



Adopting Quality Management for Business Success



Abstract

Many organizations are taking advantage of Quality Management methodologies (such as Six Sigma®) to improve productivity, efficiency, and customer satisfaction. These methodologies require employees to perform set tasks and adhere to structured processes, involving changes to work habits that can sometimes be disruptive to organizations. Familiar, integrated IT tools can streamline Quality Management tasks and reduce user resistance, enabling organizations to get the maximum benefit from Quality Management techniques at lower risk. Microsoft delivers an integrated portfolio of offerings to address the challenges of Quality Management with the benefits of familiarity, ease of integration, and flexibility.

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Executive Overview

“Quality Management” refers to any systematic, data-driven approach that organizations use to improve operations. Since the mid-1980s, a number of specific methodologies for Quality Management have emerged, including Six Sigma,[®] ISO, TQM, and others (see sidebar on page 2 for an overview of these methodologies). Although Quality Management has been traditionally associated with manufacturing or IT, the philosophy of Quality Management delivers tangible benefits to any process, such as greater cost-control, visibility, and alignment with strategic objectives. Consequently, other industries and departmental groups, from marketing to customer help desks, have adopted Quality Management techniques as organizations strive to meet the challenges of increasing complexity and competition. Despite the promised benefits, however, many organizations experience pain when implementing Quality Management processes due to resistance to change, inadequate tools, and poor internal communication.

The spread of Quality Management across the business world has led to the development of technologies to help organizations plan, track, and manage projects according to the specific procedures set forth by their chosen methodology. Today, discrete project management tools are coalescing into integrated portfolios of solutions to address Quality Management at all points in the enterprise. Microsoft[®] is among those leading the way in this emerging market.

This paper will indicate how Microsoft’s Quality Management offering—specifically Microsoft’s Six Sigma[®] Solution built on the Microsoft Office Enterprise Project Management Solution platform—can help organizations overcome commonly experienced barriers to a successful implementation through the use of Microsoft technology and methodology and help them to achieve maximum benefit from their Quality Management initiatives.

This paper will:

- **Provide a brief overview of the Quality Management process and identify common Quality Management practices**
- **Identify the overall goals and pains of customers who implement Quality Management methodologies**
- **Identify areas where information technology (IT) can reduce pains and improve practices**
- **Compare various IT approaches to Quality Management in the enterprise**
- **Present the benefits and features of Microsoft’s Quality Management offering**
- **Demonstrate Microsoft’s own experience in implementing Six Sigma Quality Management processes in its Operations Technology Group (OTG) as a case study of a successful deployment**

Quality Management at a Glance

The Customer

- Fortune 500 or Global 500 (large enterprise)
- Decision maker: C-level, VP, or Senior Director in charge of Quality Management
- Customer benefits: cost control, quality assurance, executive visibility into management processes, consistent project management across enterprise
- Customer pains: cost and complexity of implementation, lack of user acceptance, limitations of technology tools, lack of integrated solution

Microsoft Solution

- Enterprise Project Management platform
- Microsoft® Office Solution Accelerator for Six Sigma®
- Microsoft® Windows SharePoint™ Services
- Microsoft® BizTalk® Server
- Microsoft® Office System 2003

Microsoft Differentiators

- Simplified automation of Quality Management tasks
- Familiar software tools to speed implementation
- Improved communication and collaboration tools for Quality Management
- Integration and flexibility of technology for ease of management
- Ability to leverage current investment

Evidence

- Microsoft Operations Technology Group (OTG)
- Dr. Reddy's Laboratories
<http://www.microsoft.com/resources/casestudies/CaseStudy.asp?CaseStudyID=15139>
- More information on the Microsoft Enterprise Project Management platform at
<http://office.microsoft.com/en-us/FX010857951033.aspx>
- More information on the Microsoft Office Solution Accelerator for Six Sigma at
<http://newmarkets/SixSigmaAccelerator/default.aspx>

The Role of Quality Management in Business Today

The implementation of Quality Management systems is shown to dramatically improve the performance of organizations. In the United States, the Malcolm Baldrige National Quality Award is the highest honor for performance excellence. Studies by the National Institute of Standards and Technology (NIST) and the U.S. General Accounting Office have found that investing in quality principles and performance excellence pays off in increased productivity, satisfied employees and

¹ "Selecting the Right PDA Technology and Avoiding 'Tool Hype'," Product Development & Management Association 2003 sponsor insert, January 2004

customers, and improved profitability—both for customers and investors. For example, NIST has tracked a hypothetical stock investment in Baldrige Award winners and Baldrige award applicants. *The studies have shown that companies who adopt systematic approaches to Quality Management soundly outperform the Standard & Poor's 500.*

Organizations have recognized the value of Quality Management initiatives as a means of staying competitive and driving revenues; and a multitude of Quality Management programs have been developed and implemented by organizations around the world.

While the concept behind Six Sigma has stayed fundamentally the same since Motorola pioneered the methodology in 1986, the methods and technologies used to administer Six Sigma and other Quality Management initiatives have evolved from ad-hoc processes developed by individuals and small factions focused on quality to a highly integrated set of tools and systems developed to manage performance across multi-national corporations.

Quality Management Methodologies

There are many Quality Management methodologies in wide use today. Each methodology may indicate a different measure of success, be motivated by unique drivers, or apply to broader or narrower functional business units. For example, many methodologies, including Six Sigma and variations on Six Sigma, are driven by customers' expectations. Six Sigma is a term that refers to measuring the standard deviation from the mean. For example, a Six Sigma performance with regard to product quality would mean delivering to the customer a perfect, defect-free product, 3.4 times out of one million. While ISO 9000 also prescribes to delivering high quality to the customer, it makes the additional demand of achieving optimal operational performance in adhering to regulatory requirements. These methodologies also differ in their scope: ISO 9000 criteria, for example, only encompassed 10 percent of the criteria that the Malcolm Baldrige Quality criteria measures.

Despite the differences in these methodologies, each has the ultimate goal of improving performance and quality and, therefore, shares steps commonly

Quality Management Methodologies

- **Malcolm Baldrige**
Provides a set of criteria to improve performance by focusing on two goals: delivering ever-improving value to customers and improving the organization's overall performance.
- **LEAN** Employs tools and techniques to satisfy customers by identifying and optimizing processes that develop and deliver products to the customer.
- **Total Quality Management (TQM)** Improves quality by teaching managers and workers to eliminate waste and bureaucracy, save money, and make resources available for the specific activities that satisfy customers.
- **Balanced Scorecard**
Extends the key concepts of TQM, including customer-defined quality, continuous improvement, employee empowerment, and measurement-based management and feedback.
- **ISO 9000** A family of international industry standards that helps enterprises—typically IT organizations—improve their performance with a framework for building a Quality Management system. Primarily develops repeatability and consistency for doing the same job the same way every time.
- **Six Sigma** A customer driven, five-step quality methodology to: define opportunities, measure performance, analyze opportunities, improve performance, and control performance that aims to minimize defects in new and existing products and services.

found in the Six Sigma methodology. These include:

- **Defining strategic goals:** This will typically set the stage for measurement of organizational objectives.
- **Reviewing and analyzing:** Once goals and optimal measurements have been defined, the organization must conduct a continual review and analysis of performance data and measurements. This analysis will indicate where opportunities for improvement lie in the overall organizational process.
- **Assessing and optimizing:** As new projects are funneled into the improvement cycle, the organization must then continue to review performance and create a plan of action for maintaining optimal performance.

Pains for Companies Implementing a Quality Management Methodology

Many of these common pain points can be addressed by the use and implementation of the right tools. In a project that incorporates multiple business units, requires a change in employees' day-to-day task list, mandates usage of new tools and systems, and requires complex communication between all members, there are many points at which an implementation can break down. It is crucial that Quality Management professionals, team members, and executives have tools that help, rather than hinder, a successful Quality Management implementation.

Common Pain Points	Technology Tools to Reduce Pain
<ul style="list-style-type: none"> • Resistance to organizational change 	<ul style="list-style-type: none"> • Use of familiar, widely-adopted tools reduces learning curve and increases user adoption. • Visualization and diagramming tools allow for easy display of complex processes and data.
<ul style="list-style-type: none"> • Data aggregation challenges 	<p>Technologies and tools that are easily integrated can serve as the basis for an enterprise-wide Quality Management platform, streamlining processes and ensuring data integrity as it moves across an organization</p>
<ul style="list-style-type: none"> • Inflexible tools 	<ul style="list-style-type: none"> • Tools that provide a methodology framework while allowing users to customize them as needed help teams drive efficiencies within their own projects.
<ul style="list-style-type: none"> • Poor communication 	<ul style="list-style-type: none"> • Collaborative tools that can be used within the context of the process and integrate with back-end systems and a centralized project server can enhance communication across the enterprise.

Technology Facilitates Program Adoption

Quality Management initiatives often fail because of poor user adoption. For this reason, customers investing heavily in the implementation of Quality Management initiatives should pay special attention to these key issues to maximize their chances for success:

- **Familiarity:** Smooth the path to success by letting end-users work with the tools they use every day.
- **Integration:** Integrate technologies by design to enable content authoring, communication and collaboration, and process management across the entire enterprise.
- **Leverageable investments:** Look to leverage current investment in technology, support, and user expertise to speed and simplify the implementation of Quality Management initiatives for fast return on investment (ROI).

Technology's Role in Improving Performance

The effective use of technology can enable the rapid, cohesive, and consistent deployment and administration of any Quality Management initiative. From the initial stages of defining process requirements to the final stages of optimization and maintenance, technology plays a key role in any Quality Management initiative.

Define Strategic Goals

The initial planning and requirement definition stages necessitate the alignment of business processes with critical quality/customer requirements. Visualization and graphical tools help map processes and work flows and create data analysis graphics.

Teams and leaders can use knowledge management and authoring tools to develop and document program guidelines, then track the project status using a Project Management tool and applications.

Review and Analyze

Establishing a performance baseline requires gathering and analyzing existing performance data, using statistical analysis tools, such as Minitab, to identify input, process, and output indicators. Data analysis tools can also identify root causes of sub-standard performance.

Assess and Optimize

Performance evaluation is an ongoing process, where the results feed back into the process to drive improvements. Potential process improvements can be modeled with process mapping or diagramming tools. Graphic tools help team members visualize process possibilities.

² "What Ails the Pharmaceutical Market?" October, 2003

As team members arrive at solutions, they must communicate and gain support of their recommended quality solutions from stakeholders using visualization and presentation tools.

Process mapping tools can identify the best ways to integrate improvements into daily work processes. Best practices can be developed and documented using knowledge management tools, then disseminated through the organization via portals, team workspaces, and structured and ad-hoc collaboration technologies. This communication and collaboration infrastructure can also be used for training, team evaluation, and communicating standards and procedures for continued success.

Market Overview

Most software offerings are designed specifically for a single Quality Management methodology. While the market for Quality Management technology covers multiple methodologies, the scope and capabilities of vendors offering Six Sigma solutions is representative of the whole. Six Sigma offerings currently available include both consultative and software solutions designed to support Six Sigma and other Quality Management initiatives. **These specialized software tools often require training and ramp-up time for team members, with associated risks, costs, and delays that can lengthen time to ROI and endanger the overall project success.**

Proprietary, methodology-specific tools also **increase the complexity** by adding yet another application or program that must be accessed throughout the workday. And because these tools are often highly customized, they **may not integrate well** with the productivity applications in general use.

Many of the leading Quality Management tools are offered by privately-held, mid-sized companies that may lack the resources, track record, and stability that guarantee successful quality initiatives. This introduces **further risks in terms of future support and investment protection** for customers.

The Microsoft Quality Management Approach

Microsoft's Quality Management approach addresses organizations' pain points through a combination of learning and training tools, collaboration tools, and metrics tracking tools for project managers, team members, and management involved in Quality Management endeavors. Microsoft arrived at this approach by consulting with corporations that have implemented Six Sigma and incorporating key findings from its own experience implementing Six Sigma processes.

By adapting widely-used information worker productivity tools to the strict discipline of Quality Management methodologies (including, but not limited to, Six Sigma), Microsoft's approach promises several important **differentiating benefits from competitive offerings**:

- **Simplified processes:** Microsoft's integrated set of products speed and simplify many typical Quality Management tasks, from data analysis and visualization to reporting to cost assessment.
- **Ease and speed of adoption:** The use of familiar Microsoft products allows users to quickly leverage their current skills and expertise in the new context of Quality Management processes.
- **Better communication:** Microsoft products integrate powerful communication and collaboration technologies into the entire platform, making it contextual and intuitive to share information among team members as part of the workflow process or as a way to resolve questions and problems more quickly.

The Microsoft Quality Management Portfolio

Microsoft products serve as an integrated toolset that supports any Quality Management task. The Microsoft Office Solution Accelerator for Six Sigma functions as a framework for implementing and managing a Six Sigma Quality Management initiative and touches the process at these key points:

- **Information management:** The information management, workflow, communication, and project management functions of a Quality Management initiative support Quality Management professionals in their management of data-driven projects.
- **Data sharing across the enterprise:** Microsoft Project, Sharepoint, BizTalk, and Office integrate smoothly to serve as an organization-wide Quality Management platform.
- **Data mining and reporting:** Because the Microsoft Quality Management approach is built upon integrated products and technologies, data mining and reporting becomes a simple task of exporting data from back office HR and financial systems to integrated presentation applications like Visio and PowerPoint and storage and formatting tools like Excel and Word.

Microsoft Quality Management Products

Microsoft® Office Suite
Excel macros can be used to customize statistical tools. Microsoft® Visio® lets Six Sigma practitioners create templates and visualize key data and information. Its diagramming and smart capabilities permit customization and flexibility in views. Presentation and documentation templates can be standardized throughout an enterprise.

Microsoft® Office Enterprise Project Management (EPM) EPM is implemented as the project and portfolio management platform.

Microsoft® Windows SharePoint™ Services
This collaborative document management service provided through the Windows 2003 operating system can enhance the enterprise-wide adoption of the initiative through improved access to project documentation and data to enhance Quality Management project lead effectiveness.

Microsoft® BizTalk® Server
This server lets all practitioners share and transfer information between the Six Sigma system and other enterprise applications, such as financial management software, to facilitate communication, process, and work flow.

Microsoft Office Solution Accelerator for Six Sigma Provides a reliable methodology framework from a stable and established software company Based upon the Microsoft Project user experience, helps Six Sigma adopters avoid the change management issues that come with the introduction of new, proprietary software.

The Microsoft Office Solution Accelerator for Six Sigma

To successfully deploy the Microsoft Accelerator for Six Sigma , partners and IT implementers first implement the Enterprise Project Management solution. Deploying the Accelerator for Six Sigma requires just a few additional steps:

- Granting access rights to individuals
- Ensuring that the correct set of users have Microsoft Project Professional installed on their systems
- Ensuring users know how to connect to the Six Sigma project.

Once deployed, **the Microsoft Office Solution Accelerator for Six Sigma helps relieve the complexities and expenses associated with Six Sigma rollouts by:**

- Accurately reflecting the financial impact of projects
- Optimizing Six Sigma resources
- Integrating Microsoft Office and other collaboration tools with Six Sigma methodologies
- Leveraging knowledge and data gathered across the enterprise

By integrating common Microsoft collaboration tools with back-end systems through the Microsoft Office Solution Accelerator for Six Sigma , the Microsoft approach to Quality Management delivers a stack of tools and technologies that help organizations quickly reap the benefit of applying these technologies to a quality improvement methodology.

Specific Benefits to Customers

Because Microsoft's approach to Quality Management is built around common tools and platforms adapted to work within a specific Quality Management methodology, Microsoft can promise many compelling benefits for business decision-makers, end-users, and IT. These include:

- **Faster ROI** because of ease and speed of implementation, familiarity of tools, and integration of products.
- **Reduced risk of user resistance** because many users are already comfortable and familiar with Microsoft products.
- **Reduced training and support costs** because end-users and IT can leverage their existing skills with Microsoft products.
- **More productive communication within and between groups** because of the powerful communication and collaboration technologies built into Microsoft products.
- **Reduced cost and complexity across the enterprise** because Microsoft products provide a consistent platform and a consistent set of tools for Quality Management,

regardless of the business or operational setting.

- **Greater personal and organizational productivity** because Microsoft tools are built to speed up and simplify Quality Management tasks and are flexible enough to be customized to maximize each user's experience according to their work habits.
- **Better management of process workflow** using the visual process management tool that enables hyperlinks, smart shapes, and smart tags to be customized and updated real-time.

Implementing Microsoft's Solution for Six Sigma

The implementation of the Microsoft Office Solution Accelerator for Six Sigma can be broken down into five key steps:

1. Defining needs with implementation partners
2. Designing business process
3. Training participants
4. Implementing the methodology
5. Deploying the technology

Defining Needs with Implementation Partners

Partners for the Microsoft Office Solution Accelerator for Six Sigma include Microsoft Enterprise Project Management Solution consulting partners, super-regional and regional Microsoft Project partners, Six Sigma consultancies, and specialized partners dedicated to vertical industries, such as manufacturing, health care, and financial services. These consultancies will help customers identify needs and assist in the planning and building of the IT infrastructure to support the Quality Management initiative.

Designing Business Process

The initial stages of any Quality Management endeavor must include a rigorous process of defining strategic objectives, processes and their owners, measurements of success, and criteria for project selection. Because quality improvement is based on a solid understanding of current processes, and recognizing the successful and unsuccessful components of the process, it is vital to invest time mapping processes at the outset of the project to ensure success.

Training Participants

Participant training follows the business process design phase of the implementation. Project participants must be trained on the chosen Quality Management methodology and philosophy and Quality Management Project leads appointed. This training will also include ramping participants on the technologies that will be used.

Implementing the Methodology

Upon completion of the “set-up” phases of business process management and training, the final step is implementing the methodology. Each methodology will follow prescribed steps but will generally include a combination of the following: measure performance, improve performance, and control performance. Through a process of gaining insight into the success and failure of workflows and providing a framework for analysis, the ultimate goal of the implementation is to give stakeholders control over performance of projects and organizations.

Deploying the Technology

The first four steps will provide necessary inputs for planning the deployment and rollout of the Microsoft technologies to support your Six Sigma initiative. Information gathered during these phases, such as the number of planned users of the system, the types of reporting to be generated, and the organizations’ plan for increased adoption, will contribute to deploying the application infrastructure with appropriate hardware, networking capabilities, and architecture design to support the environment.

CASE STUDY: Six Sigma at Microsoft

The Microsoft Operations and Technology Group (OTG) operates the company’s internal networks, telecommunication systems, corporate servers, and line of business applications. The OTG mission extends to testing advanced project management methods that can improve operational efficiency within Microsoft and provide practical information crucial to development of new project management software.

During the past two years, Microsoft OTG has implemented the Six Sigma management approach and has begun to incorporate its methods and philosophy into the group’s projects. When properly implemented, the Six Sigma approach can yield powerful business results. However, translating Six Sigma methodologies into workable business processes can be a complex process. To achieve better results with its Six Sigma program, OTG implemented the Microsoft Office Solution Accelerator for Six Sigma .

To lead the implementation of this solution, Microsoft engaged Immedient, a Microsoft Gold Certified Solution Provider. The Solution Accelerator for Six Sigma provided Immedient with a solid foundation for their configuration of Microsoft Project, including a library of Six Sigma tools and powerful enhancements tailored to the specific needs of OTG. The Solution Accelerator enabled Immedient to deploy the solution in a timely and efficient manner with minimal risk.

Adopting the Microsoft Office Solution Accelerator for Six Sigma has enabled the OTG staff to

improve operational efficiency, deliver greater value to internal customers, and gain better insight into the financial impact of OTG Six Sigma programs. Microsoft plans to continue the Solution Accelerator deployment beyond OTG to additional business divisions through 2004.

Conclusion

Adopting Quality Management practices can help organizations dramatically improve their performance, customer satisfaction levels, and overall competitiveness. Microsoft can bring those benefits within closer reach for customers by helping to reduce the cultural and technological barriers that contribute to the risks and costs of implementing and managing a Quality Management methodology. The key pillars of Microsoft's approach to Quality Management are:

- **Familiar, productive tools** to speed user adoption and success.
- **A consistent, easily managed platform** to reduce the costs and complexity across an enterprise and enable customers to leverage current investments.
- **Flexible products and solutions** that fit specific Quality Management processes with proven results, such as Microsoft's own Six Sigma implementation.

To find out more about Microsoft's approach to Quality Management:

- URL for Microsoft Office Solution Accelerator for Six Sigma
<http://newmarkets/SixSigmaAccelerator/default.aspx>
- URL for information on the Microsoft Office Project 2003 Enterprise Project Management Solution:
<http://office.microsoft.com/en-us/FX010857951033.aspx>

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