

A Marriage Made in Heaven: Combining Six Sigma with Process Management to Reach Unprecedented Levels of Business Performance

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Abstract

Given the competitive nature of corporate business, companies are constantly seeking the most effective ways to improve productivity and maximize monetary gain. Consequently, companies are demanding more control over their business processes. Serving as a bridge that joins technology with business, Business Process Management technologies aid with streamlining workforce efforts, reducing task times, lessening process variation, and producing more predictable results. This, in turn, makes the business more robust and profitable.

Companies are discovering the benefit of combining Business Process Management (BPM) technologies with Six Sigma methods and tools to advance the performance level of business processes. With BPM and Six Sigma, companies can better characterize, understand, and manage entire value chains. People and systems, as process participants, can now perform to unprecedented levels of control and predictability. Sustainable enterprise improvements that were previously unavailable are possible through the integration of BPM and Six Sigma.

This article illustrates how organizations in various industries combine BPM technologies and Six Sigma to enable their most important initiatives. Projects as diverse as assimilating new employees, streamlining management processes, and improving a corporation's ability to visualize and optimize necessary operations can be heightened as a result of this implementation. Aligning BPM and Six Sigma allows businesses to contend as legitimate competitors in their industry.

Introduction

A couple of years ago, a leading Fortune 100 financial firm committed to improving its business by instituting Six Sigma process efforts in specific departments across the company. They expanded Six Sigma training and used the methodology to reduce errors in existing processes. They even applied Six Sigma to product development to help build in quality from the start. As a result, the company increased efficiency, reduced costs, and created revenue-producing opportunities.

Now, in a strategic effort to further optimize business processes, by aligning them with enterprise objectives and integrating them with other processes across the company, the financial services firm needed more than just Six Sigma. The company needed a tool that would augment the principles of Six Sigma to provide an enterprise view of processes and more direct control and manipulation over improvements to those processes. They turned to Business Process Management (BPM).

BPM is the practice of dynamically aligning processes across an enterprise while using technologies to provide visibility and management at any point in the process lifecycle. BPM and associated technologies model the flow of data, people, systems, and physical resources, and build or modify ideal processes in alignment with business objectives and market needs. All improvements are in real time, with no additional systems, rebuilding, or development needed.

To test the alignment of Six Sigma with BPM, the financial services firm applied it to one of its

most critical business functions – the recruitment and retention for new and experienced financial advisors. Within the firm, there is a segment of advisors offering financial planning and services to individual customers, businesses, and institutions. A key strategy in 2003/2004 was to continue to grow its advisor force while many of its competitors cut back on their recruiting efforts.

While today the company has one of the largest field forces in the country, they wanted to further improve investment results by leveraging their financial advisors to secure longer-term relationships and achieve better client retention. It came down to instituting a better way to recruit, train, and retain advisors across the enterprise. The hiring process was distributed across multiple owners – both internal and external to the organization. As a result, tracking and status reporting were inconsistent, thus creating a duplication of efforts that was labor intensive and inefficient.

The financial services company required BPM to align with the Six Sigma methodology already in use and provide an end-to-end view of hiring across departments, regions, and workgroups. Indeed, the combination of Six Sigma problem solving methodologies with BPM tools worked well to model processes, identify bottlenecks, and test scenarios. In addition, by leveraging the rigor of the Six Sigma methodology with the automation improvement capabilities of BPM, the company was able to quickly design an optimal process flow for companywide recruitment. As a result, this new and more efficient process saved 20-30 percent in time and labor costs and created at least another 20-30 percent efficiency improvement by deploying and automating the hiring process across the financial services group.

The Convergence of Six Sigma and BPM

Since the late 1990s when Six Sigma started to move beyond the manufacturing industry and into the service sector, the adoption of Six Sigma among U.S. companies with revenues greater than \$200 million has been around 28 percent, according to trend analyses by Don Redinius of Savvi International, a business performance improvement solutions company.

Although the growth of Six Sigma has been significant, it has not been as effective as it could. Six Sigma training is expensive with only the largest companies in a position to afford Black Belts. Also, collecting and tracking huge amounts of data across multiple departments/business units has been difficult for Six Sigma due to a lack of standardized process monitoring technology. As a result, improvement projects tend to be department or function specific with poor integration between processes across the enterprise. Finally, although the Six Sigma methodology for solving problems is one of the best because of its discipline and rigor, it falls a bit short in the “control” phase. Six Sigma’s control phase tends to use manual methods for managing and sustaining improvements over time. Using BPM methods, Six Sigma is just now starting to realize the benefits of automating the processes and controls. BPM brings a paradigm shift of process control efficiency and effectiveness.

BPM and associated integration, workflow, and modeling technologies have the potential to augment Six Sigma to create a more robust approach to process improvement, management, and control. The strengths of BPM complement the weaknesses of Six Sigma, and vice versa. For example, BPM readily characterizes process inputs, outputs, and their performances, but lacks the analytical tools to solve difficult and complex problems. By using BPM tools to model, simulate, and connect processes together, to visualize how they link to critical success factors, gaps in performance are identified. Then the problems creating the performance gaps can be solved using Six Sigma improvement tools. Finally, BPM technologies can electronically execute change and continuously manage and improve a process. BPM tools are especially good when a variety of processes and associated resources need to be connected across an enterprise.

Indeed, BPM and Six Sigma are synergistic. In fact, the combination of the two creates the most complete and robust approach to business performance improvement at the enterprise level – the likes of which businesses today have not yet seen.

Benefits to Six Sigma Practitioners

It is projected by Redinius that over 80 percent of companies will be using Six Sigma integrated with BPM and other performance systems, such as Lean and Balanced Score Card, by 2010. But for now, activity in combining Six Sigma with BPM is fairly limited. While more companies in non-manufacturing and service sectors are starting to deploy both Six Sigma and BPM initiatives independent of one another, a combination of the two is not yet a mainstream approach.

Early adopters, however, in the financial services and retail industries are starting to see results. The benefits to practitioners in combining Six Sigma with BPM include the following:

- BPM helps expand the effectiveness of Six Sigma across an enterprise.
- BPM provides assistance with tools to aid in the design and simulation of business processes.
- BPM helps Six Sigma better capture data.
- BPM takes Six Sigma to unprecedented levels of control and predictability.
- BPM helps Six Sigma to link to corporate strategy or integrate with other processes.

How a Services Company Integrated BPM with Six Sigma

If an organization has implemented Six Sigma, BPM is a catalyst for further improvement in all of the phases of the methodology. Below is an overview of how one Fortune 1000 services company applied BPM to the Six Sigma DMAIC methodology in use across its organization to significantly improve operating performance in the cash flow and receivables process.

Define

Performance data in the cash flow and receivables process was looked at by a Six Sigma Black Belt in terms of key outputs, capabilities, and need for improvement to meet business needs. It was identified through this step that the invoice preparation process was partially a manual process that required inputs from service reports generated by several departments. Further data analysis revealed that 79 percent of the invoices were exceeding their targeted completion time of 10 days, and 48 percent were exceeding the upper limit of 15 days to issue the invoice to the customer. This created an undesirable outlay of cash, in the form of receivable averaging over 62 days, estimated at \$5 million.

The Black Belt determined that the quickest impact was to create an improvement project to reduce the invoice preparation cycle time.

Measure

In this phase, BPM process maps expedited the task of characterizing processes. Through a highly intuitive set of tools, the Black Belt was able to lay out all of the activities, participants, business rules, technologies, and resources that comprised the invoicing process, and illustrated the invoicing activities performed by all participants (people, systems, and resources) across multiple functional areas of the extended enterprise.

Analyze

The primary activity is to narrow down the number of potential contributors to a problem and to find the root causes. A detailed model of the process was used to discover and simulate how the existing process functioned and to determine where potential bottlenecks and other problems were occurring. Six causes were confirmed as major contributing problems:

- Services recording (17 percent had incorrect/missing information)
- Invoice reconciliation (slow)
- Manager review (failure to review in a timely manner)
- Internal mail routing (inconsistent delivery location and time)
- Queue method (first in first out). For example, a claim could sit in Accounts Receivables between one and 12 days before being worked on.
- Of the 36 activities identified in the process map, 21 were designated as non-value added. The non-value added steps alone accounted for approximately seven days of the current cycle time.

Improve

Once the process was identified, mapped, and modeled, and the most likely root causes were identified, additional "what if" scenarios were used to create the improvement solution. Based on the knowledge gained, it was decided that the process could be partially automated. Using BPM technology along with the process analytics led to four areas where improvement could be taken:

- Fourteen of the 21 non value-adding steps were recommended to be removed. This reduced the invoice process cycle time by three days.
- Eighty-five percent of the customer services data was recommended for digital entry by the performing department as the service was provided. This reduced the service reporting errors to less than one percent from the previous 17 percent. Thus, another two days were removed from the cycle time.
- Using BPM, it was no longer necessary to send hard copies of the services input forms through the office mail. The Accounts Receivable department was provided electronic access via EAI (Enterprise Application Integration). Cycle time was further reduced by one day.
- When human interaction was required to complete a process action, the BPM system automatically ordered the transactions into a first-in-first-out approach. This eliminated an additional two days of cycle time.

Control

The objective is to provide sustainability for the improvement solution. To assure that process performance would be consistent and manageable, a BPM web-based monitoring and tracking system was built, to provide managers with real-time visibility up and down the process, to maintain control of the invoicing. They could take specific actions when process activity was not meeting predetermined requirements. Examples:

- If the invoice reconciliation process exceeded one day, the affected invoices were aggregated together with an action email to the department manager for immediate intervention.
- Services recorded error rates were monitored within the system using statistical process control tools, again alerting management if the process lost control.
- The total invoice volumes, invoice processing times, error rates, and work in process volumes at key process steps were built into a dashboard system. These parameters were then monitored using SPC rules and reviewed by the team on a

weekly basis.

- A monthly process management summary report was automatically generated by the BPM system and reviewed at the company's monthly operations review meeting to assure conformance and consistency. The executive teams reviewed this data as it was considered a critical success factor for the company.

The performance of the process significantly improved by using the Six Sigma problem, solving methodology in combination with the application of BPM. The business benefits included a total of seven days of average cycle time removed from the invoice preparation process, service recording errors reduced from 17 percent to less than one percent, and the number of invoices completed over the upper limit of 15 days decreased from 47.8 percent to 7.9 percent.

The financial benefits were equally significant. Revenue collection improved by \$4.2 million, resulting in a net annual hard savings of \$226,800 (at a cost of capital of 5.2 percent). Additionally, the company improved its operating cash margins significantly, which subsequently improved its debt rating.

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