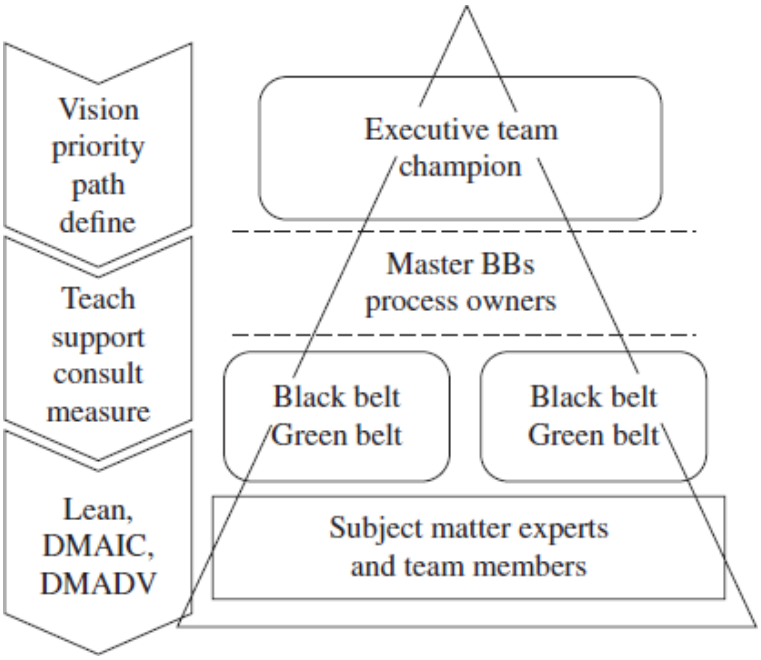
Source: Juran's Quality Handbook: The Complete Guide to Performance Excellence, 7th Edition
ISBN: 9781259643613
Authors: Joseph A. De Feo

15.4. Key Roles to Deploying Six Sigma Successfully

Deploying a Six Sigma program requires building a suitable infrastructure, as described in Chap. 5, Quality Improvement Breakthrough Performance. A number of key roles are important, as shown in Fig. 15.4. Each role is essential, yet, by itself, insufficient to produce the improvement an organization expects from Six Sigma. Each role requires knowledge of the methods and tools. In addition, the Six Sigma community led by the American Society for Quality has established a standard curriculum and certification process for the roles of Green, Black, and Master Black Belts. Certification is granted upon completing subject matter training, carrying out a number of significant projects, and passing written and oral reviews.

Figure 15.4 *Key roles for Six Sigma. (Juran Institute, Inc.)*



The key roles to drive Six Sigma are

- Leadership
- Champion
- Master Black Belt
- Black Belt
- Green Belt
- Project Team and Subject Matter Experts (SMEs)
- Process Owner

15.4.1. Leadership's Role

The roles of *all* the members of the organization leadership team to create annual breakthrough when acting as a steering team are

- *Setting improvement goals*: Identify the best opportunities to improve performance and set strategic and annual goals for the organization. Establish accountability for meeting goals.
- *Establish infrastructure to enable Six Sigma Projects to happen* Establish or revise management systems for selecting and assigning projects, organizational reporting of project progress, and accountability of the various roles, performance appraisal, reward, and recognition.
- *Appoint Champions*: They can sponsor projects and ask the right questions at each phase of DMAIC of the Six Sigma project.
- *Support projects and monitor progress* Enable project teams to carry out their project goals. Provide the necessary training, resources, facilities, budgets, time, and most importantly, management support. Monitor progress of projects and keep them on track.
- *Provide organizational support to deal with resistance to change that occurs when implementing breakthroughs*.
- *Become educated and receive training in the methods of Six Sigma to be able to support and evaluate the work of all the other roles*.

All members of the executive team and managers at all levels should be committed to the Six Sigma effort, agree to support it, and act with unified focus and consistency to facilitate the gradual cultural changes that will inevitably be required. A fractured executive and management team can, and usually does, wreak havoc and confusion on a Six Sigma effort, drains the energy out of those trying to make it succeed, and leaves in its wake disillusionment and meager results. If the executive team fails to maintain unified focus and transform the culture, it loses its credibility and ability to lead.

15.4.2. Role of Champions

Champions are usually members of management (or at least folks with organizational clout). The ideal Champion is one who wants to sponsor a project and likes change.

The Champion

- Identifies improvement projects that meet strategic goals
- Is responsible for creating a project charter
- Identifies and selects competent Belts and team members
- Mentors and advises on prioritizing, planning, and launching Six Sigma projects
- Removes organizational obstacles that may impede the work of the Belts or project teams
- Provides approval and support to implement improvements designed by the project teams
- Provides recognition and rewards to the Black Belts and teams upon successful completion of their projects
- Communicates with executive management and peers as to the progress and results associated with the Six Sigma efforts
- Removes barriers the teams encounter
- Understands and upholds the Six Sigma methodology

In general, Champions manage, support, defend, protect, fight for, maintain, uphold, and function as an advocate for Six Sigma. Usually, a strong Champion can be found behind every successful project. Weaker Champions are usually associated with weaker results.

After helping the steering team select projects, the Champions mentor and support the overall process. Once criteria are established and business unit managers and Champions are identified, projects are selected for their potential in breakthrough improvement. This means evaluating opportunities for strategic relevance, operational efficiency, product and service quality related to customer satisfaction or dissatisfaction, and bottom-line savings.

The Champions and leadership of each business unit support Six Sigma project teams. As influential members of management, they are expected to promote the application, acceptance, and evolution of the process within their business units in the following ways:

- Project selection
- Leadership reviews
- Project support
- Resource allocation
- Career development

15.4.3. Role of Master Black Belts

A Master Black Belt receives training and coaching beyond that of a Black Belt. Master Black Belts are qualified to train Black Belts. The role of a Master Black Belt includes

- Acting as internal Six Sigma consultant, trainer, and expert on Six Sigma
- Managing and facilitating multiple projects—and their Black Belts
- Supporting and advising Champions and executive management
- Providing technical support and mentoring as needed

Everyone else in the organization—those who are not Champions, Master Black Belts, or Black Belts—becomes either a Green Belt or a team member (some organizations call them Yellow Belts). Suffice it to say that the different colored belts vary according to the amount of skill they will need, the formal training received, and the active roles each takes in participating in Six Sigma activities. In an ideal situation, all organization members receive training at some minimal level and are awarded the appropriate belt. Everyone feels included, and everyone understands what Six Sigma is all about, and just as important, what it is not about. No one is left to wonder what Six Sigma is all about or to resent or resist it. This unifies the organization behind the Six Sigma effort and significantly reduces pockets of resistance.

15.4.4. Role of Black Belts

Black Belts are on-site implementation experts with the ability to develop, coach, and lead cross-functional process improvement teams. They mentor and advise management on Six Sigma issues. Black Belts have an in-depth understanding of Six Sigma philosophy, theory, strategy, tactics, and Six Sigma tools. Each project is targeted to save at least $250,000 ROI per project. Black Belts are expected to guide three to six projects per year, which increases further the ROI of Six Sigma.

The training required to be certified as a Black Belt is rigorous and demanding. An illustrative list of topics would include

Critical team leadership and facilitation skills	Correlation and regression
Six Sigma methodology	Hypothesis testing using attribute and variables data
Core improvement tools	ANOVA: Analysis of variance
Use of an appropriate statistical software package	DOE: Design of experiments
Measurement system analysis	EVOP: Evolutionary operations
Determining process capability	Lean enterprise principles and tools
Process mapping	Mistake-proofing
Quality function deployment	SPC: Statistical process control
FMEA: Failure mode, effect, and criticality analysis	Process control plans
Basic statistical methods	Transfer to operations

Armed with this training—usually delivered in four weeklong sessions with 4- to 5-week intervening intervals—the Black Belt is full-time and devoted to carrying out real Six Sigma projects. When Black Belt training has been completed, employees are able to

- Develop, coach, and lead cross-functional teams
- Mentor and advise management on prioritizing, planning, and launching projects
- Disseminate tools and methods to team members
- Achieve results that match the company's business strategies with a positive benefit to financial performance

15.4.5. Role of Green Belts

Employees who become members of each project team often enter the process by becoming Green Belts. A Green Belt requires about 8 days of training in the overall Six Sigma improvement methods and tools. They become key team members on a Black Belt-level project or can be leaders of smaller-scope projects.

Each week in the classroom is followed by four to five weeks of practical application on the same projects back in their business units. If properly selected, these initial projects will produce significant bottom-line savings and, typically, return more than the entire training investment. Each project is targeted to save at least $100,000 to $250,000 ROI per project.

The total number of employees trained in Six Sigma throughout the world must be in the hundreds of thousands by now. More and more companies, like Samsung and GE, are planning for these employees to move up the ranks to top management levels. In the final analysis, success in achieving results with this process depends on whether top management, particularly CEOs, accept responsibility for their nondelegable roles.

Mr. Bob Galvin at Motorola, Mr. Larry Bossidy at AlliedSignal—now Honeywell—and Mr. Jack Welch at GE were role models for making Six Sigma and opportunities for Black Belt employees a vital part of the culture during their tenure as CEOs. Top management can overcome the powerful forces in any organization that may resist unity of direction. The answer is to find a universal improvement process like Six Sigma that fits all functions in an organization. Six Sigma is an extremely healthy and productive cultural change that takes time to complete. It is not free. It requires resources and training, but customer satisfaction, quality products and services, and a highly competitive organization produce a significant return on investment, satisfaction all employees have from being on a winning team, and pride in being part of such an organization.

15.4.6. Roles of Project Team Members and Subject Matter Experts

The members of the Six Sigma team can come from throughout the organization and are often subject matter experts from the various functional departments that are involved in the operation or maintenance of the process under study. Team members are expected to attend all team meetings, contribute to the work process, and complete assignments given to them by the project leader between meetings. Often, the subject matter experts (SMEs) are of greatest value assisting the team:

- When identifying key aspects of the problem and evaluating the appropriate goal for the project (define phase)
- During the process flow diagramming activity by contributing their expertise (measure phase)
- Collecting data about the parts of the process that they are most familiar with (measure and analyze phases)
- Identifying possible causes of the problem (measure phase)
- Identifying possible failure modes and ranking their severity, occurrence, and detection during completion of the PFMEA (measure phase)
- Developing possible solutions to the proven causes (improve phase)
- Identifying control subjects for ongoing measurements of the product and process (control phase)

15.4.7. Process Owners

Process owners are usually at the high supervisory or managerial level of the organization and are directly responsible for the successful creation of the product (goods, services, or information). They are typically not core team members, but may be called upon to assist the team with specific tasks as needed. Some of the most important needs for support from process owners occur during the Improve and Control phases when the team is

- Defining possible solutions to the proven causes of the problem
- Planning for dealing with cultural resistance
- Conducting pilot evaluations of possible solutions
- Implementing the selected improvements
- Designing the control plan and applying it to the everyday maintenance of the process performance
- Disbanding the teams after project completion and turning full responsibility back to the operating forces