deployment*, which explained how company functions should communicate the strategy, by developing local management action plans integrated with daily working processes and use self-assessment measures.

The solution adopted for implementing the catchball process at Rover was based on two main areas of existing knowledge: the Delphi technique, and group judgement methodologies. These were combined in a novel process, which allowed the company to overcome cultural resistances to the notion of catchball for achieving consensus by involving employees in the strategic planning process. In particular, the outputs from the Delphi surveys were used to create specific data for discussion at the group workshops. It was found that once this data was created, it was not necessary to use the Delphi technique on subsequent annual iterations of the quality strategy, as a critical mass of understanding had already been initially achieved. Therefore, only the group judgement elements were retained, based on process workshops to review progress against the milestones, and refine or agree new milestones. In this way, the *Rover Group Quality Strategy* became self-sustaining over a period of nine years, up to 1999. By using the results of the self-assessment reviews, the process workshops were able to build upon past achievements.

However, inconsistencies were found in the effectiveness of the strategy deployment between the operations side of the company and the overall business planning process. The operations side used a fractal approach, which encouraged consistent application across the areas of engineering, manufacturing and sales etc. The business planning did not, which caused deficiencies in the creation and commitment to the product strategy, inadequate implementation, and eventual collapse of the company through brand confusion and inappropriate marketing strategies. This has led to the decision by BMW to break up the company by selling the Land Rover side to Ford Motor and the Rover Cars to the MG Rover Company (formerly known as the Phoenix consortium).

This case study highlights implications for both current work, and future research. The results have demonstrated that the catchball process designed and implemented at Rover Group, achieves three main outcomes in the form of retention of: individual thinking, reinforcement of individual thinking by wider contribution, and a greater acceptance of the planning outcomes. It can be concluded therefore, that the initial commitment and

*A novel process
allowed the company
to overcome
resistances to the
notion of catchball*

resources expended were beneficial, in that the *Rover Group Quality Strategy* was accepted across the company at all levels, and was in place for nearly ten years. Areas for future research opportunities involve the development of intranet-based data collection and analysis, within the Delphi and group judgement elements of the catchball process. This should be carried out with the specific aim of shortening the cycle time, reducing the number of man-hours involved, and further increasing levels of employee involvement in the strategic planning process.

Conclusions

- 1 Research has demonstrated that effective application of Hoshin Kanri requires mastery of the concept of a process known as catchball for building consensus, to translate top management goals into effective policies and working level processes.
- 2 A catchball process has been designed based on an adaptation of the Delphi technique by incorporating group judgement methods, which was aimed at achieving consensus from a large sample size. This was implemented at Rover by involving approximately 700 managers over a period of 12 months (8,000 man hours), in the development and agreement of milestones to achieve policy deployment of Hoshin Kanri targets. The application of the Delphi technique within a strategic planning and deployment phase represents innovation in western organisations.
- 3 The solution adopted for implementing the catchball process at Rover allowed the company to overcome cultural resistances to the notion of catchball for achieving consensus. This was achieved by involving employees in the strategic planning process, applying the outputs from the Delphi surveys to create specific data for discussion at the group workshops.
- 4 The one-to-one interview stage within the catchball process assisted in getting managers to think more than one year out, by iterating outputs from previous interviews as inputs to subsequent interviews. Measures were applied to manage the implementation of the catchball process as a project and improve efficiency. Also, the workshop stage within the catchball process, which represented an adaptation of the Delphi technique, was facilitated to ensure that achievable dates for each individual milestone within the five-year time horizon were agreed by consensus.
- 5 It was not necessary to use the Delphi technique on subsequent annual iterations of the quality strategy, as a critical mass of understanding had already been achieved. Therefore, the group judgement elements were retained, based on process workshops to review progress against the milestones from the

self-assessment reviews, and refine or agree new milestones, thus building upon past achievements.

- 6 Inconsistencies in the effectiveness of the strategy deployment between the operations side of the company, and the overall business planning process were identified, which led to a poorly developed product strategy, inadequate implementation, and eventual collapse of the company.
- 7 The results have demonstrated that the catchball process designed justified the initial commitment and resources expended for the development of the *Rover Group Quality Strategy*, which was accepted across the company at all levels, and was in place for nearly ten years.
- 8 The catchball process presented as applied at Rover represents a leading edge approach to involving managers in strategy development and deployment throughout the organisation. The case study also demonstrates that Hoshin Kanri can be applied in western companies as a means for translating top management goals into daily working.
- 9 Future research opportunities involve the development of intranet-based data collection and analysis, within the Delphi and group judgement elements of the catchball process. The specific aims should be: to shorten the cycle time, reduce the number of man-hours involved, and increase levels of employee involvement in the strategic planning process.

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