

Amalgamating TQM and Six Sigma: Fostering Rejuvenating Prospect

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Abstract

TQM and Six Sigma techniques are the most astounding and realistic methodologies sway towards optimistic potential. The designated paper investigates the possibility of integrating the inimitable fields of Total Quality Management and Six Sigma to generate combined concepts, line of attack, tools and protocols, which will furnish augmented business benefits and employee emancipation. The genuine value of Six Sigma initiates to exemplify the organization's strategic plan facilitating to implement the strategy with a focus on the paying customers. With the intention to accomplish the true benefits of Six Sigma, projects will traverse organizational boundaries and be focused on business processes that recounts for TQM exertions. A conceptual case is established for essentially integrating both streams of management to materialize a holistic approach that can eventually bring about stimulating inferences. The conclusion to the paper invites those working in the areas of TQM and Six Sigma to ascend the paramount challenges and initiate the steps to create transforming procedures. Key Words: TQM, Six Sigma, Strategic Plan, Holistic Approach, Organizational Boundaries.

Introduction

Two distinct areas have developed in the management literature which from a cursory review would appear to have more in common than they have in distinctiveness. These are the fields of Six Sigma (SS) and Total Quality (TQ). A considerable number of Organizations and Universities have developed expertise in both of these fields of study over a number of years. What is surprising is that these developments have occurred with little synergy between the fields of study either in academic publications or in industrial

applications. This paper will conduct a critical review of SS and TQ and their possible linkages using a proposed conceptual framework which is tested by comparing existing model for Total Quality and Six Sigma.

Critique of TQM

TQ assumes that commitment at all levels can be achieved yet in most organisations this remains patchy as individual agendas will always be super-imposed on organizational goals. Another point is changing roles and systems. While

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it may be desirable to change these to remove non-value added activities, shorten cycle times and improve other organizational performance measures, the effect on the individuals concerned is often treated as a secondary effect. Thus while TQ philosophy is built on improving business performance measures and changing roles and systems to suit, it has not integrated the personal ambitions and desires of the individual who perform these roles and are affected by these systems. The main aspect was changing culture, attitudes and behaviors. All too often is assumed that mechanistic changes brought about by a change project (such as TQ) will ultimately result in the fundamental change in these factors (albeit with a time lag).

The key reason for failure in change initiatives is 'not anchoring changes in the Corporation's culture' instead change only sticks when it becomes 'the way we do things around here. When it seeps into the bloodstream of the corporate body. Thus unless desired behaviors are rooted in social norms and shared values they are subject to degradation as soon as the pressure for change is removed. A number of key lessons to avoid failure in TQ implementation, one of which is that long term improvement is predicated on systematically addressing the 'human side of quality', while this is true in a number of cases it again makes the underlying assumption that people and process can somehow be separated.

A frequently discussed aspect is unquestionable the difference between Six Sigma and TQM. If Six Sigma is used only at the project level to eliminate defects, it is an incremental improvement approach with some structure and discipline. This can be very valuable but misses much of the true value of Six Sigma and the major differences between TQM and Six Sigma. The real value of Six Sigma starts to show when it is integrated with the organization's Strategic Plan helping to implement that plan with a focus on the paying customers. In order to achieve the true benefits of Six Sigma, projects will cross organizational boundaries and be focused on business processes this is relative unusual for most TQM efforts. Sustained strategic results can be achieved when this is done. When applied to a business process the benefits obtained move the organization toward World Class Performance in that business process.

Key areas with a typical TQM, followed by the Six Sigma approach.

Core Business:

TQM,

- Frequently not part of the Business Strategy.
- Quality Council did not include Senior Managers.
- No bottom line accountability
- Re-stripe the parking lot projects.

Six Sigma,

- A strategy from the top of the Business Unit

- Champions and Senior Management are the Quality Council
- Projects frequently have a profitability hurdle
- Projects are carefully selected with managers accountable.

Goals:

TQM,

- Improve everything
- Usually not targeted to a process or business
- Frequently without focus
- No projected performance levels.

Six Sigma

- 3.4 defect per million opportunities
- Targeted areas
- Projects have a defined scope by management.

Leadership:

TQM,

- Frequently vocal strong supporters
- Most places with active leadership succeeded at some level
- Most management treated it as a fad
- When supporters left so did TQM, total quality management.

Six Sigma

- Where successful the top management demands implementation
- Management takes an active role in all phases of Six Sigma
- If management treats like TQM; Six Sigma will have the same success/failure.

Application:

TQM,

- Learn the tools
- Don't worry about the bottom line
- Use as many tools as possible
- Many re-stripe the parking lot projects.

Six Sigma

- Black Belts are well trained
- Projects are expected to meet objectives
- Use only the tools necessary for the projects
- Significant improvement expected.

Change:

TQM,

- Within departments
- Incremental
- Seldom based on customer critical criteria
- No time urgency.

Six Sigma

- Best results when focused on customer
- Business process focus
- Crosses departmental functions
- Significant improvement for each project
- Time frame part of scope.

Organization:

TQM,

- Separate organization
- Not accountable to the business unit
- Collection of "experts"

- A career
- Not a respected or strong area of the corporation
- Parking place for ended careers.

Six Sigma

- Champion reports within the Business
- Black Belts are in the Business Unit
- Black Belts are expected to return to line function
- Quality Council of Senior Leaders and Champions.

Focus:

TQM,

- Manufacturing
- Products
- Little on service
- Little on logistics
- Little on marketing.

Six Sigma

- All business processes
- Non-manufacturing are often the largest opportunities

Six Sigma road map to achieve Total Quality:

1. Leadership Commitment: Top management not only initiates Six Sigma deployment, also plays an active role in the whole deployment cycle. Six Sigma starts by providing senior leadership with training in the principles and tools it needs to direct the development of a management infrastructure to support Six Sigma.

This involves reducing the levels of organizational hierarchy and removing procedural barriers to experimentation and change.

2. Customer Focus: Systems are developed for establishing close communications with "external customers" (direct customers, end-users, suppliers, regulatory bodies, etc), and with internal customers (employees). From upstream suppliers to ultimate end-users, Six Sigma eliminates the opportunities for defects.

3. Strategic Deployment: Six Sigma targets a small number of high-financial leveraged items. It focuses the company's resources: right support, right people, right project, and right tools, on identifying and improving performance metrics that relate to bottom-line success.

4. Integrated Infrastructure: The Leadership Team defines and reviews project progress. The Champion acts as a political leader and removes the barriers for the project team. The Master Black Belt acts as a technical coach and provides in-depth knowledge of quality tools. The Black Belt controls the project while the Green Belt supports the Black Belt - together they form the Six Sigma Project Teams. In addition, the incentive and recognition systems motivate the project teams to achieve the business goals.

5. **Disciplined Framework:** Six Sigma projects are implemented using the Define, Measure, Analyze, Improve and Control disciplined road map. This DMAIC discipline sets up a clear protocol to facilitate internal communication. In addition, from a business perspective, Six Sigma is also a framework for continuous business improvement.
6. **Education and Training:** Six Sigma believes that true commitment is driven by true understanding. As a fact-based methodology, it intensively utilizes quality and statistical tools to transform a practical problem to a practical solution. Thus, a top-to-bottom training is conducted in Six Sigma philosophy and system improvement techniques for all levels.

Six Sigma V/S. Total Quality Management (TQM)

In some aspects of quality improvement, TQM and Six Sigma share the same philosophy to assist organizations to accomplish Total Quality. They emphasize the importance of top-management support and leadership. Both approaches make it clear that continuous quality improvement is critical to long-term business success.

Unlike TQM, Six Sigma was not developed by technicians who only dabbled in management and therefore produced only broad guidelines for management to follow. The Six Sigma way of implementation was created by some of America's most gifted CEOs - people like Motorola's Bob Galvin, Allied Signal's Larry Bossidy, and GE's Jack Welch. These people had a single goal in mind: making their businesses as successful as possible. Once they were convinced that tools and techniques of Six Sigma could help them do this, they developed a framework to make it happen.

TQM v/s. Six Sigma

Table 1 : Differences between TQM and Six Sigma

TQM	Six Sigma
A functional specialty within the organization.	An infrastructure of dedicated change agents. Focuses on cross-functional value delivery streams rather than functional division of labour.
Focuses on quality.	Focuses on strategic goals and applies them to cost, schedule and other key business metrics.

Motivated by quality idealism.	Driven by tangible benefit for a major stockholder group (customers, shareholders, and employees).
Loosely monitors progress toward goals	Ensures that the investment produces the expected return.
People are engaged in routine duties (Planning, improvement and control)	"Slack" resources are created to change key business processes and the organization itself).
Emphasizes problem solving.	Emphasizes breakthrough rates of improvement.
Focuses on standard performance, e.g. ISO 9000.	Focuses on world class performance, e.g., 3.4 PPM error rate.
Quality is a permanent, full-time job. Career path is in the quality profession	Six Sigma job is temporary. Six Sigma is a stepping-stone; career path leads elsewhere.
Provides a vast set of tools and techniques with no clear framework for using them effectively.	Provides a selected subset of tools and techniques and a clearly defined framework for using them to achieve results (DMAIC).
Goals are developed by quality department based on quality and criteria the assumption that what for is good quality is good for the organization	Goals flow down from customers and senior leadership's strategic objectives. Goals and metrics are reviewed at the enterprise level to assure that local sub-optimization does not occur.
Developed by technical personnel.	Developed by CEOs.
Focuses on long-term results. Expected payoff is not well-defined.	Six Sigma looks for a mix of short-term and long-term results, as dictated by business demands.

TQM provided very broad guidelines for management to follow. Guidelines so abstract and general that only the most gifted leaders were able to knit together a successful deployment strategy for TQM.

Business magazines and newspapers reported widespread failure of TQM efforts. True, solid research showed that organizations which succeeded in successfully implementing TQM reaped

substantial rewards. But the low probability of success deterred many organizations from trying TQM. Instead, many organizations opted for ISO 9000. ISO 9000 promises not world-class performance levels, but “standard” performance. But it provides clear criteria and a guarantee that meeting these criteria will result in recognition. In contrast, TQM offered a mushy set of philosophical guidelines and no way to prove that one had accomplished their quality goals.

Total quality control, propounded in 1950, showed that product quality could be improved by expanding quality efforts into upstream areas such as engineering and purchasing. But despite these successes suffered from a number of shortcomings. For example:

- Focus is emphasized on quality and ignored other critical business issues. Quality trumped everything else. Of course, this made no business sense and often leads to organizations that failed despite improved quality.
- To create a quality specialty that suffered from all of the same sub-optimization problems as other functions within the organization. Despite all of our talk about a systems perspective, when push came to shove we fought for our point of view (and our budget) just like everyone else. In the typical organization this resulted in other departments considering “quality” to be the turf of the quality department. Thus, they backed off of-or never started-efforts of their own.

- Emphasis is given to minimum acceptance requirements and standards, rather than striving for ever increasing levels of performance.
- An infrastructure for freeing up resources to improve business processes was never developed.
- A career path was developed in quality. Quality professionals tended to lack subject matter expertise in other areas of the company. This division of labor, combined with functionally specialized organization, made it difficult to improve quality beyond a certain level.

The CEOs were able to see what the problems were, and to create an approach that fixed them. Six Sigma addresses all of these issues.

- Six Sigma extends the use of the improvement tools to cost, cycle time, and other business issues.
- Six Sigma discards the majority of the quality toolkit. It keeps a subset of tools that range from the basic to the advanced. Six Sigma discards esoteric statistical tools and completely ignores such staples of the quality professional as ISO 9000 and the Malcolm Baldrige criteria. Training focuses on using the tools to achieve tangible business results, not on theory.
- Six Sigma integrates the goals of the organization as a whole into the improvement effort. Sure, quality is

good. But not independent of other business goals. Six Sigma creates top-level oversight to assure that the interests of the entire organization are considered.

- Six Sigma strives for world-class performance. The Six Sigma standard is 3.4 PPM failures per million opportunities. It goes beyond looking at errors. The best of the Six Sigma firms try to meet or exceed their customer's expectations 999,996.6 times out of every million encounters.
- Six Sigma creates an infrastructure of change agents who are not employed in the quality department. These people work full and part-time on projects in their areas or in other areas. Six Sigma Black Belts do not make careers in Six Sigma. Instead, they focus on Six Sigma for two years and then continue their careers elsewhere. Green Belts work on Six Sigma projects while holding down other jobs. These subject matter experts are provided with training to give the skills they need to improve processes. Six Sigma "belts" are not certified unless they can demonstrate that they have effectively used the approach to benefit customers, shareholders, and employees.

Conclusion

Six Sigma's approach and deployment makes it distinguishable from other quality initiatives. The Six Sigma approach involves the use of statistical tools within

a structured methodology for gaining the knowledge needed to achieve better, faster and less expensive products and services than the competition. The repeated, disciplined application of the master strategy on project after project, where the projects are selected based on key business objectives, is what drives dollars to the bottom line, resulting in impressive profits. Moreover, fueled by the bottom line improvement, top management will continuously be committed to this approach, the work culture will be constantly nurtured, customers will definitely be satisfied, and Total Quality will ultimately be achieved. The overall essence of this paper highlights the detailed and conclusive proceedings of TQM and Six Sigma to face the obvious challenges by the organizations in creating sensational transforming procedure.

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