Quality strategy for transformation: a case study

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Abstract
Purpose – This paper aims to address the issue of sustainability of excellence in today’s turbulent environment and evaluates the effectiveness (to achieve objectives) of quality strategy in a DAP-winning company.

Design/methodology/approach – A face-to-face interview and a literature review were carried out in a case study mode.

Findings – The paper finds that total quality management (TQM) implemented in the Deming Application Prize (DAP) framework has a positive effect on business performance. To sustain excellence, it is important to maintain strategic focus, match strategic options with aspirations, link the human resource mission with the company vision, and work for transformation.

Research limitations/implications – Information provided/reported by the case company is fully relied upon and the required data are extracted.

Originality/value – Working definitions of TQM and business excellence are presented and the issue of “transformation” is explored. The study adopts creative approach for identifying critical success factors, discovers the possibility of including “flexibility” as the fifth angle in DAP examination, and proposes a framework for further research.

Keywords Quality management, Total quality management, Deming Prize, Organizational change, Business excellence, India

Paper type Case study

1. Introduction
Total quality management (TQM), which has been called a management philosophy (Hafeez et al., 2006), a business strategy (Bowles and Hammond, 1991), a company culture (Dahlgaard et al., 1998) and a systematic, scientific, companywide activity (Kano, 1996), is an holistic approach to managing quality; it requires development of a quality strategy (Kanji et al., 1992) and a framework for its implementation. The three popular award frameworks – i.e. the Deming Application Prize (DAP), the Malcolm Baldrige National Quality Award (MBNQA) and European Foundation for Quality
Management (EFQM) Excellence Model – seek to promote excellence through the implementation of TQM. However, with sustainability of excellence becoming a challenge, these models are drawing criticism for lacking a scientific approach in their development (see Williams et al., 2006, among others) and insight into “internal relations and the value generation processes” (Conti, 2006). Addressing the issue of sustainability of excellence, this paper evaluates the effectiveness of quality strategy in a DAP-winning company and attempts to build insight into the issue of transformation, viewed as prerequisite to excellence.

2. Concepts and definitions

Quality refers to the correctness or appropriateness of an activity or fitness of an entity; it is compliance to a certain standard. The quality movement in the industrial world, beginning with Shewhart’s control chart technique (Shewhart, 1931), incorporating the views of operations, systems, behavioural, management function school, and encompassing Western and Eastern approaches, led to the development of the concept of TQM. Pioneered as total quality control (TQC), termed a thought revolution in management (Ishikawa, 1985) by Feigenbaum (1957), TQM marked a change in management thinking. Though continuously evolving, it is considered different for several reasons:

- it attempts to do away with bureaucratic and scientific thinking;
- it adopts a strategic and socio-technical systems approach to managing quality;
- it views people as partners and not adversaries, and
- it stresses continuous improvement with the application of a variety of tools and techniques, such as PDCA improvement cycle, muda, kanban, QC circles, old and new seven QC tools, policy deployment and daily management, kaizen, quality function deployment, lean production, Six Sigma and so on, with most of the tools originating in Japan.

TQM, with top management support and company-wide implementation, seeks to protect the interests of all business stakeholders, and can be defined as:

An integrated process focusing on the customer, the chief beneficiary, but simultaneously aiming to protect and enhance the interests of all stakeholders and generate the greatest possible value at minimum cost through the use of continuously evolving tools and techniques.

With the creation of “superior value” (Porter, 1980) and satisfaction of all stakeholders being the aim, the above definition (showing the inherent dynamism of the concept) can be applied in a business context as well as socio-political context; it is in keeping with the emerging thinking regarding the applicability of excellence models in all types of organisation (Conti, 2006). It also clarifies that TQM (preferred over excellence by some quality researchers, for example Dale et al., 2000) is the “process [implemented as comprehensive strategy] leading to the effect”, whereas excellence (defined below) is the “effect [including the process], an outcome of process”; the more the process glitters, the better the outcomes will be and the greater will be the excellence.

Strategy is the determination of the path (how?) for achieving objectives or goals (what?) at corporate, business or operational level; it is a “pattern observed in a stream of decisions” (Mintzberg, 1973). TQM covers all organisational layers and requires...
effective and efficient implementation. According to Kano (2007), it is about “effectiveness from the customer viewpoint” and “efficiency from the company viewpoint”. Quality awards – for example MBNQA and DAP – according to Kano (2007) “focus on both quality and business excellence” and the DAP is given for “setting challenging objectives and strategies, applying TQM for achieving the objectives, and realising outstanding effects as outcomes”.

The European Foundation for Quality Management (2007) defines excellence as “the outstanding practice in managing the organisation and achieving results”. According to the authors, business excellence is: a positive and consistent change in all round performance of the organisation, and realisation of challenging goals, and can be defined as:

Continual achievement of all round business goals and targets as enshrined in company vision, for realisation of the mission, made possible through focused efforts [measured, for example, in balanced scorecard format], for satisfaction of all business stakeholders.

However, the prerequisite for excellence appears to be learning, which is considered as being connected with change and transformation (Deming, 1991; Dahlggaard-Park, 2006b). This paper addresses the issue of sustainability of excellence and attempts to build insight into the issue of transformation. The views and contributions of some leading researchers on quality management are summarised in Table I.

3. Research objectives and methodology
To address the issue of sustainability of excellence, this paper, within a case, evaluates the effectiveness (effective to achieve the objectives; The Deming Prize Committee, 2008) of the strategy in achieving goals and objectives and attempts to identify factors affecting excellence. It also broadly evaluates the impact of TQM (implemented in DAP framework) as a concept on business performance. Finding case based research method suitable, as it helps “answer ‘how?’ question as well as or instead of a ‘what?’ question and where phenomena and the context in which they exist are difficult to separate” (Yin, 1999), a DAP-winning company was selected for the study and following research questions were framed:

RQ1. How effective is the case company’s strategy in achieving the objectives?
RQ2. How does TQM impact business performance?
RQ3. What should be the approach with regard to implementing TQM techniques (best fit versus best practice)?
RQ4. What are the factors that are critical for sustaining excellence in today’s turbulent environment?

Primary data collected by watching a company presentation, conducting a face-to-face semi-structured interview with its Vice President (Strategy And Business Development) and taking a guided tour of the shop floor in April 2007, and secondary data collected from the company’s website, annual reports and press releases have been utilised.

The DAP examination focuses on the formulation of business objectives and strategies, TQM implementation for achieving objectives and strategies, and outstanding results achieved as an outcome (The Deming Prize Committee, 2008).
Companies applying for the DAP are required to prepare a corporate DTQMP (description of TQM practices) giving information on business goals and strategies, status and effect of TQM implementation and future plans, and are evaluated for “basic categories: management policies and deployment, new product development and/or work process innovation, maintenance and improvement, management system, information analysis and utilization of IT and human resource development (from four angles: effectiveness, consistency, continuity and thoroughness); unique activities and roles of top management”.

The case analysis focuses on objectives, TQM implementation and results, and attempts to answer the research questions. The relationship between objectives and strategies has been analysed by carrying out a strategic analysis of the company, including its approach to implementing TQM, and checking alignment of the strategy

### Table I.
Summary of views and contributions on quality management and excellence

<table>
<thead>
<tr>
<th>Author</th>
<th>Contribution</th>
<th>Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schultz (1994)</td>
<td>Origin of quality</td>
<td>Taking lead from the meaning of <em>qualis</em> as “how constituted”, traces its origin in human wants</td>
</tr>
<tr>
<td>Juran (1974)</td>
<td>Definition of quality</td>
<td>Fitness for use; customer satisfaction</td>
</tr>
<tr>
<td>Crosby (1979)</td>
<td>Definition of quality</td>
<td>Quality is conformance to requirements</td>
</tr>
<tr>
<td>Feigenbaum (1957)</td>
<td>Definition of TQC</td>
<td>An effective system for integrating quality development, quality maintenance and quality improvement efforts to enable marketing, engineering, production and service to achieve full customer satisfaction</td>
</tr>
<tr>
<td>Deming (1991)</td>
<td>Emphasis on transformation</td>
<td>Transformation into a new style of management is required whose root lies in “profound knowledge”</td>
</tr>
<tr>
<td>Kanji <em>et al.</em> (1992)</td>
<td>Quality strategy</td>
<td>Development of quality strategy is an essential part of implementation of TQM</td>
</tr>
<tr>
<td>Kano (1996)</td>
<td>Definition of TQM</td>
<td>A systematic, scientific, companywide activity that places importance on customers</td>
</tr>
<tr>
<td>Dahlgaard <em>et al.</em> (1998)</td>
<td>Definition of TQM</td>
<td>A company culture characterized by increased customer satisfaction through continuous improvements, in which all employees actively participate</td>
</tr>
<tr>
<td>Kondo (1998)</td>
<td>Creativity and future development</td>
<td>Without creative ability, diversification of business and branching out into new business fields which support future development of the company are very difficult</td>
</tr>
<tr>
<td>Conti (2006)</td>
<td>Systems thinking</td>
<td>The full meaning of quality and quality management concepts can only be understood within the framework of systems thinking</td>
</tr>
<tr>
<td>Kaplan and Norton (2006)</td>
<td>Strategy alignment</td>
<td>The enterprise must also align its employees and management processes with the strategy</td>
</tr>
<tr>
<td>Idris and Zairi (2006)</td>
<td>Sustainability</td>
<td>Sustainability is the product of efficiency and effectiveness in TQM implementation</td>
</tr>
</tbody>
</table>
with the company’s goals. This is followed by evaluation of outcomes in the BSC format (Kaplan and Norton, 1996) and also against vision goals and the expectations of the DAP (The Deming Prize Committee, 2008). Synthesising the findings and learning, and adopting the creative approach suggested by de Bono (1970), critical factors are identified, research questions answered and a framework for future research is proposed.

4. The case company
Sona Koyo Steering Systems Limited, a technical and financial joint venture company of JTEKT Corporation (created with the merger of Koyo Seiko Company and Toyoda Machine Works), is the company studied. It produces complete steering systems, for manual, hydraulic and electronic power steering systems, and driveline products including case differentials, axle components, rear axle assemblies and propeller shafts, for passenger cars and medium utility vehicles (MUVs) in India. The company’s clientele includes Maruti Suzuki (previously called Maruti Udyog Limited) with a 58 per cent share in sales, Hyundai, JTEKT, Tata Motors, Toyota, General Motors and several others. Established in 1985 and named a “global growth company” by the World Economic Forum (WEF) in 1998, it is the world’s first steering systems company to have won the DAP, in 2003.

Sensing overseas opportunities for the auto-components business at the beginning of the new century, the company identified its mission: to “Create a company that India is proud of” and articulated its goals in its Vision 2010 statement (released in 2003), reproduced below:

To make Sona a partner of choice to global customers:
- An organization of energized and involved employees.
- Growing & achieving high profitability.
- Supplying to major global OEMs directly or indirectly.
- At least 45% of the sales are to overseas customers.
- Continue to be no. 1 steering systems company in India.

Beliefs – respect for the individual; service to the customer; excellence in the pursuit of goals. It set the first milestone target of net sales of INR5 billion (≈$0.125 billion) and exports worth INR1 billion by 2006-2007.

5. Strategic analysis
5.1 Vision-business strategy relationship
With over 45 per cent (by volume) of domestic sales, Sona Koyo is the leader in steering systems business in India. It sees future growth opportunity in the compact car, low-cost entry level car, light commercial vehicle and off-highway vehicle segments and considers Rane (Madras) Limited, which has a higher share in terms of value (higher proportion of power steering to total sales) as its major competitor.

The company has adopted a growth posture and has set ambitious corporate and business goals (shown in Vision 2010), especially the goal relating to overseas sales: to move from a situation of insignificant exports to a company earning 45 per cent revenues and targeting INR1 billion (20 per cent) by 2006-2007 from overseas markets.
The basic components of its business strategy, aimed at achieving the above objectives are:

- scaling up volume, capacity and manpower;
- establishing alliances and partnerships;
- building technology, R&D and testing capabilities;
- diversifying its product portfolio;
- expanding customer base;
- de-risking the business-reducing share of Maruti Suzuki in sales;
- increasing exports; and
- excelling through TQM.

The pattern of decisions, when read in a structured format (Figure 1), reflects the contours of the strategy and its alignment with the goals.

5.2 Quality strategy and the implementation of TQM

Sona Koyo began its TQM journey in 1997 when, faced with high customer rejections and returns, it joined the Maruti cluster of suppliers. With “TQM led and Toyota production system (TPS) and total productive maintenance (TPM) supported integrated approach” (domain-b.com, 2004), it has implemented its quality strategy through policy deployment in three phases:

1. retention;
2. improvement; and
3. breakthrough.

Starting with 5S and simple techniques like exactness, pokayoke, visualization and a suggestion scheme in 1997, moving forward to applying gap analysis, deep analysis, why-why analysis, and 7QC tools, it has implemented kaizen, just-in-time (JIT) and TPM, and taken some unique initiatives like “quality gate 20” for the development of new products and “high-volume production trial [HVPT]” for judging the feasibility of its production. The company is penetrating specific market segments like off-highway vehicles, collaborating with the Indian Institutes of Technology (IITs), developing niche products and trying to become a Tier I supplier in the non-passenger car segment. New products introduced during the past three years account for over 44 per cent of total sales. However, its R&D expenditure of 0.8 per cent of revenue is quite low. Its approach to implementing TQM, with beliefs related to customers, people and excellence (Table II), is aimed at achieving the business goals and aligned to the business strategy. However, the real test of effectiveness of the strategy is the achievement of business goals and meeting the expectations of the DAP.

5.3 Evaluation of outcomes

Sona Koyo witnessed 100 per cent or greater growth in the production (except case differential assembly) and sales of all steering system and driveline products and an improvement in operator efficiency and the cycle time of new products during the 2003-2007 period. The analysis of selected measures in balanced scorecard format (Table III) from 2003-2004 to 2005-2006 reveals improvement, barring an increase in
supplier rejections in 2004-2005, in learning and growth and in internal business processes. There is improvement in customer and financial processes also, with consistent improvement (year-on-year) in return on capital employed (ROCE) and return on net worth (RONW), which has grown (not shown in the table) at rates of 19.8 per cent, 22.9 per cent and 19.3 per cent. However, achievements in operating profit
(increased cumulatively but not uniformly) and exports (increased from INR30 million (≈ $0.75 million) to INR500 million (≈ $12.5 million) but low in percentage terms) are not satisfactory.

In 2006-2007, the company derived 84.7 per cent (product wise) of its revenues from steering systems products and 58 per cent (customer wise) from Maruti Suzuki, whose share remained at the same level. Its sales touched $78 million and there were year-on-year increases of 59.3 per cent in profit, 27.8 per cent in ROCE and 20.8 per cent in RONW. However, exports stagnated. Mid-course review of performance against 2010 goals and first milestone targets set by the company for 2006-2007 (Table IV) and the benefits expected of winning the DAP as mentioned in DAP Guide (Table V) reveal increased growth, increased profit (though declining gradually), improvement in

### Table II.
TQM implementation at Sona Koyo

<table>
<thead>
<tr>
<th>Beliefs</th>
<th>Strategy</th>
<th>Strategy elements</th>
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<tbody>
<tr>
<td>Service to the customer</td>
<td>Total quality</td>
<td>Establishing Vision 2010</td>
</tr>
<tr>
<td>Respect for the individual</td>
<td>management</td>
<td>Setting a higher ideal for vision realisation</td>
</tr>
<tr>
<td>Excellence in the pursuit of goals</td>
<td></td>
<td>Adopting a new management model</td>
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<tr>
<td></td>
<td></td>
<td>Policy deployment</td>
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<tr>
<td></td>
<td></td>
<td>Flow manufacturing (TPS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Implementing QS 9000/ISO 9001, TS 16949 and ISO 14001 systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JIT, TPM, kaizen and other initiatives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supplier development</td>
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<tr>
<td></td>
<td></td>
<td>Fact-based negotiations with suppliers</td>
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<tr>
<td></td>
<td></td>
<td>Leveraging IT</td>
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<tr>
<td></td>
<td></td>
<td>Learning and continuous improvement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Breakthrough management</td>
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</table>

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</thead>
<tbody>
<tr>
<td>Financial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating profit (per cent) (before depreciation, interest and tax)</td>
<td>60</td>
<td>26</td>
<td>10.5</td>
</tr>
<tr>
<td>Customer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROCE (per cent)</td>
<td>16.5</td>
<td>24.2</td>
<td>22</td>
</tr>
<tr>
<td>Customer returns (ppm)</td>
<td>112(^a)</td>
<td>90</td>
<td>57</td>
</tr>
<tr>
<td>Exports (percentage of net sales)</td>
<td>2</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Internal business processes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier rejections (ppm)</td>
<td>932(^b)</td>
<td>1368</td>
<td>537</td>
</tr>
<tr>
<td>Products developed</td>
<td>24</td>
<td>39</td>
<td>49</td>
</tr>
<tr>
<td>Learning and growth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training/employee (hours)</td>
<td>57.5(^c)</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Suggestions/employee</td>
<td>10.4(^d)</td>
<td>20.6</td>
<td>29</td>
</tr>
</tbody>
</table>

**Note:** \(^a\)1997 figure (i.e. prior to implementation of TQM) was 1,579; \(^b\)1997 figure was 3,500; \(^c\)1997 figure was 36; \(^d\)1997 figure was 2
productivity and quality, but poor performance in exports (attributed to a delay in launching a vehicle on the part of a client), limited expansion in overseas market and revision of export target (in percentage terms) for 2010, indicating the impact of two risk factors for auto-component suppliers, i.e. dependence on vehicle manufacturers and currency fluctuations (rupee appreciation). The effect appears to have been augmented by high employee attrition (mostly at the middle management level) and increased human resource (HR) strength (286 in 2003-2004 to 689 in 2006-2007), leading to a changed employee profile (three-quarters of the workforce were new). This may have caused a discontinuity in functional tactics and contributed to sub-optimal performance in the competitive global market.

5.4 Key findings
The analysis reveals that TQM implemented as comprehensive strategy in the DAP model has helped Sona Koyo improve its performance. However, the company has not been able to meet its overseas goals and the expectations of DAP in all respects. With domestic growth outpacing overseas growth, it has revised the export target from 45 per cent of sales to 35 per cent, for 2010. But business excellence – i.e. a positive and consistent change in all round performance of the organisation – requires strong focus and long-term commitment to goals!
5.5 Learning and recommendations

5.5.1 Strategic focus. Technological alliances are a source of strength; however, gradual self-reliance and development of niche products help in leapfrogging competition, fighting pricing pressures and reducing risk in auto-component business. The case company, it appears, has not been able to match its HR (nurturing and retaining distinctive competencies) and marketing and technological options (developing more products for overseas market) with its aspirations and develop a presence in key international markets as planned. With major OEMs planning to make India a global export hub for compact cars, the focus also appears to be shifting to the domestic market.

5.5.2 Flexibility. In the past few years, Sona Koyo has exhibited flexibility, as is evident from the adoption of a new management model, the establishment of new alliances, scaling up, product diversification, the outsourcing of non-core products, parallel sourcing, and the change in the production process from cellular to single piece flow. However, it has not been able to generate enough strategic options for meeting its goals in all respects. The process of change is facilitated with the creation of quicker change mechanisms, empowerment and freedom of choice, and according to Sushil (2000), a flexible process and a flexible actor can quickly respond and adapt to a changing situation.

5.5.3 Transformation. TQM has to act as vehicle for transformation (transformation requires maintaining ability and renewing ability; Dahlgaard-Park, 2006a). Companies pursuing excellence need to develop the ability to manage continuity with change and transformation, and to recall the views of Deming (1991):

Transformation into a new style of management is required. The route to take is what I call profound knowledge. It is not automatic. It must be learned; it must be led.

Leading change means having a shared vision, in a true sense, a culture of mutual respect, trust, openness and cooperation among fellow employees and an all-pervading commitment to the company’s mission; creating a company people are “happy and proud to be part of”, by making “Sona an employer of choice to Sona people”, and thus realising the company’s vision and mission (Figure 2).

5.5.4 DAP evaluation. The DAP committee evaluates the basic category items for effectiveness, consistency, continuity and thoroughness. With flexibility emerging as a critical factor for transformation and sustainability, there is case for including “flexibility” as the fifth evaluation angle in TQM diagnosis in the DAP methodology for the success of future plans.

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**Figure 2.** Leading the change

| HR Vision | To make Sona Koyo an employer of choice to Sona people |
| Company Vision | To make Sona Koyo a supplier of choice to global customers |
| Company Mission | To Create a company India is proud of |
6. Critical factors

Efforts have been made to identify factors affecting TQM and competitiveness by various authors across industries and sectors (Idris and Zairi, 2006), including quality performance of construction projects (Jha and Iyer, 2006). In recent years, emphasis has been placed on “strategic intent” (Hamel and Prahalad, 1989), “shared vision” (Dahlgaard and Dahlgaard-Park, 2006), “value generation processes, particularly internal relations” (Conti, 2006), “new working environment” (Hafeez et al., 2006), “alignment of employees and management processes with the strategy” (Kaplan and Norton, 2006), and agreement in the literature is found on environmental, industry and organisational factors as the source for their identification (Jonker, 2004).

As regards the method of identification, de Bono (1970) has suggested creative approaches for developing “dominant ideas” (often confused with critical factors) from “vague ideas”, and isolating “crucial factors” from dominant ideas. A SWOT&R (strength, weakness, opportunity, threat, and risk) analysis (an adaptation of SWOT framework), presented as a snapshot in Table VI, of the company based on a synthesis of the findings and learning and literature review, helps to evaluate the external environmental and internal organisational factors impacting the case company in achieving its objectives, and isolating crucial factors.

The critical (crucial) factors, defined as important cause factors related to vision, strategy and four BSC perspectives, and identified for the company, are presented in Table VII. These factors are isolated from dominant ideas, which in addition included long-term market commitment and satisfaction of all stakeholders (included in “a” and “b” in Table VII), motivation, loyalty, internal relationships and culture (included in b, c and e), team work and coordination (included in b, c and e), technological innovation (achieved through c, e and f) and strengthening of alliances and partnerships (achieved through a and b) for serving current and future markets, anticipation of change and adaptability (achieved through c and d), learning and transformation (achieved through b, c, e and f) and risk reduction (included in d and e); these are considered

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
<th>Opportunities</th>
<th>Threats</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visionary leadership</td>
<td>High employee attrition</td>
<td>Excellent growth prospects for car and UV industry</td>
<td>Ability of competitors in EPS segment</td>
<td>Economic downturn</td>
</tr>
<tr>
<td>Alliances and partnerships</td>
<td>Technological dependence</td>
<td>Presence of global OEMs in India</td>
<td>Increased pricing</td>
<td>Power and currency fluctuations</td>
</tr>
<tr>
<td>Quality standards and engineering skills</td>
<td>Limited niche products</td>
<td>Good export potential</td>
<td>Slowdown of GDP growth</td>
<td>Technological alliances</td>
</tr>
<tr>
<td>Design, analysis managing data base and testing capabilities</td>
<td>Cost-effectiveness</td>
<td>Opportunities in off-highway vehicle and other niche segments</td>
<td></td>
<td>Domestic growth dependent on passenger car and UV sales</td>
</tr>
</tbody>
</table>

Table VI. SWOT&R analysis
critical for the case company in sustaining the excellence, along with others, and are proposed to be studied further through questionnaire survey.

7. Answering research questions
7.1 RQ1. Effectiveness of quality strategy
Adoption of the DAP framework and implementation of a TQM-led and TPS- and TPM-supported integrated approach at Sona Koyo has led to improvements in management processes and strengthened its competitive position in the domestic market. However, the inability of the company to meet completely its strategic goals and the expectations of the DAP shows gaps in respect of the HR, technology and marketing components (included in basic categories in the DAP framework) of the quality strategy.

7.2 RQ2. Impact of TQM on business performance
The improvement witnessed in the case company shows that TQM has a positive impact on business performance and the gains increase with the proliferation of TQM across the organisation with time. Similar strong empirical support has been found by Douglas and Judge (2001) and several others, as cited by Idris and Zairi (2006).

7.3 RQ3. Suitability of TQM techniques (best fit versus best practice)
Sona Koyo went through a period of crisis (the reason reported for TQM implementation by nine out of 40 organisations surveyed by Kano, 1996) in 1997-1998; faced with high in-house rejections and supplier returns and low net profit, it started its TQM journey and adopted a comprehensive three-phase strategy for TQM implementation. Change has come with time and a higher level of TQM implementation has led to higher performance (reported similarly by Bounds et al., 1994 and Lai and Cheng, 2003). Extrapolating this, it should continue learning and implement techniques matching market, product and production process requirements.

7.4 RQ4. Factors critical for sustaining excellence
The study has identified strategic focus, process objective alignment, change, broadening of the customer base, flexibility, empowerment and speed, distinctive competencies and continuous improvement as critical factors. With emphasis being placed on efficiency and effectiveness in TQM implementation (Idris and Zairi, 2006; Kano, 2007) and flexibility being considered a prerequisite for sustaining competitive advantage.

<table>
<thead>
<tr>
<th>Factor</th>
<th>BSC link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic focus (a)</td>
<td>Vision and strategy</td>
</tr>
<tr>
<td>Alignment of employees and management processes with objectives (b)</td>
<td>Vision and strategy</td>
</tr>
<tr>
<td>Leading the change (c)</td>
<td>Vision and strategy</td>
</tr>
<tr>
<td>Broadening of customer base (d)</td>
<td>Vision, strategy and customer</td>
</tr>
<tr>
<td>Flexibility, empowerment and speed in making and implementing choices (e)</td>
<td>Strategy</td>
</tr>
<tr>
<td>Nurturing distinctive competencies (f)</td>
<td>Strategy, learning and growth</td>
</tr>
<tr>
<td>Continuous improvement (g)</td>
<td>Internal business processes</td>
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Table VII. Critical factors for excellence
advantage (Hamel and Prahalad, 1989; Mintzberg, 1994), the generation of flexible options becomes a necessary requirement.

8. Towards sustainable excellence: a model for research

The above analysis leads to the belief that sustenance of excellence requires ensuring stability through cultivating a blend of dynamism and wisdom, learning and developing competencies; outside dependence may affect a firm’s future degree of freedom (Little, 1981). “Learning is connected with change, development and transformation” (Dahlgaard-Park, 2006b). According to Senge (1990), as the world becomes more interconnected and business becomes more complex and dynamic, work must become more “learningful”. The organisations that will truly excel in the future will be the organizations that discover how to tap people’s commitment and capacity to learn at all levels in an organisation. And this question of “how?” needs further probing. With TQM, aiming at effectiveness and efficiency of processes, building of capabilities, value addition and excellence and, defined as an approach for improving the competitiveness and flexibility (Oakland, 1989), a link is observed between the concept of quality and flexibility, as also brought out by Bahrami (1992):

Flexibility is a multi-dimensional concept- demanding agility and versatility: associated with change, innovation, and novelty: coupled with robustness and resilience, implying stability, sustainable advantage, and capabilities that may evolve over time.

Quality is a “pearl” which “shines through time” (Kondo, 1998). It can shine only with the creation of capabilities and applying learning, made possible through various functional tactics, routines, activities, experiences, innovations, understanding the relationships, and transforming capabilities into distinctive competencies or “abilities” (Kano, 2007) and retaining and building on them. Thus quality, a dynamic concept, calls for flexibility, and systemic flexibility (Sushil, 2000) is defined as:

Exercise of free will or freedom of choice on the continuum to synthesize the dynamic interplay of thesis and antithesis in an interactive and innovative manner, capturing the ambiguity in systems and expanding the continuum with minimum time and efforts.

This analogy to a pearl opens a plethora of opportunities for studying the interplay, between various strategy related critical factors (i.e. speed, flexibility, novelty, agility, adaptability) and quality on the one hand and the resources, capabilities, competencies, learnings, experiences on the other, for research and evolution of a new paradigm. This concept (Figure 3) is proposed as the framework for the next level of research on TQM.

In support of this conceptual model, the opinion of Hamel and Prahalad (1994) is cited:

Firms need an holistic review and continuous innovation of strategy to match their resources to the requirements of the future-oriented marketplace.
This case study, being a micro-study, is proposed to be followed by a macro study, comprising a questionnaire survey, adopting the above framework, of DAP-winning (since 1991 when the economies world over started opening up) companies and more case studies, to draw learning and work towards an effective business excellence framework.

9. Conclusion

The case study taken up to address the issue of sustainability of excellence has revealed the link between the quality strategy of the company and its business strategy, the positive effect of TQM on performance, and some gaps in goal achievement. It has established the need for maintaining “strategic focus” and “matching strategic options with aspirations”. Adopting a creative approach, the study has used the SWOT&R framework (which can be used in such analysis) for identifying critical factors. It has also discovered the possibility of the inclusion of “flexibility” as the fifth angle for evaluation in the DAP methodology and, exploring the issue of “transformation”, has proposed a direction for future research.

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**Further reading**


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