

Six Sigma for Large Companies

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Six Sigma Infrastructure for Large Companies

For successfully implementing Six Sigma, a complete and well-connected infrastructure is necessary. The infrastructure includes: Core Team, Master Black Belt, Black Belt, Green Belt, Yellow Belt, MAIC discipline, and an incentive system.

- The Core Team defines and reviews Six Sigma projects progress, and acts as the political leader, removing the barriers for the project teams.
- The Master Black Belt acts as a technical coach and provides the knowledge of quality tools for the project team. There is typically one Master Black Belt for every 1,000 employees.
- The Black Belt controls the project. There are typically 10 to 20 Black Belts per 1,000 employees.
- The Green Belt supports Black Belt. There are typically 3 to 5 Green Belts on the Project Team with the Black Belt. There are typically 300 Green Belts per 1,000 employees.
- Yellow Belts are the balance of your population. They provide information and support to the Six Sigma project teams, and are a source for future Green Belts.
- The MAIC discipline sets up a clear protocol to expedite internal communication.
- The incentive system facilitates Six Sigma projects to generate results.

The infrastructure and the necessary training programs for different levels are described as follows:

Core Team

Six Sigma involves changing major business value streams that cut across organizational barriers. It is the means by which the organization's strategic goals are to be achieved. Top management's commitment and involvement are critical to Six

Sigma implementation. Hence, the core team is formed by top management. Its main responsibility is selecting high financial leverage projects, derived from the organization's strategic plan. While the projects are progressing, the team regularly reviews the projects. To understand the Six Sigma approach, a two-day (leadership) training program could use as a foundation selected topics from the list below:

- Six Sigma overview and implementation
- Knowledge-centered activity focus and process improvement
- Overview of descriptive statistics and experimentation
- Understanding the 10 Six Sigma Success Factors and how to deploy them throughout your organization

Master Black Belts

This is the highest level of technical and organizational proficiency. They provide technical leadership of the Six Sigma program and ensure business is self-sustaining in training. They are in-house experts in Six Sigma tools and methodology. Their roles are:

- Coach and support projects for results.
- Develop and deliver Six Sigma training.
- Assist in project identification.
- Partner with Six Sigma Champions.
- Identify and deploy best practices.

Two one-week Master Black Belt training sessions can involve the expansion of topics or addition of other related topics not included in the normal Black Belt training. The training of Master Black Belts can also involve the critique of their training of Black Belts. The training prescription in advanced quality and statistical thinking.

Black Belts

Black Belts are change agents for institutionalizing the Six Sigma improvements and methodology. Their roles are:

- Lead strategic and high impact process improvement projects.
- Master basic and advanced quality tools and statistics.
- Deploy techniques of measurement, analysis, improvement and control.

An effective approach to the training of the Six Sigma concepts is the use of four weekly modules spread over four months. Between workshop sessions, attendees apply the concepts previously learned to their projects. During this time they also get one-on-one coaching of the application of the techniques to their project.

Green Belts

They are technical process experts and change agents who work in their own functional area. Their roles are:

- Lead important process improvement projects.
- Support strategic Black Belt projects.
- Drive continuous process improvement

Green Belt training sessions that are two weeks long can include topics and exercises as desired from the Black Belt's four-week training sessions.

Yellow Belts

They are the balance of your population. They are provided 3-days of training so that they can understand and apply basic statistical concepts that are used in problem solving. They provide support to the Six Sigma project team and offer insights on root causes for the project team to investigate.

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Six Sigma Deployment Plan for Large Companies

From a practical view, it is essential to generate a master deployment plan as a road map throughout the Six Sigma implementation cycle. The master plan can be developed and divided into four phases: measure, analyze, improve, and control phases. The detailed steps for each phase are described as follows:

[1. Measure Phase](#)

[2. Analyze Phase](#)

[3. Improve Phase](#)

[4. Control Phase](#)

Measure Phase:

Top management not only initiate Six Sigma deployment, but also have to play an active role in the whole deployment cycle. Thus, the initial phase of the implementation process requires the development of an awareness of and commitment to the need for quality improvement. In this initial phase, you must develop an infrastructure to carry out the deployment, and manage the implementation process. This phase should be developed as follows:

1. **Establish leadership commitment and involvement**
 - a. The Six Sigma implementation must be driven from the top level. Top management must fund this effort and allocate the appropriate resources. They must express commitment toward this effort to the entire organization and should be involved throughout the implementation process
 - b. Senior management must assign a Management Champion to lead the Six Sigma implementation as early as possible, and make it known that this person has the authority and responsibility for the entire Six Sigma projects in the organization.
2. **Form a Six Sigma Core Team**
 - a. Top management is responsible for establishing a Six Sigma Core Team. The Management Champion is the head of the Core Team.
 - b. The Core Team has the responsibility of developing and managing the Six Sigma implementation and to assure the organization's readiness for the implementation.
3. **Team up with outside quality facilitators**
 - a. The assistance from experienced outside quality facilitators is essential to Six Sigma implementation, especially for SMEs.
 - b. They are responsible to coach the Core team in deploying Six Sigma implementation and to provide necessary training for all Six Sigma project participants in system deployment, project management, and utilization of quality tools.
4. **Provide Six Sigma deployment training**
 - a. Top management and the Core Team should attend an overview on Six Sigma to gain an understanding of the benefits and the general approach of Six Sigma implementation.
 - b. The Core Team should attend the training on Six Sigma development, deployment, and management.
5. **Schedule periodic top management reviews**
 - a. During the initial stages in defining, developing, and implementing the Six Sigma program, it is important to schedule frequent reviews with top management.
 - b. Keep top management informed of the activities involved in the Six Sigma implementation.
 - c. Encourage their commitment to the Six Sigma implementation effort and spread it to the rest of the organization.

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Analyze Phase:

The main objectives of the second phase are to identify the gaps between current processes performance and the business goals, transform the gaps into improvement projects, and establish an integrated system to support the implementation.

1. **Define business goals based on organization strategic plan.**
 - a. The Core Team must have a clear understanding of the organization's purpose, structure, and flow, including interfaces with other organizations and primary customers.
 - b. Determine and understand corporate policies and procedures that affect the Six Sigma Quality Management System (QMS). Any applicable corporate policies or procedures must be incorporated or referenced within the QMS, as appropriate.
 - c. Based on the organization's strategic plan, the Core Team must define the short-term and long-term business goals.
2. **Identify existing processes performance**
 - a. Identify the overall process of the organization, showing how products or services are created and supplied to the customers.
 - b. A high-level “gap analysis” is performed by the Core Team.
 - c. Review the “gap analysis” results with top management.
3. **Define Six Sigma improvement projects.**
 - a. Based on the “gap analysis”, define the scopes and goals of Six Sigma improvement projects, which should include: process management, human resource development, training system, quality tools, supplier management, and customer management.
4. **Create performance measures for all Six Sigma projects**
 - a. Based on the results of “gap analysis”, define the detailed performance measures for all Six Sigma projects.
 - b. Incorporate these performance measures into an organizational information system.
 - c. Enhance the organizational information system in order to provide the information about individual project progress and the overall Six Sigma implementation performance.
5. **Establish an incentive/recognition system**
 - a. An incentive/recognition system is essential to Six Sigma implementation.
 - b. Top management is responsible to design a system to motivate employees to be involved in and dedicated to the Six Sigma implementation.
6. **Form a Quality Service Team**
 - a. The Core Team is responsible for forming a Quality Service Team to facilitate Six Sigma implementation.
 - b. The Quality Service Team has the responsibility of providing the training and consulting services of quality tools to the Six Sigma project teams.

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Improve Phase:

This phase begins the process of actually composing the improvement project teams and providing Six Sigma and project-related training to the team members. Then, while the projects progress, the management should constantly monitor the status of each project.

1. Form the Six Sigma project teams

- a. The Core Team is responsible for composing the Six Sigma project teams.
- b. The Six Sigma project teams are responsible for the delivering of the project goals assigned to each project.

2. Plan and provide Six Sigma training to members of project teams

- a. Develop a training plan and strategy, and provide the appropriate training to all members of Six Sigma project teams.
- b. The training plan should focus on: Six Sigma overview, measure-analyze-improve-control (MAIC) discipline, and utilization of quality tools.

3. Implement the Six Sigma projects

- a. Project teams should evaluate the existing processes and proceed with the MAIC discipline.
 - i. Measure: Measure the existing systems. Identify and describe the potential critical processes/products.
 - ii. Analyze: Analyze the system to identify ways to eliminate the gap between the current performance of the system or process and the desired goal.
 - iii. Improve: The improved outcome is measured to determine whether the revised method produces results within customer expectations.
 - iv. Control: Control the new system and keep the original problems from recurring.

4. Monitor and review the status of each project

- a. Keep the Core Team informed of the activities involved in implementing the Six Sigma projects.
- b. Obtain their inputs on an ongoing basis.
- c. The Core Team provides directions and support to the Six Sigma project teams.

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Control Phase:

The main objectives of the fourth phase are to assess each project's gains in improving processes performance, determine the success level of each project, continuously adjust the business strategic plan, and re-start the implementation cycle.

1. Audit the projects' results.

- a. After the projects are completed, the results are audited by the Core Team and top management and confirmed with the projects' goals.

2. **Maintain the improved systems**
 - a. Institutionalize the improved system by modifying policies, procedures, operating instructions, and other management systems.
3. **Apply the incentive/recognition system**
 - a. Based on the project performance, the appropriate incentive and recognition will be applied to the project team members.
4. **Apply continuous improvement mechanism**
 - a. The organization strategic plan and related action plans will be revised according to the project performance. Then, the new Six Sigma projects are derived from the revised strategic plan.