



10 Enablers to Improve Project Productivity

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Introduction

Six Sigma has saved Fortune 500 companies over \$400 billion since 1987. Of the top 500 public companies in the United States, 53 percent have deployed Six Sigma to some degree. Fortune 500 companies with the largest revenues are more likely to have a Six Sigma initiative. ⁱ

This white paper has been prepared for Six Sigma Master Black Belts, Black Belts and Quality Managers deploying business improvement projects *across the organization with the goal of delivering successful projects that meet or exceed annual performance targets. **To meet these goals in today's competitive environment project productivity must be maximized.***

A strong theme throughout the paper is the use of technology in projects, in particular, the use of advanced online collaboration software programs that combine web conferencing, Group Decision Support Systems and custom DMAIC tools for use in virtual and face-to-face meetings.

Project Failure

Despite impressive results, many business improvement programs, including Six Sigma projects are failing to deliver expected savings.

Several reasons are cited by practitioners for project failure:

- Lack of internal resources to deploy and sustain projects
- Long project cycle times erode savings
- Lack of management commitment and involvement
- Insufficient understanding of Six Sigma methodology, tools, and techniques
- Shortcomings in project selection, review and tracking

Challenges for Program Leaders

In contrast to the reasons why projects fail, four measurable characteristics have been identified that must be met by process improvement managers to satisfy senior management:

- Increases in the number of successful projects
- Increases in projects commenced
- Reduction in resources required to execute projects
- Increases in savings per project
- Consistently delivering results in these four areas requires the use of effective productivity drivers.

Improving Project Productivity is Key

Delivering successful projects requires high levels of productivity from each of the project variables. These include:

- Which projects are selected
- How projects are executed
- How productive are the project leaders and teams
- Project leader competence in both statistical and “soft” skills facilitation
- How committed are senior management
- How well project results are communicated to the organization

Ten Enablers To Maximize Project Productivity

Four areas in process improvement programs have the greatest impact on productivity. The first area where productivity can be improved is Project Selection.

1. Project Selection

- *How often are smaller projects selected because high value projects are too unpredictable and difficult to resource?*
- *How often are large projects compromised by the need to deliver on time?*
- *Do your projects always align with the right goals and business strategy?*
- *How many more projects could you undertake if you used Green Belt Project Leaders to facilitate smaller projects?*

Productivity Drivers

- Projects aligned with business strategy
- Increased number of high value projects
- Maximum resource availability

Enabler #1: Capture all project ideas

While it is not crucial that every project has a strategic dimension, it is important that the majority of the projects impact one or more of the business's high-level metrics and goals.

- Black Belts must be involved in determining the linkage between KPIs and project selection. Determining the strategy to deliver the agreed metrics for each KPI leads to the identification of gaps. Closing these gaps is achieved through execution of improvement projects.
- Regular brainstorming sessions across the organization can uncover gaps in strategy and process and lead to the identification of new projects. When idea generation is done electronically, the multiplier effect of its use is capable of capturing a large quantity of ideas in as short a time as 30 minutes. These short sessions conducted on a quarterly basis provide a rich data base from which significant projects can be created which are aligned with business strategy and deliver customer value. The short duration of the sessions encourages management participation. Sessions with front line employees can encourage future participation on project teams.

Maintaining a focus on the strategic business drivers also helps to keep managers engaged in the continuous improvement program.

Enabler #2: Break large projects into smaller projects

- The high value projects favored by management are often larger projects that can become difficult to manage. Given the expected financial impact per Six Sigma project is between \$100,000 and \$500,000ⁱⁱⁱ, it should be expected that senior management will favour large projects over smaller ones that deliver lower savings.
- When large projects become unmanageable, or exceed planned completion time, breaking them into a number of sub-projects can be an effective solution provided there is high level integration of the smaller work projects. A good Work Breakdown Structure model will help with this problem.

However, a Black Belt's capacity to manage more large projects may be compromised because most Black Belts are already working at maximum capacity. Increasing the number of Black Belts is constrained by the market where demand is outstripping supply.

- Some organizations are addressing this problem by promoting Green Belts to the status of Green Belt Project Leaders. No new employees are required and Green Belt Project Leaders have the opportunity to increase their skills base through training for future career opportunities.

Enabler #3: Recruit & Train New Green Belt Project Leaders

Recruiting Green Belts to act as leaders on small projects has several advantages:

- Firstly, it does not require any increase in staff numbers. Green Belts already have first hand experience of project management and require only additional training in the methodology and group facilitation.
- To accelerate Green Belt group facilitation training consider using a “learning by doing” model, embedded in some e-meeting technologies, that allows Green Belts to become competent faster than using convention classroom-only training.
- Better human resource utilization through more effective Green Belt participation can mean the execution of more projects in the same time frame with the promise of increased overall savings.
- With Green Belt Project Leaders managing small projects Black Belts are able to concentrate on large projects. By delivering projects with higher savings Black Belts are more likely to achieve their own, individual performance targets.
- The ability to manage more high value projects while increasing the delivery of small projects should provide the incentive for CEO’s to continue their sponsorship and commitment to projects.

2. Project Execution

- ***How do you know when your Green Belts are ready to lead projects?***
- ***How do you know your Green Belt Project Leaders are using the Six Sigma methodology properly?***
- ***What tools or technology could assist Green Belt Project Leaders to complete projects in less time?***
- ***How do project leaders efficiently and effectively lead geographically distributed team members?***

Productivity Drivers

- Consistent application of a structured methodology
- Technology to accelerate projects
- Providing distributed teams with effective tools
- Confident and competent team leaders and facilitators

Enabler #4: Toolkits and techniques

Project improvement leaders are expected to demonstrate high levels of competence in three diverse areas – statistical analysis, team and stakeholder management and meeting facilitation. Each of these disciplines draws on different “hard” and “soft” skill sets, increasing the complexity of team facilitation. These requirements can make it especially difficult for Green Belt Project Leaders who typically receive less training than Black Belts and are expected to quickly develop project leadership skills.

In a recent survey 33 percent of respondents blamed “**lack of a structured methodology**” for shortfalls in Six Sigma projects.ⁱⁱ

- *Eighty-two percent of the top 100 companies in the USA use a methodology, whereas only 27 percent of the bottom 100 companies use it.*

Using a standard methodology for the implementation of Six Sigma projects simplifies the application and learning, and allows lessons learned to be communicated effectively across projects, organizational units and within the profession.

A consistent approach to the structured delivery of DMAIC improves project productivity in a number of areas:

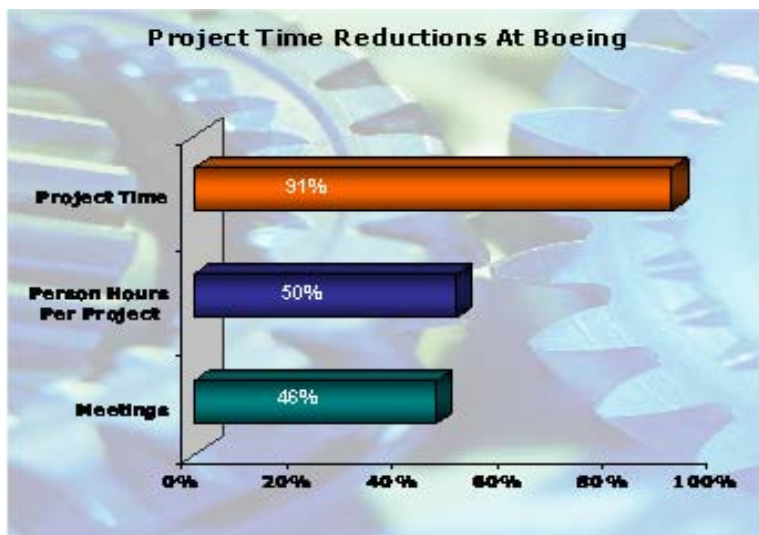
- A formal methodology provides specific processes, tools, templates, deliverables and best practices to deliver DMAIC in the most efficient and cost effective manner.
- The consistent application of the methodology forces project teams to ask the hard questions because each step in the process is clearly articulated.
- The SigmaSense approach is to provide a structured methodology for DMAIC embedded in an online collaboration program consisting of templates, procedures, leadership techniques and training which belts use with their teams.
- Each template in the suite provides a repeatable way to interact with the 20 DMAIC and PI tools to complete complex problem solving/solution finding and generate a custom report for ongoing project management and review of project activities.

Templates are used collaboratively with each member of the team actively contributing to the workgroup to analyze situations, synthesize information, evaluate alternatives, and make decisions, with the objective of finding the highest quality solution to a complex strategic problem.

- When the methodology is embedded in a software program the outputs are searchable and provide replicable best practice for future projects. Green Belts can be trained in less time and with better results.

Enabler 5#: Accelerated Projects

- Pressure to complete projects in shorter and shorter timeframes without reducing project effectiveness is cited by many practitioners as the biggest barrier to successful project implementation.
- Reductions in project cycle time can generally be achieved through access to the right tools, computer-mediated group work to cut meeting time, timely availability of data use of analytical tools and co-operation and support from management.
- A sound process outlined in a project roadmap enables team members to see where they are going and how they are going to get there. The greater the complexity of the activity, the greater the need for structure to focus attention on the problem, not the process of solving it.
- Research into teams using computer-mediated Group Decision Support Systems show project cycle time reductions at Boeingⁱⁱⁱ of:
 - ☑ 91% reduction in project time
 - ☑ 50% reduction in person hours per project
 - ☑ 46% overall meeting time savings



- Process Improvement teams using technology enabling simultaneous real time contribution of ideas in a shared workspace completed projects in a quarter of the time taken using conventional meeting tools including white boards and serial emails.
- The combination of a roadmap, structured DMAIC methodology delivered by a Group Decision Support System and a facilitation “script” quickly enables new Green Belt project leaders to become competent and confident and therefore better equipped to complete projects in less time.

Enabler #6: Resourcing distributed teams

Managing a distributed project team or even a team too busy to get together for meetings presents specific challenges to team leaders. Often there are cross-cultural issues which discourage members from contributing their knowledge during audio conferences. Each problem adds time and increases difficulty for the leader.

- When it is not possible to get the team together in the same place for a meeting and you want to avoid serial email, consider conducting an asynchronous meeting.
- SigmaSense enables asynchronous problem solving sessions. Just set up an agenda, add specific tasks and leave the meeting open for say, a week. Team members are able to brainstorm and prioritize ideas in a collaborative workspace, contribute to decisions, create action plans, review documents or presentations or answer survey questions - all in their own time zone and at times that suit their busy schedules.
- In cross cultural situations where you are relying on local team members’ skills and knowledge to identify process improvements, use text brainstorming instead of relying only on verbal input. This technique elicits rich ideas from vocally reticent team members.
- Eliminate the inefficiency of serial email to solve complex problems. You can avoid frustrating, time wasting and error prone problems associated with group serial email and its shortcomings in version control. A shared virtual workspace – where all members are connected to an online session – enables ideas to be shared, documents and presentations to be reviewed, detailed agenda completed and statistical tools shared in real time. Tough problems can be solved in a single, real time session with minutes produced automatically and immediately available for distribution.

3. Facilitation & Training

- ***How do you know when your Green Belt Project Leaders are ready to lead projects?***
- ***How do you know you are using the right training and tools to skill Green Belt Project Leaders to lead and facilitate project teams?***
- ***How effective is project team leadership?***

Productivity Drivers

- Organizations need to continuously learn and adapt the latest methods and techniques outside the conventional Six Sigma domain
- Competent facilitation and leadership skills empower team members to deliver high quality results.

Education and training enable people to better understand the tools, and techniques of the Six Sigma approach. Training is fundamental tool to ensuring that managers and employees apply complex Six Sigma tools effectively. The application of collaborative workgroup technology to enhance and accelerate training is new to Six Sigma, but is worthy of some focus.

When you have a number of smaller projects just waiting for team leadership would it be helpful if you could accelerate the training of new Green Belt Project Leaders?

Enabler #7: Faster Training Using Action Learning

- A goal of Black Belts is to train Green Belts as fast as possible so they can start leading project teams. However, creating competent, confident project leaders can be a challenge regardless of the trainer's expertise.
- A structured methodology underpinned by an Action Learning approach has the potential to reduce training and coaching time for complex processes by embedding the theory and practice of an activity in an active learning framework.
- The SigmaSense approach accelerates training through the structured methodology embedded in each of its process improvement tools. Green Belts learn how to apply each tool in a "learning-by-doing", repeatable environment

- The embedded methodology, with its templates, scripts, navigation help and team management techniques eliminates the need to memorize how to use the many tools employed in Six Sigma projects. Focus can be directed onto the special requirements involved in facilitating team performance. Released from the need to think about the next step in the methodology, Green Belts rapidly become competent in facilitating complex meetings with enhanced critical thinking and better decision making.

Enabler #8: Focus on Soft Skills

How important are the Soft Skills?

According to iSixSigma's recent research, *"The Hard Truth About Soft Skills"*:

"Technical skills, such as statistical knowledge and tool savvy, are undeniably important for effectiveness in Six Sigma. But what about "soft" skills - communication, the ability to motivate others, relationship building and so on; how critical are they?

*Although some might say those skills have little to do with Six Sigma, survey results suggest otherwise: When asked to compare the importance of soft skills to technical Six Sigma skills, **49 percent of respondents overall said soft skills are more important for success; 48 percent said they are equally important.***

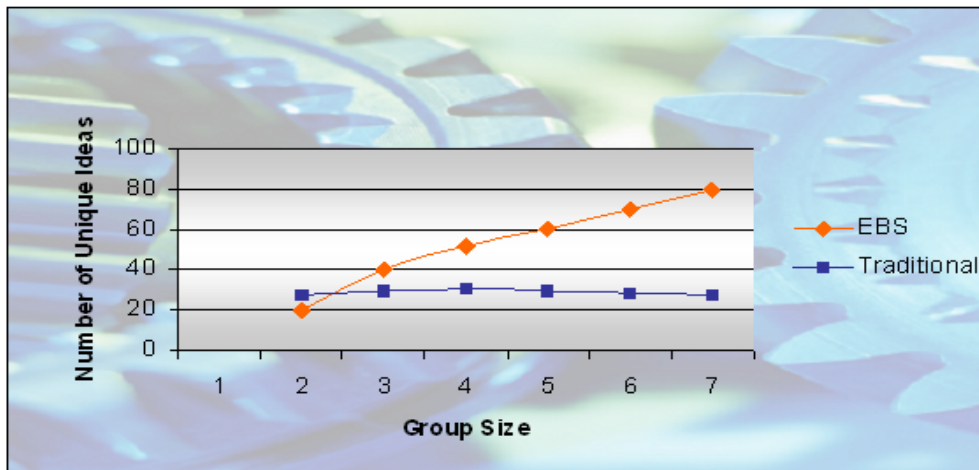
Six Sigma programs at companies that provide soft skills training are more likely to be rated successful."

The use of software in the implementation of Six Sigma and other Business Improvement methodologies has become indispensable for analyzing statistical information and mapping processes.

In contrast, the use of software to mediate the "soft" skills involved in workgroup productivity is only now beginning to be understood and its value appreciated.

A typical improvement workgroup must be capable of analyzing situations, synthesizing information, evaluating alternatives and making decisions, in real time while dealing with conflict and diversity. Without competence in "soft skills" workgroup productivity declines and the goals of the change effort cannot be met.

Research over more than a decade into the use of computer-mediated Group Decision Support System software, applied in a workgroup environment, confirms that teams work up to four times faster, with better decisions and buy-in and improved management support.^{ivi}



Electronic Brainstorming versus Brainstorming with Traditional Tools

Source: Sloan Management School

- As teamwork is a critical component of process improvement projects, leaders need to know how to create effective, high performing teams. Unless teams are equipped with the necessary leadership, skills, attitudes, focus, alignment and motivation they are unlikely to succeed. It only takes a few problems to create a dysfunctional team incapable of achieving a successful project outcome. Poor team dynamics is the major cause of dysfunction.
- Select candidates to lead the projects based on their superior leadership skills and ability to develop the necessary technical skills.
- Never underestimate the importance of the “soft skills” necessary for a Belt candidate to succeed and if it is thought that these skills may be lacking, consider developing them prior to developing the technical competency.
- It is harder to build a high performing distributed team than a co-located team, yet team effectiveness is vital to achieving project success. Consider virtual meeting tools that provide a higher degree of team support than audio conferencing alone.
- An effective start up should get the team through the “Forming” stage of team development, and eliminate the high degree of uncertainty members feel about the group’s purpose, structure and leadership.

- Start up should include:
 - Clear expectations of the leader
 - Mission statement and team goals
 - Shared view of what the project should look like
 - Clarity about each person's role in the completion of the project
 - Team norms including metrics
 - Adequate time commitments from each member
 - Agreed upon norms around communication
 - Mix of synchronous and asynchronous communication

- In the “Storming” stage, there may be team conflict around issues such as leadership and loss of individual control which need to be addressed. In the “Norming” stage members develop strong relationships and cohesiveness. They share a common set of expectations and demonstrate cohesive group behaviour. When teams enter the Performing stage, they are fully functional and focused on achieving the objectives of the project.

- The foundation of the SigmaSense approach is to automate those aspects of project execution which can be systematized without any loss of quality. The software assumes responsibility for much of the repetitive work involved in using process improvement tools such as DMAIC.

- The automation of the tools in the DMAIC methodology frees team leaders to concentrate on critical thinking and problem solving which enhance the quality of the solution.

- Online collaboration tools typically emphasize meeting productivity as a goal. What dramatically empowers teams and improves team effectiveness are the positive effects gained from sharing ideas in a collaborative work space.

<p>4. Commitment & Communication</p>
<ul style="list-style-type: none"> • <i>How often are projects delivered late because front line staff is unwilling to join project teams?</i> • <i>How do you find champions to support the deployment and use of change management processes?</i> • <i>How do you facilitate and encourage project selection and completion by reluctant Business Units?</i> • <i>How do you get your senior managers to “walk the six sigma talk?”</i>

Productivity Drivers

- Internal stakeholder marketing to create awareness and interest
- Serving stakeholders' interests to secure resources, commitment
- Implementing strategies to win management commitment and participation
- Enterprise-wide visibility and knowledge sharing

Enabler #9 Improving Buy-in and Commitment

The results of a recent survey published on *isixsigma.com* shows that 60% of respondents cited *"lack of sustained executive sponsorship and commitment"* as a key factor in why Six Sigma projects fall short of expectations. Fifty-eight percent blamed lack of buy-in from front line managers and employees for implementing and sustaining results on Six Sigma project solutions.

When there is a lack of commitment and buy-in from management, project selection is at risk of failing to address critical business needs.

If projects selected for improvement are not considered business priorities, managers will not engage and contribute their knowledge and projects will not get the attention, resources and commitment they need to be successful.

Ninety percent of practitioners rate the addition of tools for engaging frontline managers and employees as a top priority for improving project results.

- Gaining senior leadership involvement and buy-in can be as basic as getting a commitment to attend a project selection planning meeting. Being successful might only require a guarantee to keep the meeting short. By working in parallel and using software to quickly collect ideas a SigmaSense meeting will accomplish in a manager's typical 30 or 60 minute time slot as much as would be accomplished in twice the time using conventional tools.
- Because of its functionality and minimal requirement for the physical attendance of participants, senior leaders may be more available for shorter, virtual meetings where a smaller number of more compressed meetings would attract greater participation.

What is the cost of managers and process owners not buying-in to projects and failing to contribute their knowledge to Six Sigma projects? Cycle times will be longer and there is the strong possibility that bottom line results will be lower.

The old adage, “involve the people whose commitment you need in the decision making process and they will buy-in to the solution” still holds true. People who have a stake in the project are much more likely to buy-in and provide needed resources - whether its time, money, people or personal sponsorship. The process progressively involves the internal and external stakeholders in planning the change so there is broad ownership.

- With shorter project cycle time thanks to briefer, effective meetings, more people can engage in problem solving. This should translate into consideration of more ideas which in turn should lead to better solutions. The decisions that include stakeholders’ ideas will mean higher levels of commitment to decisions.
- Allocating time to a thorough Stakeholder Analysis early in the project will help the team create strategies to engage key stakeholders, which pays off with increased commitment.
- Consider using the Stakeholder Analysis to brainstorm engagement strategies to recruit staff onto teams. The Stakeholder Analysis in SigmaSense can be completed in 60 minutes with results in a printed report including engagement strategies and action plans.

Enabler #10: Effective Communication Plan

Communication is a critical success factor in Six Sigma programs because without it project teams will experience difficulties with:

- Gaining ongoing management commitment and participation
- Recruiting staff members to teams
- Acquiring resources
- Receiving recognition

The goals of the communication plan should include motivating individuals to overcome resistance, and educating senior managers, employees and customers on the benefits of Six Sigma.

Communicating the results of Six Sigma projects including successes, obstacles, and challenges will assist future projects adopt the most promising practices and avoid making similar mistakes. A major global oil company ensures that lessons learned are shared broadly by completing “Learning Look Back” sessions after each project and sharing the Grouputer report.

A well deployed Communication plan helps to create enterprise-wide visibility. Internal marketing conducted via websites, newsletters and management announcements that include cumulative project savings and recognition of team members efforts help to create visibility throughout the organization. This in turn encourages new recruits to join project teams. Endorsement from senior management, personal and team recognition programs and incentives all help to build a strong positive image of the improvement initiative and help keep up momentum, extending the life of the program.

Summary

Technology is not the answer to every process improvement problem, but it is capable of improving the productivity of the leadership and teamwork that is a critical component of project execution.

About Grouputer

Grouputer is a pioneer in electronic team meeting and learning technologies and has over 300 enterprise, defense, university and consultant customers worldwide. SigmaSense is the first online collaborative meeting program designed for Six Sigma and provides leaders with team collaboration and structured group decision support tools and techniques to execute the five phases of the DMAIC methodology with local and global teams, faster and with less training.



ⁱ Marx, M, Research, iSixSigma.com
ⁱⁱ www.isixsigma.com

ⁱⁱⁱ Success Factors in Managing Six Sigma Projects, Anbari, F and Young, 2004 Project Management Institute Research Conference, London, UK, July 11-14, 2004

^{iv} www.isixsigma.com

^v Marx, M, Research, ISixSigma.com

^{vi} Source: Fortune magazine/Boeing Corporation, USA

For more information or to arrange a demonstration: enquiries@grouputer.com