

iGrafx®

Strategic Whitepaper

# Continuous Process Improvement

*A Process Approach to Six Sigma*

# Table of Contents

- Executive Summary** ..... 3
- Process Management and Six Sigma** ..... 4
  - BPM phase one – document ..... 5
  - BPM phase two – assess ..... 5
  - BPM phase three – improve ..... 5
  - BPM phase four – manage ..... 6
  - Benefits of Six Sigma and iGrafx® ..... 6
- About iGrafx®** ..... 7
  - iGrafx® FlowCharter® ..... 7
  - iGrafx® Process™ ..... 7
  - iGrafx® Process™ for Six Sigma ..... 7
  - iGrafx® Process Central® ..... 7
  - Training and Consulting ..... 8
  - For More Information ..... 8

## Executive Summary

The Six Sigma methodology is a strategic approach for many of the world's leading corporations and for medium and smaller sized businesses. By focusing on the elimination of errors and defects, companies realize a distinct financial and competitive advantage in the form of reduced costs, improved efficiency, and increased profitability and attain increased customer satisfaction in the process. More so than previous quality improvement initiatives, Six Sigma demands a measured approach in terms of project scope, resources, commitments, and anticipated benefits. Six Sigma is not new. Motorola, one of the world's leading corporations, developed and deployed Six Sigma internally in 1986 and it is still a key discipline at the company. Since then, there has been an explosion in the number of quality conscious corporations adopting the discipline. Parallel with that growth, there has been an increasing recognition of the value of applying a process-centric approach to a Six Sigma initiative.

iGrafx® was among the first solutions to make process modeling and simulation widely accessible and easy to use. iGrafx has worked with many of the world's foremost Six Sigma professional institutions to create the first process-based solutions specifically designed to make Six Sigma projects more efficient, more powerful and easier to implement. As part of our commitment to Business Process Management (BPM), our goal is to help you realize the most from your Six Sigma initiatives with more certainty in less time.

### The value of a process-centric approach

Any activity that creates value for a company and its customers, be it a product or service, is linked within the company as part of interacting sets of processes. Processes not only can create value, but can reduce it too. Six Sigma demands recognition of both factors and a process-centric approach is the key to fully realizing the benefit of any Six Sigma initiative.

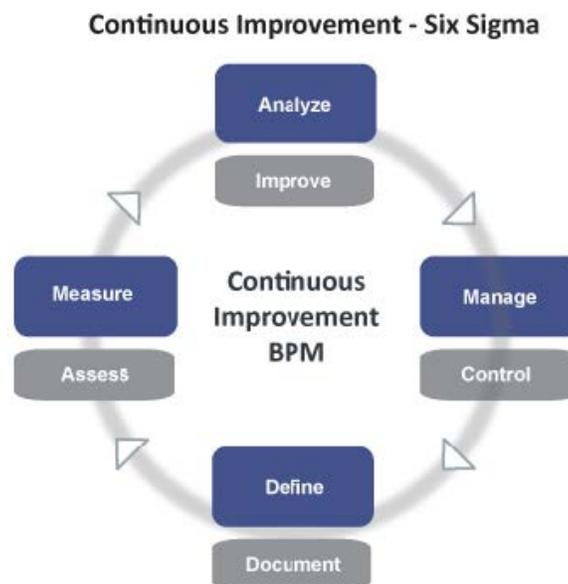
For example, consider an automotive manufacturing company and the processes that drive its daily business. There are interacting processes at many levels throughout the company, from the large scale manufacturing of a car to the mid-scale manufacturing of a bumper to the small scale bolting of the bumper to the car's chassis. It is the linkage of these processes that directly impacts operating costs and, ultimately, customer satisfaction. Flawed processes or poor linkage of processes increase cycle time, make products and services more expensive, create defects and ultimately reduce value to both customer and producer.

Process modeling and management across the enterprise, or BPM, defines a discipline that helps companies identify the processes or activities that are most important, understand the interactions within the processes that subtract value, and validate what improvements are necessary. The result of successful application of BPM is that teams reduce defects, raise customer satisfaction and improve bottom-line financial results beyond the improvements that can be achieved solely through statistical methods. This white paper discusses how a process-centric approach, powered by iGrafx solutions, can bring significant benefits to any organization undertaking a Six Sigma project.

## Process Management and Six Sigma

BPM is a systematic approach to understanding, improving, and managing a business. It has the potential to yield substantial and long-term benefits. The Six Sigma methodology is broken down into five distinct phases: define, measure, analyze, improve and control. The BPM discipline and its four phases—document, assess, improve, and manage—are a natural fit with Six Sigma.

For both BPM and Six Sigma, the final phase is not an end in itself, but merely the starting point of subsequent iterations where further improvements and gains remain to be uncovered and exploited. Though rigorous in nature, the significance of sequential and cyclical application in both Six Sigma and BPM cannot be underestimated. The following diagram illustrates how the phases of BPM correspond with the phases of the Six Sigma methodology:



It's clear that a well-defined methodology underpins both approaches and, so too, does the need for best-of-breed tools and training. The skills to apply those tools to a variety of project situations that a Black Belt or Green Belt will encounter are critical to successful application. iGrafx provides a comprehensive set of accessible solutions across all phases of a Six Sigma project.

## **BPM phase one – Document**

During the document phase, a snapshot of how the business operates is taken. Existing documentation — from initiatives such as ISO 9000, increasingly available in flowchart form — provides a good starting point. Where such information does not exist, the time required to achieve this task can be minimized through process mapping and flowcharting.

In addition, best-in-class flowcharting tools from iGrafx enable the inclusion of metrics that quantify the performance, cycle-times and error rates of processes.

## **BPM phase two – Assess**

Armed with information-rich flowcharts, a priority for Six Sigma teams is to identify and quantify potential payback opportunities. Flowcharts not only reveal low-hanging fruit but also quickly expose hidden factories—a Six Sigma term for rework loops that exist to counter suboptimal activities elsewhere. BPM solutions from iGrafx enable team members to collaborate and repurpose earlier research for a variety of initiatives, including ISO, Small Outline Package (SOP) guides, work instructions, and knowledge management. This frees Six Sigma teams to focus on the processes that generate the greatest dividends.

A Six Sigma project that focuses on process makes it easier to identify process costs, rework and poor-quality costs, as well as the potential bottom-line dividends from process improvements.

## **BPM phase three – Improve**

During the improve stage, the goal is to evaluate how an organization's resources, such as personnel, equipment, and facilities can be used most efficiently. The most common goals of process improvement include reducing or eliminating costs, shortening cycle-time or time-to-market, and improving product quality—which can be a function of time, cost and service, or the product itself.

Implementing and redesigning a process or activity in one area can adversely affect results elsewhere. The negative, though inadvertent, impact of process change is a common pitfall for any process improvement effort. Process modeling and simulation tools provide a bird's-eye view enabling the effects of a change in one department to be identified across the organization. Armed with new insight into process, costly mistakes can be avoided.

Spreadsheets are now considered the foundation to financial planning and process models are fast becoming the cornerstone of process improvement. Modern tools enable management to explore the interdependencies of one activity on another, allowing them to create hypothetical scenarios, witness the effects of change, and measure their impact through reports and graphs. For example, a company may want to know the results of increasing staffing levels in their warehouses. Process simulation can help identify where and why resources are idle and reveal the causes of bottlenecks. This ability to provide answers to "what if" scenarios gives management a substantial edge when making business decisions.

Design of Experiments (DOE) is a key technique fundamental to successful Six Sigma projects. DOE requires participants to explore complex interdependencies such as increasing staff by one, two, or three new hires and—at the same time—considering other variables such as a changing to a 7.5, 8, or 8.5 hour work day. For many, to conduct DOE in an operational environment is impractical. Halting production, reorganizing a factory or process, then restarting, testing and measuring, either carries with it high risks, or places an unacceptable impact on the business. A process-centric approach to Six Sigma means performing a true multi-variable DOE using a process model that is risk and cost free, bringing a new dimension to ‘What if?’

## **BPM phase four – Manage**

A process-centric approach to Six Sigma exposes valuable information on the health of a business. It yields knowledge and insight into processes, re-defines required performance levels, creates an understanding of their interdependencies, and above all, exposes deficiencies. For both Six Sigma and BPM, the final phase does not represent an end in itself.

The goal of this phase is the deployment of change across the enterprise. Controlling and optimizing processes is an ongoing activity to ensure the organization continues moving toward increasing levels of excellence by constantly reducing variations in process. BPM promotes best practices by sharing knowledge, tracking opportunities for improvement, and helping to manage and control changes to the process. Statistical Six Sigma techniques as well as common-sense BPM practices are necessary to keep an organization on the right track. Once low-hanging fruit opportunities have been harvested, further returns require greater precision in planning and more support to fully realize long-term rewards. As successive Six Sigma projects return dividends in terms of cost, process efficiency and customer satisfaction in one location, constraints simply move elsewhere. Ongoing and continual improvements need to pervade the entire organization to be truly effective.

## **Benefits of Six Sigma and iGrafx®**

The key benefits of a process-centric approach to Six Sigma are:

- Easier and more effective project identification
- Reduced project time
- Reduced experimentation costs
- Improved data integrity and productivity
- Improved results and more effective deployment

The role of good management tools is clear for any organization considering or participating in a Six Sigma initiative. Most Six Sigma professional institutions have included a process-centric approach at the core of their Black Belt training programs. Evidence continues to emerge indicating that a process-centric approach

is helping organizations reap greater rewards from Six Sigma projects with more certainty and achieve continually higher levels of customer satisfaction.

## About iGrafx®

iGrafx is a family of Business Process Analysis tools that support the roles of Six Sigma project specialists. The iGrafx suite of products meets the needs of Yellow Belts and Green Belts, as well as addresses the needs of Black Belts and Master Black Belts. For any enterprise, iGrafx® Process Central® is the foundation for an organization's process management system.

## iGrafx® FlowCharter®

iGrafx FlowCharter is a professional business modeling tool that enables an organization to create process maps, flowcharts, HR charts and other related diagrams directly relevant to process improvement and Six Sigma. Renowned for its ease of use, iGrafx FlowCharter helps you to create clear, visual representations of how work gets done across the organization to provide you with the crucial understanding needed to communicate and improve your business. Flowchart diagrams of all types can be posted to the Web or a company intranet.

## iGrafx® Process™

iGrafx Process transforms flowcharts into intelligent decision support tools. It enables business analysts and other process specialists to convert static flowcharts into dynamic simulations that model virtually any business, manufacturing process or system. Cycle time, resources, costs and more can be tracked against multiple scenarios enabling modelers to compare the 'as-is' with the 'should-be'. Extensive graphical reports help visualize data in a form suitable for management review to recognize potential benefits or problems.

## iGrafx® Process™ for Six Sigma

iGrafx Process for Six Sigma is a process analysis and improvement solution designed specifically to support the Six Sigma methodology. Experiments are a key component of any Six Sigma initiative and are often costly and time consuming. iGrafx Process for Six Sigma enables full-factorial testing, virtually eliminating cost and resource concerns. iGrafx Process for Six Sigma delivers seamless integration with MINITAB® and JMP® which enables you to share data between the applications. Use MINITAB or JMP to calculate distribution probabilities and populate those values into iGrafx Process for Six Sigma to increase the accuracy of your model. When conducting DOE, define the model factors you want to conduct with iGrafx Process for Six Sigma and the statistical analysis tool automatically creates the experiments.

## iGrafx® Process Central®

iGrafx Process Central is a repository that provides a team-based, collaborative environment for process analysis and management. With libraries of process information stored in one location, your organization is able to manage change, share work and sustain process improvement projects. iGrafx Process Central

integrates with iGrafx® Web Central™, a web portal for sharing process information across the entire organization.

## Training and Consulting

The iGrafx Professional Services team is available to shorten your organization's learning curve through classroom-based workshops on your site or at any of the frequently scheduled public workshops throughout the US, Europe and elsewhere. In addition to providing turn-key services, our professional services can be tailored to meet an organization's specific needs. Where project timelines are critical to an organization's objectives, iGrafx Rapid Project Management (RPM) service can accelerate any Six Sigma initiative.

## For More Information

Visit us at [www.iGrafx.com](http://www.iGrafx.com)

### Global Headquarters

7585 SW Mohawk Street  
Tualatin, OR 97062  
Tel.: 503.404.6050  
Fax: 503.691.2451

[info@iGrafx.com](mailto:info@iGrafx.com)  
[www.iGrafx.com](http://www.iGrafx.com)

### EMEA Headquarters

Dr.-Johann-Heitzer-Str. 2  
85757 Karlsfeld  
Germany  
Tel.: +49 8131 3175 100  
Fax: +49 8131 3175 101  
[info.de@iGrafx.com](mailto:info.de@iGrafx.com)  
[www.iGrafx.de](http://www.iGrafx.de)

### For complete contact details visit:

[www.iGrafx.com/contact](http://www.iGrafx.com/contact)

© 2019 iGrafx, LLC. All rights reserved.

iGrafx, the iGrafx logo, iGrafx FlowCharter, iGrafx Process, iGrafx Process for Six Sigma, and iGrafx Process Central are trademarks or registered trademarks of iGrafx, LLC and/or its subsidiaries in the U.S. and/or other countries. MINITAB is a trademark of Minitab Inc. JMP is a registered trademark of SAS Institute Inc. in the USA and a trademark in all other countries. Six Sigma is a trademark of Motorola, Inc. All other product and company names and logos are trademarks or registered trademarks of their respective companies.