



THE SIX SIGMA BLACK BELT PRIMER

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III. PROCESS MANAGEMENT

IT WOULD BE EASY TO DISMISS SIX SIGMA AS A FAD IF IT WEREN'T FOR THE CALIBER OF THE RESULTS IT'S PRODUCING AND THE COMPANIES ADOPTING IT.

PANDE, NEUMAN, AND CAVANAGH



**III. PROCESS MANAGEMENT
PROCESS MANAGEMENT OVERVIEW**

Process Management Overview

Process Management is reviewed in the following topic areas:

- **Process management overview**
- **Stakeholder impact**
- **Critical requirements**
- **Financial measures**
- **Performance measures**
- **Benchmarking**

Business process management (BPM) is a fundamental concept of six sigma. Efforts to improve individual (local) process components are replaced by systematic methods to understand, control, and improve (even optimize) overall business results. These methods have evolved from the basic tenets of quality and continuous improvement to address specific business objectives.



III. PROCESS MANAGEMENT PROCESS MANAGEMENT OVERVIEW

Process Management Overview (Cont'd)

BPM is focused on understanding, controlling, and improving business processes to create value for all stakeholders. Six sigma builds on classic concepts to ensure desirable results. Juran defines three principal dimensions for measuring the quality of this process:

- **Effectiveness: how well the output meets customer needs**
- **Efficiency: the ability to be effective at least cost**
- **Adaptability: the ability to remain effective and efficient in the face of change**

This clearly addresses the need for business processes to provide value to both the customer (effectiveness) and shareholders (efficiency), now and in the future (adaptability). Six sigma initiatives strive to manage the entire business process to maximize these goals.



**III. PROCESS MANAGEMENT
PROCESS MANAGEMENT OVERVIEW**

Process Management Overview (Cont'd)

Most businesses are structured as functional organizations (vertical units or “silos”) based on functional groupings such as R&D, product development, engineering, production, distribution, marketing, sales, finance, administration, information technology, etc. Each vertical function also has several vertical levels from the top executive down.

Products (goods or services) are produced across many functional boundaries and business levels. Business process management represents a major advance in quality improvement thinking by managing the entire process including those areas between functional responsibilities.



III. PROCESS MANAGEMENT PROCESS MANAGEMENT OVERVIEW

Process Elements

The SIPOC diagram is a foundation technique for six sigma management and improvement. An example is shown below:



SIPOC is an acronym for the five major elements in the diagram:

Supplier: The organization providing resources to the process of concern

Input: The information, materials, or service provided

Process: The set of action steps that transforms the inputs into outputs

Output: The final product or service resulting from the process

Customer: The person, process, or organization that receives the output



**III. PROCESS MANAGEMENT
PROCESS MANAGEMENT OVERVIEW**

Process Elements (Continued)

Six sigma relies on the SIPOC model to create, monitor, and improve closed-loop business systems for process management, process improvement, and process design/redesign. SIPOC can help everyone “see” the business from an overall process perspective by:

- **Displaying cross functional activities**
- **Providing a framework applicable to all process**
- **Helping maintain the big picture perspective**
- **Providing methods for adding additional detail**



**III. PROCESS MANAGEMENT
PROCESS MANAGEMENT OVERVIEW**

Process Elements (Continued)

When process flow charts are used with the SIPOC model, business process monitoring, control, understanding and improvement are greatly enhanced. To complete the picture, however, it is helpful to consider one additional factor: the levels of the business process.

Processes can be viewed as being both comprised of smaller micro- or sub-processes and constituents of larger macro-processes. It is often convenient to think of at least three levels of the overall process because six sigma methods and procedures change somewhat from level to level. The three main levels may be described as business, operations, and process.



**III. PROCESS MANAGEMENT
PROCESS MANAGEMENT OVERVIEW**

Process Elements (Continued)

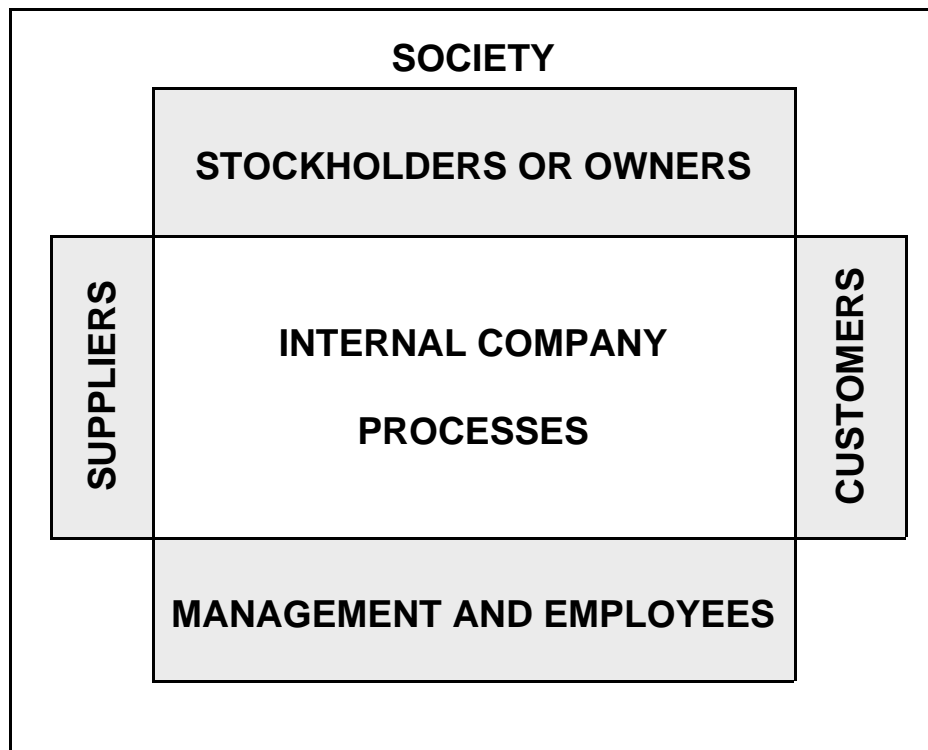
The six sigma business improvement process moves up and down the vertical levels of the organization as well as across the functional elements. Using the SIPOC process model, and understanding the differences in process levels, will make it easier to manage the process of business improvement.



III. PROCESS MANAGEMENT IMPACT ON STAKEHOLDERS

Impact on Stakeholders

Businesses have many stakeholders including stockholders, customers, suppliers, company management, employees and their families, the community, and society. Some typical business – stakeholder relationships are shown below.

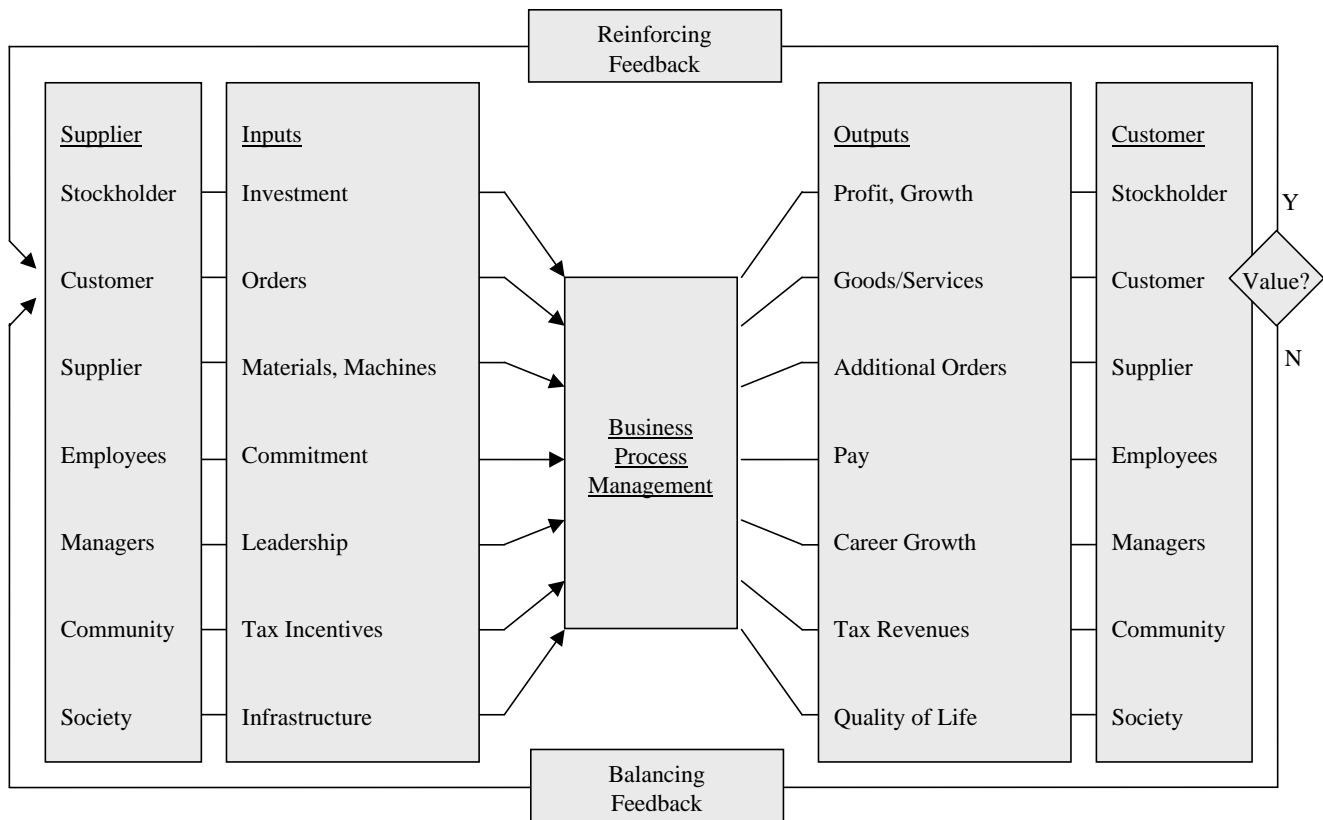




III. PROCESS MANAGEMENT IMPACT ON STAKEHOLDERS

Impact on Stakeholders (Continued)

Each stakeholder is both supplier and customer, forming many closed-loop processes that must be managed, controlled, balanced, and optimized if the business is to thrive. Communication within the entire stakeholder community is channeled through internal company processes. See the figure below.



Stakeholder Relationships



**III. PROCESS MANAGEMENT
IMPACT ON STAKEHOLDERS**

Impact on Stakeholders (Continued)

Organizational performance and the related strategic goals and objectives may be determined for:

- **Short-term or long-term emphasis**
- **Profit**
- **Cycle times**
- **Resources**
- **Marketplace response**

Goals may be set for either short-term or long-term results. American managers, educated by the business schools in financial matters, have stressed ever increasing quarterly stockholder dividends. Because of that, American managers have been criticized for their short-term outlook. Japanese and European managers have been willing to take smaller short-term profits to ensure the long-term growth of their companies.



**III. PROCESS MANAGEMENT
CRITICAL REQUIREMENTS**

Critical Requirements

Projects can be directed at any number of CTX (critical to X) requirements. Examples are listed below:

CTQ

Critical to quality improvement projects may include:

- **Simplifying product designs**
- **Aligning designs with customer requirements**
- **Meeting current marketplace quality levels**
- **Exceeding current marketplace quality levels**
- **Exceeding reliability requirements**
- **Exceeding product appearance expectations**
- **Meeting technical requirements**
- **Providing products that are more durable**

COQ

Cost of quality improvement projects may include:

- **Reducing internal and external rejections**
- **Minimizing salvage and sorting operations**
- **Reducing warranty claims**
- **Reducing product and process variation**
- **Reducing various forms of waste**
- **Eliminating unnecessary inspections**