

The Great Balancing Act

How Black Belts, Green Belts and Yellow Belts
Interact in Six Sigma Deployment

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A White Paper from Six Sigma Qualtec



Successful deployment of Six Sigma depends on the effective development of Policy Deployment, Process Management and MAIC. Many players have critical roles in this deployment, including Executives, Champions, Black Belts, Green Belts, and Yellow Belts. No one who has experience with Six Sigma will deny the importance of the Executive and Champion roles in creating an environment that enables Six Sigma to succeed. What seems to be less well understood (or at least consistently applied) is the relationship between the “Belts”: practitioners of Six Sigma’s core problem solving techniques, who exist in a dynamic and interdependent environment punctuated by the constant interaction between process improvement and process management.

In order to understand this relationship, it is helpful to recognize the primary elements of a successful Six Sigma approach. Six Sigma, at its basic level, is a problem-solving method that seeks to improve the performance of processes in an organization. This approach is particularly powerful because it explicitly identifies and tracks the financial impact of problem-solving efforts and fosters an accountability structure, which ensures that workers actually apply the skills they are learning. Six Sigma is also effective because it trains a significant portion of an organization in robust analytical and problem-solving tools. These tools are typically organized into a four-step approach called Measure-Analyze-Improve-Control, or MAIC. Consequently, the method has had great success in a variety of business environments.

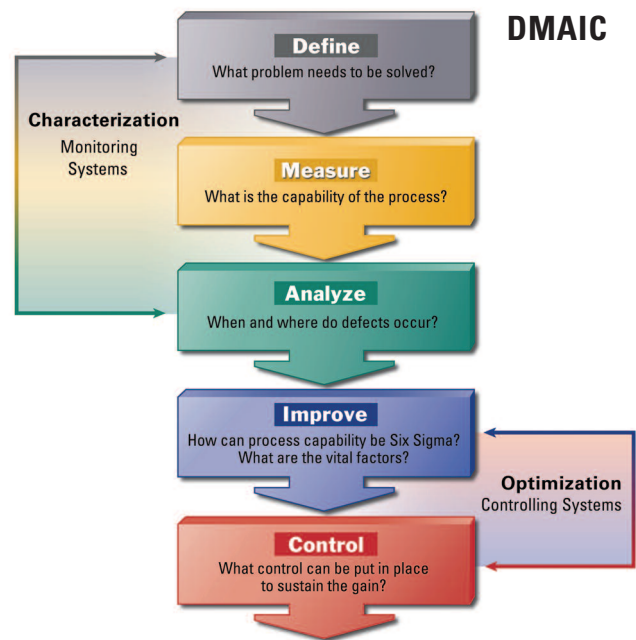
Business leaders are intrigued by the MAIC approach because of its proven ability to deliver measurable financial impact to the bottom line. What they frequently don’t realize is that Six Sigma requires both management discipline and a quality management infrastructure to ensure successful self-sustainability. Ad hoc Black Belt and Green Belt projects are visibly successful, particularly at the beginning of an initiative, but such success is nearly impossible to maintain if the organization does not have a consistent method for documenting, measuring and controlling its critical processes.

Process Management – a Critical Factor

This is where Process Management becomes a critical factor in the long-term success of Six Sigma in any organization. In order for Process Management to ultimately be successful, it must be approached as a management system — a way to do business — rather than a one-time exercise in process mapping and data collection. Owners of the processes need to first understand that what they do is a process, and that they must manage their process, not their results. Process Management is a change in approach to daily business activities. As such it requires management vision and commitment to the change. Just as important, however, employees need to understand how to practice Process Management. This is best accomplished through intensive training, support, and accountability to deliverables.

The fundamentals of process management can be found in yellow belt training. These skills include the ability to identify and prioritize key processes, determine customers and requirements for those processes, recognize appropriate measurement and reporting methods, and monitor processes for gaps between targeted and actual performance. While the “Yellow Belt” term may not be used as universally as Black belt or Green Belt, the skills, practiced by a broad population of an organization, are nonetheless critical components to a robust quality management system.

These concepts of Process Management should be utilized as an approach distinct and separate from MAIC. Eventually, however, the two elements will intersect, particularly when gaps in performance and problem complexity dictate Six Sigma projects. Process Management is the method by which companies control and incrementally improve all their processes; MAIC is then an ad hoc approach in specific situations for breakthrough improvement. In a mature environment, Process- Management will be the predecessor to MAIC by measuring processes and prioritizing performance gaps, as well as the successor to MAIC projects as a management system to monitor and control improved process performance. See the chart attached [Figure 1 is on page 4] for a summary.



Commonly, a business leader will desire MAIC and not see the need for a global Process Management deployment. In these cases, it is advisable to take a phased approach that closely links Yellow Belt training and Process Management to the initial MAIC projects. Once there is a comfortable relationship between MAIC and Process Management, a more systemic approach linked to Policy Deployment (Also known as Hoshin Planning, Policy Deployment identifies strategic priorities for an organization and communicates those priorities to relevant functional areas and levels) may be applied. The options for implementation of MAIC and Process Management together are infinite, but the ultimate objective is to develop a quality management infrastructure that enables MAIC to be successful in the long run. At some point, Process Management and Six Sigma (MAIC) should be indistinguishable. The challenge is to create this system by focusing on the benefits of MAIC while balancing the broad training required for Process Management.

The Central Player in Any Six Sigma Deployment – the Black Belt.

The term “Black Belt” should be thought of as both a job description and a level of training. In any given organization as much as 2% of the workforce may be working as Black Belts, and more than that may be certified Black Belts. The actual number will vary depending on the specific demographics, geography, and structure of the organization. Black Belts are the principal change agents in a Six Sigma deployment.

The Value of Black Belts is Realized from Four Perspectives:

- 1) They deliver significant bottom-line results using the Six Sigma method,
- 2) They coach others in the use of Six Sigma tools,
- 3) They set an example for others in the organization to emulate, and
- 4) They are expected to move on to leadership positions, from which they will practice Six Sigma methods themselves and champion use of these methods in others.

Black Belts should be assigned full-time to Six Sigma efforts. They typically come from the middle of the organizational structure, though they may come from higher levels once the deployment has matured. The full-time utilization of Black Belts is important for two reasons. First, a Black Belt spending 100 per cent of their time on eliminating waste provides the greatest value to the organization. Second, a key objective of Six Sigma is to get the organization to practice planned, continuous improvement as a habit.

The primary role of the Black Belt is to force controlled improvement via large-scale projects, as opposed to daily fire-fighting in function-specific processes. If the Black Belt's effort is not exclusively focused on project work, then his or her time will almost inevitably be consumed by old habits.

Because the Black Belt is expected to direct his or her efforts on problem solving through complex projects, Green Belts and Yellow Belts must play unique roles that enable Six Sigma deployments to be successful. While Black Belts are often regarded as the “marquis” players in a Six Sigma deployment, deployment of Green Belts and Yellow Belts are an important indicator of the health of any Six Sigma initiative. Their ability to simultaneously work parallel to Black Belts as well as support Black Belts reflects the degree to which an organization's culture has embraced the Six Sigma approach.



The Role of the Yellow Belt

The Yellow Belt is often thought of as an “assistant to the Black Belt.” In reality, a Yellow Belt's role should be much deeper than that. Yellow Belts practice the Process Management approach (control and manage processes using metrics and data) and solve problems using basic quality tools. Beyond these skills, the characteristic of Yellow Belts that makes them so critical is their demographics and their numbers. Yellow Belts are directly linked to daily, often critical, processes. They can come from any level of the organization (and they eventually should), though the first Yellow Belt waves often come from the operator, line support, and front-line supervisor levels. Not only does this create an initial grass-roots understanding and support that is critical to Black Belt projects, but the Yellow Belts' Process Management skills create the foundation for an effective Six Sigma deployment and its self-sufficiency. Consequently, it must cover as large a population as possible (or at least practical) in an organization.

The Role of the Yellow Belt *(cont.)*

When utilized properly, Yellow Belts are the people who own processes and both understand and practice process management and control in the statistical sense. Ideally, this should be just about everyone in the organization. When a Yellow Belt's efforts reveal performance gaps, they may decide to solicit the help of a Black Belt (or Green Belt) if the problem is complex. Once a Black or Green Belt begins work in an area, Yellow Belts will then apply their process knowledge to assist in the project. Just as Black Belts are critical in forcing the organization to make controlled improvements through projects, Yellow Belts facilitate the continuous improvement efforts by controlling processes, eliminating "fires," and voicing a need for project work to take place.

The Yellow Belt/Black Belt Relationship

The relationship between Yellow Belts and Black Belts is symbiotic: Yellow Belts request the help of Black Belts and Black Belts utilize Yellow Belts on project teams. This point is critical and it is important not to overlook the cooperative relationship between Black Belts and Yellow Belts.

Keep in mind this key objective of Six Sigma: to get the organization to practice planned, continuous improvement as a habit. As mentioned above, this is what Black Belts do in coordination with the Yellow Belts. But while it may support functional processes, the Black Belt position, because it is dedicated to project work full-time, does not permit advanced statistical tools to be used regularly within the daily management of the processes. Yellow Belt Training doesn't allow this either as it only briefly covers very basic problem-solving tools (this is necessary due to the large population of Yellow Belts that eventually get trained).

Green Belts Defined

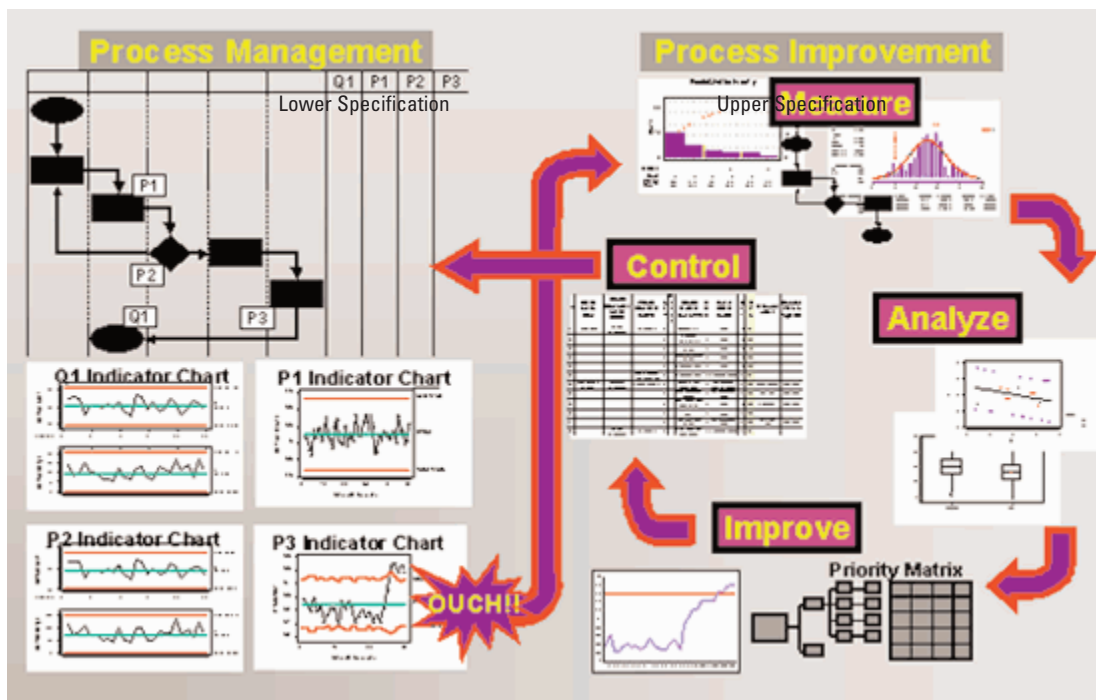
To fill this gap, most organizations either implicitly or explicitly employ Green Belts in functional (often management, though not necessarily) roles who apply Six Sigma tools on projects related to their positions. Explicitly employed Green Belts stay in their functional roles. However, many are employed implicitly because every Black Belt should become a Green Belt when they repatriate to the functional organization. In general, Black Belt is a certification and a job description; Green Belt and Yellow Belt are levels of training (and possibly certification) with certain corollary changes in job behaviors and deliverables. Usually Green Belt projects are less complex than Black Belt projects and they tend to be focused within function-specific silos of an organization (except when the Green Belt is a former Black Belt, when the projects may be very complex and cross-function in nature). Since Black Belts drive the Six Sigma "project" approach to problem solving and they play a key role in supporting Green Belts, it is highly recommended that Black Belts be trained before Green Belts.

As a Six Sigma deployment matures and the organization becomes self-sufficient, the names and titles of these players may change. In the end, the truly successful practitioners of any quality management system, including the use of Six Sigma methods, utilize a broad population that applies process management (Yellow Belts) along with a few dedicated problem-solving experts (Black Belts) and several tool practitioners in their daily jobs (Green Belts).

NOTE on MAIC

While this paper presumes familiarity with MAIC, some readers unfamiliar with the topic may find a brief review helpful. Measure, Analyze, Improve, and Control is intended to be a systematic approach to solving complex problems. Once a problem is defined (the process of defining a project or problem is such a critical prerequisite to MAIC that many companies precede MAIC with a specific “Define” phase to create a DMAIC process), adequate data must be acquired in order to quantify the process and the magnitude of the problem. This takes place in the Measure phase. This results in a practical characterization of the process in question and the nature of the problem to be addressed. Once a practical understanding and quantification of a problem is achieved, potential root causes, or inputs to the process undergo rigorous statistical analysis in the Analyze phase. Using information gleaned from the statistical analysis, the Improve phase addresses how to develop, prioritize, and select solutions to manage or eliminate the root causes of the defined problem and optimize process performance. Finally, in the Control phase, methods are developed to ensure that the solutions become a permanent element of the improved process. Control focuses on ensuring that the defined problem never returns once it is solved. In most cases the individuals who practice this approach are called Green Belts or Black Belts depending on their role in the organization and their level of training in the tools of MAIC.

Figure 1.





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