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# Six Sigma Leadership: The Key to Sustaining Contemporary Quality Programs

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## Overview

Six Sigma methods represent a very significant advance in the application of quality principles to produce business impact. For many companies, these enhanced quality techniques have had a profound impact on business results because they represent a more systemic and systematic method (vs. a focus on compliance with standards).

Part of this broader approach has historically focused on human factors - training and recruitment in particular. This paper, however, highlights how integrating critical leadership development best practices into Six Sigma initiatives through an organized program in concert with the mainstream approach can significantly enhance overall impact.

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## Background

Six-Sigma methodology, formulated and implemented at Motorola starting in 1984, has become a mainstream set of quality best practices. The major benefit of institutionalizing quality principles was established by Deming decades ago. Since that time some companies have made quality a competitive advantage.

For most organizations, however, quality has been synonymous with compliance to established standards. This limited perspective often produces limited results and is viewed by managers and employees in the trenches with "fad of the month" indifference or even cynicism.

So why is Six Sigma different from previous quality initiatives such as TQM or continuous process improvement? The concrete goal of Six Sigma (i.e., 3.4 defects per million opportunities) is more of a metaphor than an achievable business reality in most cases.

The power of Six Sigma, instead, stems from a fundamental change in the way of doing business – a data-driven approach to producing business excellence and customer value. While Six Sigma encompasses the techniques of previous quality approaches, it applies additional key principles. In particular, this approach significantly broadens the concept of quality to include an intense focus on customers and the methods by which "value" is added in all aspects of business operations and relationships.

The implementation of most Six Sigma programs focuses primarily on operational issues, such as customer requirements, process and product defects, and business metrics.

In many instances, the intense requirements for mobilizing support, providing institution-wide Green Belt training, and selecting and completing projects causes organizations to ignore more systemic issues.

In fact, the most common barriers to success we encounter in Six Sigma programs stem from leadership issues. (See Figure 1)



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**Figure 1: Most Common Barriers to Six Sigma Success**

- Lack of vision and alignment between business strategy and Six Sigma goals
- Lack of commitment, resources, or sponsorship
- Lack of an overall systems perspective
- Failure to confront cultural issues up front
- Lack of milestones or staged successes
- Lack of persistence over time
- Lack of communication across organization boundaries (e.g., successes, problems, best practices)
- Failure to confront retrenchments and noncompliance
- Failure to update and refine approach based on experience

In contrast, high-impact Six Sigma programs either implicitly or explicitly apply a range of critical leadership principles required for motivating, aligning, and empowering the workforce (See Figure 2).

**Figure 2: Guiding Principles of Successful Six Sigma Programs**

- The initiative must be a total systems effort (a way of doing business versus a program)
- The implementation is a long-term process with many steps, inevitable setbacks, and necessary revisions in strategy, attitudes, and practices
- The practices must ultimately be fully owned by an empowered workforce (i.e., become part of normative business practice)
- The initiative requires significant new leadership skills, attitudes, and behaviors that must be defined, trained, coached, facilitated, and institutionalized over time



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Unfortunately, understanding or even prescribing these enabling best practices alone rarely works. Institutionalizing a more systemic, business-, and customer-oriented approach to quality means creating new approaches to strategy development, process design and improvement, project selection and management, team and network creation, and performance metrics and management. This new way of doing business is often sub-optimized because organizations do not recognize and confront the need for a profound shift in leadership requirements throughout the organization. We have defined three leadership interventions for Six Sigma success beyond basic program elements:

- Defining and developing competencies,
- Providing learning and support for Six Sigma-specific leadership skills, and
- Developing and implementing strategies for learning transfer and sustainability.

Each of these program enhancements will be described separately below.

## Six Sigma Leadership Competencies

Since people capabilities frequently become the primary bottleneck for Six Sigma success, we strongly advocate a formal approach for acquiring competencies to support Six Sigma. Note that we think of competencies as context-specific success factors. Our formal definition highlights that "competencies are themes including the behaviors that encompass the knowledge, skills, attitudes, motives, and temperament which distinguish excellent performers".

We generally recommend implementing competency-based leadership development in parallel with operational changes. For example, Six Sigma applies the following major workflow elements as part of its core approach. In most cases, training for each of the following five process steps is part of initiating the program.

**Define (D)**: Defining specific business issues; deciding on key success factors for the business (e.g. competitive business model, key customers/markets, customer needs [customer Y's], etc.) and articulating critical areas to change to produce internal and external value.

**Measure (M)**: Measure the current state with appropriate metrics related to the



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business issue or process.

**Analyze (A)**: Gather data and apply appropriate analyses – statistical and otherwise- to generate hypothetical changes.

**Improve (I)**: Identify, test, and implement high-impact strategies and tactics to decrease "errors/deficits" maximally.

**Control (C)**: Create methods for stabilizing operations and developing practices and protocols for making change part of normative business practices.

To attain maximum impact, institutionalizing these interventions require a range of new behaviors in leaders. Based on our research about Six Sigma approaches we consistently see three critical themes related to the Six Sigma leadership competencies:

1. New leadership competencies are required in the following areas:

- Business Strategy Alignment
- Networking and Strategic Influence
- Coaching and Consulting

While lack of basic data analysis and problem-solving skills, poor planning, and limited resources and commitment are among the most common causes of early Six Sigma failures, leadership factors have the most impact on an organization's ability to sustain and deepen the overall business payoff of Six Sigma programs.

2. Leaders at all organization levels must master a range of new competencies, such as:

- Strategic Business Perspective
- Systems Thinking
- Change Enablement
- Virtual Teamwork
- Strategic Influence
- Coaching (up, down, and across organization boundaries)

These factors represent the selected behavioral characteristics leaders exhibit across all Six Sigma phases to support successful implementation. For example, to maintain a strategic focus related to Six Sigma goals, leaders must exhibit strategic business perspective. (See Figure 3).

Since Six Sigma initiatives universally require the resources and focus of a special status, competencies such as change leadership; systems thinking and virtual teamwork skills are required to support the transition to



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practices that become part of day-to-day activities. While project selection and implementation is at the core of Six Sigma methodology, a consistent process improvement mindset (e.g., current process metrics and capabilities, new process needs, etc.) is an even more important contributor to overall success.

**Figure 3: What Does a Competency Look Like? Strategic Business Perspective**

- Maintains the business team's focus on key customer satisfaction factors (e.g., customer Y's)
- Clarifies the key success factor that drive successful business performance (e.g., cost reduction, market share, new product introduction, etc.)
- Analyzes trends/long-term plans and determines the financial implications of various business strategies
- Leads the team to prioritize quality project selection processes based upon business impact (e.g., reduce risk/cost, improve productivity/profitability, financial impact of implementation)
- Develops and/or tracks appropriate financial and other quantitative measures of projects (e.g., impact on customer Y's)
- Identifies and leverages appropriate concepts, new tools and methods across projects and business settings

3. Leaders in various Six Sigma roles require significantly different competencies to support success (See Figure 4). In our experience, increasing scope, scale, and complexity in leadership roles changes the behaviors needed for success. In other words, the competencies that produce success at one level of responsibility will not support excellent performance at a higher or more strategic level.



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**Figure 4: Six Sigma Competencies by Role**

| | GREEN BELT | BLACK BELT | MASTER BLACK BELT | FUNCTIONAL LEADER |
|---|---|---|---|---|
| Strategic Perspective | • Business Acumen | • Business Acumen<br>• Change Enablement | • Business Acumen<br>• Change Leadership<br>• Systems Thinking | • Visioning and Alignment<br>• Strategic Business Perspective<br>• Customer Focus |
| Operational Focus | • Project and Process Management<br>• Self-Management and Organization<br>• Data Affinity | • Project and Process Management<br>• Results Orientation<br>• Data Affinity | • Results Orientation<br>• Project Selection and Management | • Process Focus<br>• Data Orientation |
| Network Development and Support | • Teamwork | • Team Leadership | • Networking and Influence | • Cross-Team Integration<br>• Decision Making |
| Relationship Management | • Relationship Building and Influence | • Relationship Building and Influence<br>• Coaching and Mentoring | • Coaching and Mentoring | • Networking and Strategic Influence<br>• Performance Management (Developing the work environment) |



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## Learning and Development Strategies for Six Sigma Leadership

Since some of the new competencies required can take years to develop, we recommend articulating, training, and providing experiential learning to grow the new success factors from the beginning of the Six Sigma program.

For example, in a project done for General Electric over the past four years, we first performed a series of interventions to determine key barriers and potential success factors for optimizing Six Sigma impact. There were a few major outputs of the first phase of this initiative:

- A competency profile for Master Black Belts,
- A competency-based leadership course for Master Black Belts and,
- A developmental toolkit for continuous learning.

A second phase of intervention focused on creating success profiles for the Black Belt role, an accompanying course, concentrating on virtual teamwork (taught virtually), and an enhanced developmental toolkit. The third phase entailed creating a self-service website for asynchronous support and learning (See Figure 5 for illustration of a generic version of a home page and table of contents of an online toolkit). Competencies and linked learning opportunities for all Six Sigma roles and a range of other self-directed learning and coaching tools.

In our experience, the most successful learning and development programs for Six Sigma include formal training, key developmental experiences, and ongoing access to tools/job aids to support best practices. This multi-dimensional approach offers a range of advantages, including:

- Appeal to diverse learning styles
- Transfer of learning support to support skills practice on the job
- High levels of distributed learning and self-directed skill development
- Adequate depth and length of skills practice to acquire more strategic competencies



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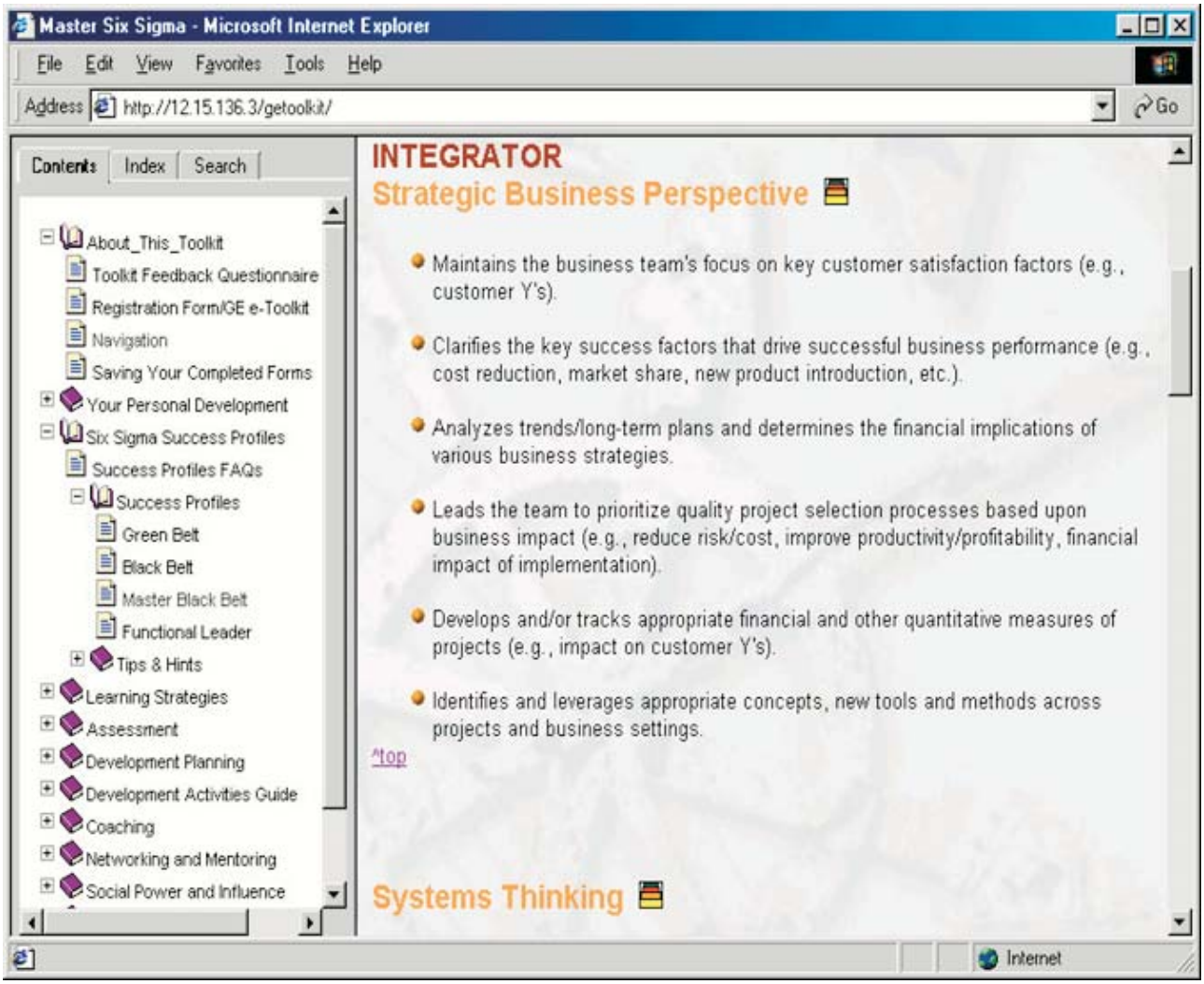
**Figure 5: Sample Online Toolkit**




## Sustainability Best Practices

Ensuring culture, process and mindset change is the goal of all Six Sigma efforts. Ultimately, the key driver of this transformation is leadership. But, what are the best methods for supporting the change? We have found that the following practical steps promote sustainability best:

**Metrics should be rigorously applied to leadership interventions**. Traditionally "soft" skill initiatives have not been subjected to the same rigors as operational projects and programs. Using Six Sigma techniques to manage Six Sigma leadership programs



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not only works but also promotes an attitude of accountability and enhances organization acceptance. For example, we have used sequential assessment data to track learning impact with Master Black Belt leaders. The data collected over time helped us:

- Target specific behaviors to change in both face-to-face training and experiential learning.
- Develop strong correlations between behavior change and specific learning interventions (and, thus, change training design to enhance behavior change).
- Clarify behaviors to target for more long-term, continuous learning approaches.
- Track program impact across class offerings.

In another related project, we used competency gaps as DPMO's (defective parts per million opportunities) and identified projects to address the most critical gaps related to customer CTQ's (critical to quality issues).

Perhaps most important, we believe that Six Sigma metrics can and should be applied to leadership programs and that the formal use of measurements prevents rework, makes learning processes more efficient, and reduces the cycle time of leadership development significantly.

**E-Learning is not only possible but critical to impact in current organizational work settings**. Six Sigma efforts are almost universally implemented using matrix management in relatively virtual work environments. This context makes enabling technologies critical for success. In our experience, one of the key capabilities for growing quality leadership – particularly in large organizations – is e-learning. On-line learning resources can take many forms, ranging from live, synchronous sessions and asynchronous training modules to web-based toolkits used for just-in-time access to job aides. Based on several projects focusing on approaches for leadership enhancement, we have learned the following lessons about sustainable, e-based learning:

"Blended" learning methods work surprisingly well, even for "soft" skills, if the sessions are carefully planned; divided into short, focused modules; supported by tools/job aides encompassing best practices; and designed



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to replace context lost from face-to-face meetings.

Support, particularly for ongoing learning, needs to be very accessible and designed to enable, document and track specific interventions. For example, as an outcome of one project focused on improving the use of on-line tools, we discovered a general rule related to learning ergonomics (we call it the "1-5-15 Rule"). We found that users of support tools and other job aides would not use them unless:

- They could access materials in one minute,
- They could plan an intervention in five minutes or less, and
- They could make a meaningful impact in 15 minutes or less.

This principle is one of the major drivers we now use in designing learning systems for leadership.

One of the most interesting discoveries about available web resources is that end users tend not to take initiative in accessing even extremely helpful materials until they become acculturated to their use. As such, we now apply "push" strategies to help end users make the transition to autonomous use of tools. These include interventions such as:

- Publishing a new tool every few months with e-mail links to the learning site
- Using e-mail "advertisements" with a site link, citing new uses for tools, case examples, new materials available, etc.
- Providing intermittent web training or user sessions

Finally, technologies that enable more "just-in-time" support produces greater impact. For example, we frequently create "home pages" or customized portals for individual users to users to personalize and speed up access to needed materials.

Integrated approaches to leadership development work best. Many leadership programs focus primarily on training as the primary delivery vehicle. We have found that approaches which include multiple resource types and multiple interventions over time produce deeper results.

While a leadership curriculum (often



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encompassing "blended" synchronous, asynchronous, and face-to-face learning activities) should be a key program element, we recommend offering vigorous supports for on-the-job learning (e.g., developmental assignments, job expansion opportunities, coaching and mentoring, etc.) and a strong linkage (usually through competency evaluation) to the performance management process.

## Summary

Six Sigma programs should be a transformative experience for an organization. The key practical suggestions we recommend for program design and rollout include:

- Establishing and communicating Six Sigma leadership success factors (i.e., competencies by role)
- Providing a competency-based curriculum or course (preferably for each major role) that focuses on critical leadership topics
- Creating and implementing an assessment and development planning process (often using 360 assessments) that helps identify and address competency gaps
- Applying behavioral metrics to measure progress and institute continuous program improvements
- Providing ongoing support, tools and job aids for continuous learning and sustainability

No matter what program elements are implemented, a focus on identifying, developing and institutionalizing Six Sigma leadership practices is a key ingredient for long-term impact.



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