

BPM, Lean and Six Sigma Better Together

The Whole is Greater Than the Sum of the Parts

Dan Morris and Gabrielle Field

In the current economic and hyper-competitive market, long term success is based more on an ability to adapt than almost any other single factor. This adaptability relies on innovation and an ability to change quickly. One without the other delivers less than great results. Similarly, every company must apply this flexibility to all parts of the enterprise in order to drive out cost, reduce errors, and improve their ability to compete.

Today, there are many operational improvement disciplines in the business world. The most widely used of these methods are Six Sigma, Lean, and BPM. These three approaches are usually considered to be stand alone ways to address and control change. But, in reality, they often supplement one another. When merged, they provide an environment that allows the actual delivery on parts of the promise of each approach that really have failed to be delivered in the past.

Every company must improve its operations if it wants to optimize its work in order to become a winner in the game of global competition. This ability is critical to delivering a high quality product at the lowest cost possible. It is also critical in reacting to competition. Today many companies are wrestling with this need and looking at how they can deliver the type of nimble operation needed to both improve their operations and also support continuous improvement. Experience has shown that the keys to achieving these goals are speed and an ability to continually refocus on operational refinement. But, delivering this “change environment” has proven to be difficult.

In this quest, many are asking how Business Process Management, Lean, Six Sigma and other change methods fit together and how they differ.

It is our belief that these three disciplines work best when used to create a new business change environment where BPM provides the overall framework to support ongoing change and Lean and Six Sigma techniques and methods are used to support continuous improvement. This paper looks at this issue and proposes a relationship between these approaches and the supporting methods and tools.

Definition of Concepts

The place to start any discussion of these approaches to improvement is with a baseline definition for the paper. This is required because Lean and BPM can mean different

things when applied to different purposes. Similarly, Six Sigma has implementation variations and thus is also open to some interpretation.

While these disciplines and their methods and tools seem to compete at first glance, the fact is they are actually complimentary to one another; and when used together, provide a comprehensive change environment. Part of the reason for this seeming overlap is that all three are based to a large degree on the work and statistics of Edward Deming. But, each also applies these methods in a different way and each has evolved to focus on a different area in operational improvement.

The following definitions provide the foundation for the concepts in this paper. They are:

Business Process Management, or BPM, is a discipline that is focused on delivering operational improvement. It promotes a process centric management approach that is supported by automated tools to deliver an operational environment that supports rapid change and continuous improvement. BPM provides a process based view of the business activity and promotes the use of process models with clearly visible associated business and technical operational rules. While component parts of these tool suites have existed since the late 1980s, they were not combined until a breakthrough in the early 2000's. The real breakthrough that allowed this coalescing of products was the advent of rules-based application generation that was tied to process models. Since 2003, various component products have been brought together to form BPM product suites. It is the melding of the BPM approaches, techniques and tools along with their ability to quickly generate applications that delivers the speed needed to optimize an operation and to support rapid change. This ability is what delivers both initial optimization and continuous improvement.



Lean is a philosophy and approach that stresses continuous improvement to reduce waste and streamline operations. It is customer centric and stresses the concept of eliminating any activity that fails to add value to the creation or delivery of a product or service. Lean is focused on providing higher quality, reduced cycle time, and lower costs. Because it produces improved production systems, it is believed to increase production capability and flexibility. But in practice, its concepts can be, and have been, applied in all areas of a business. James Womack and Daniel Jones wrote about the Toyota Production System (TPS) and developed the term "Lean" in their book, [The Machine That Changed the World](#). Today, Lean is supported by tools and statistical methods that although not as robust as those of Six Sigma, are an important part of improvement projects. For the most part Lean has been used in manufacturing where organizations are applying Lean tools in service and transactional settings with great success. Typical results show dramatic reductions in time while significantly boosting quality.



Six Sigma is a method that drives business performance improvement by reducing or narrowing variation. The goal is to reach a statistical variation of Six Sigma (or six

standard deviations of variation) within the limits defined by the customer's specifications. Since its introduction in 1987, Six Sigma has become one of the most recognized enterprise improvement methodologies for companies seeking to identify business problems, define improvement opportunities and projects, and deliver solutions to realize predictable and repeatable results. "Six Sigma proponents claim that its benefits include up to 50% process cost reduction, cycle-time improvement, decrease in waste of materials, improved understanding of customer requirements, increased customer satisfaction, and more reliable products and services." www.searchcio.com website

Note: According to the Six Sigma Academy, Black Belts save companies approximately \$230,000 per project and can complete four to 6 projects per year. General Electric, one of the most successful companies implementing Six Sigma, has estimated benefits on the order of \$10 billion during the first five years of implementation. From www.iSixSigma.com website.

The Six Sigma approach is based on specific methodologies that help measure work and statistically analyze it for opportunities to improve quality and deliver consistent outcomes. The focus is on identifying defects in a product or process and then looking at how the defects can be removed during the activities in the process. In Six Sigma, defects are defined as an instance in which the process fails to meet customer expectations. In analyzing quality, the method uses a series of tools to measure variability in statistical terms across processes. Motorola first used these measures to capture internal process performance. Additionally, they extended the concept to include the process variability and defects from external vendors' and suppliers' processes. Like Lean and BPM, Six Sigma incorporates concepts that rely on continuous improvement and process visibility.



All three methods share a common foundation. BPR, Six Sigma and Lean approaches are an offshoot of the work done by W. Edward Deming as described in his book, "Out of the Crisis", MIT Center for Advanced Engineering Study, 1982. This work by Deming is the foundation for statistical operational improvement and was a key part of the thinking behind the process reengineering movement in the 1990s. That is why all three approaches, while very different, are process centric and all are focused on reduction of waste and error in process.

Today, the Deming concepts and their derivatives expressed in Lean, Six Sigma and others, are a key part of Business Process Management's continuous improvement promise. We say "promise" because few companies have implemented BPM to the point where they can use it for continuous improvement. However, we believe that without the operational framework and information that BPM provides, the Lean and Six Sigma approaches can only provide temporary results and those at a high price in terms of analysis, change design, and implementation.

BPM provides the framework for Lean and Six Sigma

The problem is one of context. Lean and Six Sigma approaches are generally focused on dealing with specific, fairly narrow problems. Their models and measurements are meant to help uncover the information that supports their focus – elimination of non-value add work in a function and quality consistency. But, neither Lean nor Six Sigma can effectively support broader, less defined improvement efforts without the models and associated information on the operation provided by BPM,. Also, without the performance measurement and management capabilities of BPM environments, it is difficult to adequately measure performance across a process or a part of a process (ex. a Department's workflow). Finally, identifying, creating, and implementing a Lean or Six Sigma based improvement often takes considerable time. And, during this lag time the improvement can lose value and savings is definitely lost. Without the speed of change that a BPM environment provides through simulation modeling, process management, and application generation, the time to change elongates and does not adequately support the needs of the business. Also, without a BPM base and its associated information, Lean and Six Sigma practitioners must make due with limited and often old information and the related delays in the change process as teams try to collect the information they need.

While there are some redundancies among these three approaches, they each fill holes or weaknesses in the overall coverage of one another and each is necessary to provide a complete change environment. However, making the three disciplines work together can be a challenge – especially if the participants are not open minded enough to admit weaknesses and seek ways to make their favorite discipline provide higher value.

Covering One Another's Weaknesses

Operational improvement experience has shown that Lean and Six Sigma, applied to individual processes without the benefit of a BPM based change environment, have two serious weaknesses.

First, both focus on improving parts of an overall process. This puts the improvements in a type of box and as mentioned, the improvement tends to be narrowly focused. The problem this creates is that isolated improvements can sub optimize the activity downstream in the process and cause problems in the flow of goods and services across the enterprise. This is the reason that all activity in a process must be viewed as complete picture.

A classic example is the cable/ telecom service provider that introduced a new broadband product several years ago as part of a new broadband division. Customers receiving the product mailed from the new division would call the corporate customer service group for installation assistance, where they were told they were not in the customer database. Without knowing, the efficient design of the new division had sub optimized the manual setup of customers in the core business services group resulting in the two groups not linking their customers. This forced a synchronization problem which hurt the new division.

However, with BPM the first objective is to understand at least the basics of the entire process with detail on the parts within the “scope” of the problem to be corrected. As noted, the reason for this broadening of scope is that BPM practitioners have found that too narrow a view often lacks the context or framework for understanding the real impact of change on the work. But, while BPM offers the ability to have a broad, and yet where needed, a detailed, view of the operation, it lacks the evaluative disciplines of Six Sigma and Lean.

In addition, as part of the scope issues, Six Sigma focuses on improving parts of the operation through statistical analysis. It is NOT a method that allows a lot of flexibility or operational innovation. In today’s business environment innovation will make the difference between winners and losers. A method that fails to accommodate innovation and flexibility is limited. The same is true of Lean. True innovation and sustainable cost reduction requires that any new design consider upstream improvement to eliminate problems and possible downstream impact. However, when viewed in a narrow context, the real relationships with upstream and downstream work become unimportant in looking at needed and optional work. Because of these problems, some companies have started to move away from Six Sigma or to limit its use.

... “has the Six Sigma moment passed? I think it has,” says Babson College management professor Tom Davenport. “Process management is a good thing. But I think it always has to be leavened a bit with a focus on innovation and [customer relationships].” The discipline was developed as a systematic way to improve quality, but the reason it caught fire was its effectiveness in cutting costs and improving profitability. That makes it a powerful tool—if those are a company’s goals. But as innovation becomes the cause du jour, companies are increasingly confronting the side effects of a Six Sigma culture. From www.businessweek.com June 11th, “Six Sigma: So yesterday?”

This inability to support innovation and change is a serious defect in both Six Sigma and in its brother method Lean. But, one can argue that neither Six Sigma nor Lean were meant for innovation and instead must be used as intended: focused incremental improvement. Articles regarding a questioning of their use with the possible abandonment of these approaches are now common on the internet. But, if you add a BPM environment as the foundation for the application of these disciplines, the picture changes.

The second weakness is that Lean and Six Sigma rely on resources from competing business groups (such as IT, other business units, and collaborative partners) and a cooperative view of priorities from all involved. But, different business units often have their own high priority activity, and conflicts in priority can slow down improvements. This is true even with executive backing. It is simply a matter of priorities and limited resources among different managers and groups.

Due to these limitations, neither approach can consistently deliver rapid change. They can deliver constant change, but without an enterprise focus to insure the relevancy of the

change, differing priorities can cause conflict and delays and the impact can be diminished.

In addition, while both disciplines have tools that support their methodology, neither have the type of broad based tools that BPM offers. The tools supporting BPM now provide comprehensive modeling, rules definition capabilities, simulation capabilities, and flexible databases to control this information. With their ability to generate process management and functional applications, they also offer a way to rapidly deliver improvement. This delivers a framework for the identification of areas that could benefit from the application of Lean or Six Sigma principles and the rapid design, simulation, and generation of changes to the work and its management.

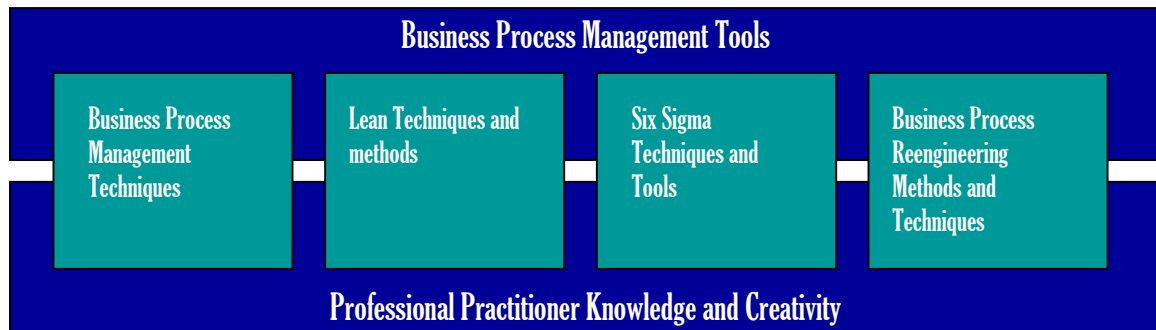
BPM thus provides the framework for change through its process and workflow models; especially when application touch-points, legacy application functionality, data use and metrics are added to the normal work activities. These models allow management to build the complete picture of the operation incrementally, by linking information from one project and operation to that of the next project. This linking can continue until a complete picture of the process is built. This framework for identifying and delivering improvement can thus be built incrementally at a pace and investment cost that is realistic for the company.

The improvement team can quickly gain insight into how any operation is working through these BPM models and associated performance reporting, to gain control over its management. Also, the BPM environment provides proof of needed participation and inclusion by showing who needs to be involved in improving any process or workflow, what that involvement produces, and how the product(s) will be used. This helps break down the barriers between groups and promotes inclusion and cooperation for a common good. It also clearly shows the limitations in improvement if a part of the operation is not included in the change, or acts as a bottleneck.

But, BPM, like Lean and Six Sigma, relies on the creativity and insight of practitioners to drive improvement. This provides both strengths and weaknesses – depending on who is performing the work. That is why people who are creative and experienced in operational and IT change should be included in any important improvement team. Arguably, this experience is more important than industry knowledge, which can be pulled from managers and staff. The understanding of how to redesign activity and how to design acceptable change is critical to creating meaningful and lasting improvement. But, it is the flexibility to try multiple simulated improvement scenarios, delivered by this BPM based environment that supports creativity and drives innovation.

In this environment, improvement will first have a fairly broad scope. Initial operational streamlining and problem elimination will produce a first round of improvement and cost reduction. But, it will not provide sustained operational optimization. When additional change is required by competitive pressure, the scope and objective will likely remain fairly broad. But, again, while this is important in retaining a company's ability to compete, it will not provide sustained optimization. Following this initial broad based

improvement, Six Sigma and Lean become important tools in evolving to continuous improvement because they help focus future internal improvement. Lean methods now become an important tool in making business changes that lead to optimization. Six Sigma tools and methods now identify what must be further improved to lower cost and rework/waste. In this use scenario, these disciplines provide a set of concepts and tools that when applied in the proper context, can make valuable contributions to continuous improvement. How they are used, however, and the creativity of the team is what determines the true value and impact of the change – not the discipline.



Disciplines in the BPM Change Environment

Figure 1

BPM, in and of itself, does not really have the rigor of a statistical method like Six Sigma to define opportunities for improvement. It does not have the focus of a Lean approach. But, it does provide the context for collecting the information needed to drive the Six Sigma and Lean methods. So, structurally, BPM provides the change environment, Lean provides the focus on eliminating work, and Six Sigma adds a rigorous approach to identifying and dealing with error. Combining these features lets a process improvement team identify the opportunities for improvement while maximizing an organization's ability to implement changes.

But, this melding of disciplines and their methods and techniques alone will still not be sufficient to deliver optimization. Real, fundamental change is related to insight and the creative application of Business Process Reengineering principals and techniques. Uninspired people, regardless of the strength of the change environment or the tools they have to work, with will deliver uninspired results. This people factor and differentiating based on creativity is seldom added to the improvement equation. But, it is as important as any other part of this change environment. So, we propose that any serious attempt to create an environment that allows rapid change be composed of all four components.

The problem has always been the ability to change rapidly

No one will argue that almost every business is dynamic. They change constantly – every department and every process operates in a perpetual twilight of controlled chaos.

This twilight is often caused by an inability for most companies to see the real way their processes work and the way the work flows through the company. Few companies have a complete picture or set of maps that describe the operation in detail. Of these companies, few have placed the information and maps in a reusable form and many have simply been put in drawing tools to make their presentation clearer. As a result, the information that has been collected is difficult to change and is normally abandoned after its initial use on a project.

This has caused change projects to start with an extended analytical phase where the operation's activity and information is constantly re-identified. While the information that does exist is sometimes dusted off and used as a starting point, it is often so out of date that eventually the team starts over. This dramatically slows the change process and increases cost. It also is a major reason that critical historical information is lost and the quality of any re-identification of activity, rules, formula, etc. is subject to variance as team ability varies and time constraints cause short cuts to be taken.

Also, processes wind their way through any company and are performed in component parts by organizations that often do not know what the work they do is part of – they do not understand the larger end to end perspective. As a result, participation in the process is often open to internal competition, “that really doesn't affect me or my operation” and as mentioned, the priority of any change initiative can vary from group to group. This affects hand-offs, timing, quality, and more, and can limit the impact of any effort and extend the duration and cost.

Add in the time it takes to identify, design and make a change to legacy IT applications or application interfaces and the time for any change elongates. Of course, the IT backlog and IT prioritization comes into play and adds to the delay; even important changes can languish for months as higher ranked project related systems changes are implemented.

BPM helps address this disconnect in the project planning stage by providing insight into the real flow of work, the IT applications that will be involved and the scope that is required. This forces an agreement on the scope and priority up front.

When considered from this perspective it is easy to see why change is usually costly, somewhat uncontrolled and often disjointed. But, when BPM tools and methods provide a change environment (see figure 1) this picture itself changes. The models and all collected and (hopefully) vetted data is always available through the BPM based change environment. This can include rules, problems, volumes, data and data flow, system use and more. Because policies which accompany a move to this change environment will require that all changes be designed within it, the data will always be at least fairly up to date. Through this environment, no one ever needs to start from scratch once the initial models are created. Assuming appropriate process governance over the use of this environment has been put in place, the quality of the information will also be good.

This environment now allows any change project or any manager to look up comprehensive information, confirm it, redesign the operation knowing the upstream and

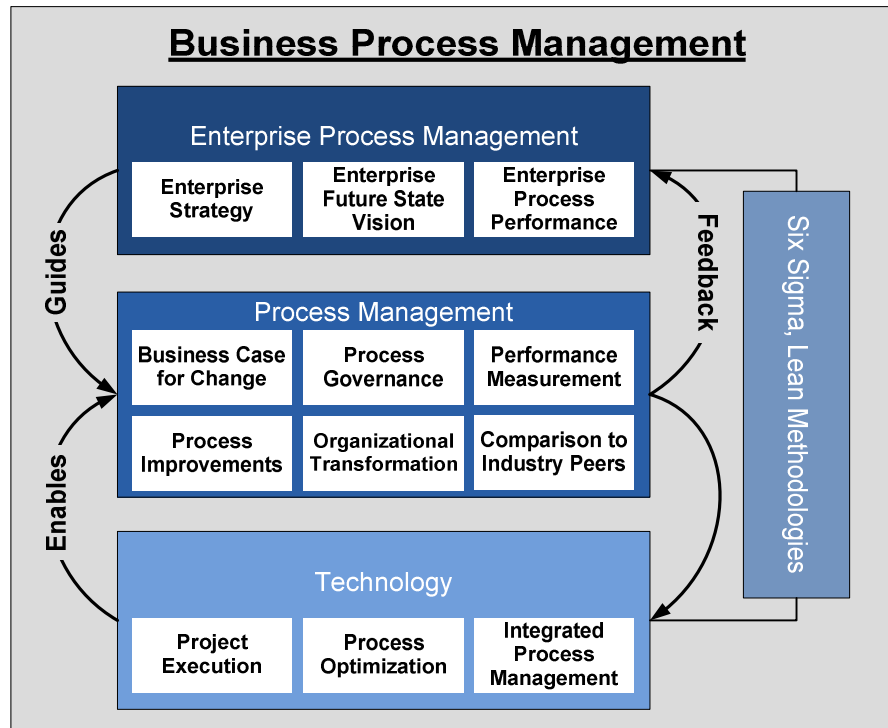
downstream impact, simulate changes, compare costs and improvement, and then decide on the best action. If a complete BPM tool suite has been used as the foundation for this change environment, business managers working with data analysts will now be able to: generate the applications that manage their workflows and the overall processes, track work, and monitor performance. In some cases, these environments can generate functional applications to support the automation of work that has never been supported by legacy applications.

The result is speed. In this environment it is now possible to change the business operation, its application support and its data access quickly. If the IT group has moved to an SOA based application and data access approach, these changes may be able to happen in days. Legacy application function and data interface changes are still a problem, but in some cases the automation support can be generated outside the legacy environment to save time and improve flexibility.

It is this speed that makes all the difference and allows the operation to become dynamic and flexible and hyper-competitive. Of course, this speed is now able to finally deliver both initial and sustained business optimization as changes become constantly driven by Lean and Six Sigma techniques to continually focus improvement.

Parts of the Same Whole

As an old saying goes, “don’t use a hammer when you need a screw driver”. This is absolutely true in business improvement and in larger business transformation projects. The same can be said for manufacturing process improvement. But, today that is exactly what is happening in many teams as some change disciplines are followed without the benefit offered by the others. The simple fact is that no one tool or discipline fits all change situations or needs.



Fitting it All Together

Figure 2

Figure 2 shows how all three approaches fit together and how they affect the overall change environment. The model shows the BPM core with the parts of this core that are affected the process improvements from Lean and Six Sigma projects.

We believe that creating this model will begin with the implementation of BPM tools and the movement to a process centric change based environment. This environment includes BPM tools, a rules engine, base business models, rules, operating information, problem and opportunity identification, performance measurement and monitoring, application use definitions and possibly the creation of an SOA based data access architecture. BPM methods and techniques, Lean philosophy methods and techniques, Six Sigma methods and techniques, and Business Process Reengineering methods and techniques (as shown above in Figure 2) are then added to complete the foundation.

To complete this foundation we propose that formal Change Management and formal Governance be added. This will form a complete change environment. This environment would follow a BPM centric discipline to provide guidance in project execution. When appropriate, this discipline would be modified to include Lean approaches and tools and Six Sigma methods and tools. This provides flexibility in mixing disciplines, techniques, tools and approaches to allow the teams to focus their activities and maximize their effectiveness. When needed due to the experience of a company's project managers, it may be appropriate to add in formal project management training and methods from a group like Project Management Institute.

When this is done, the whole will be much greater than the sum of the parts.

What happens when all are used together?

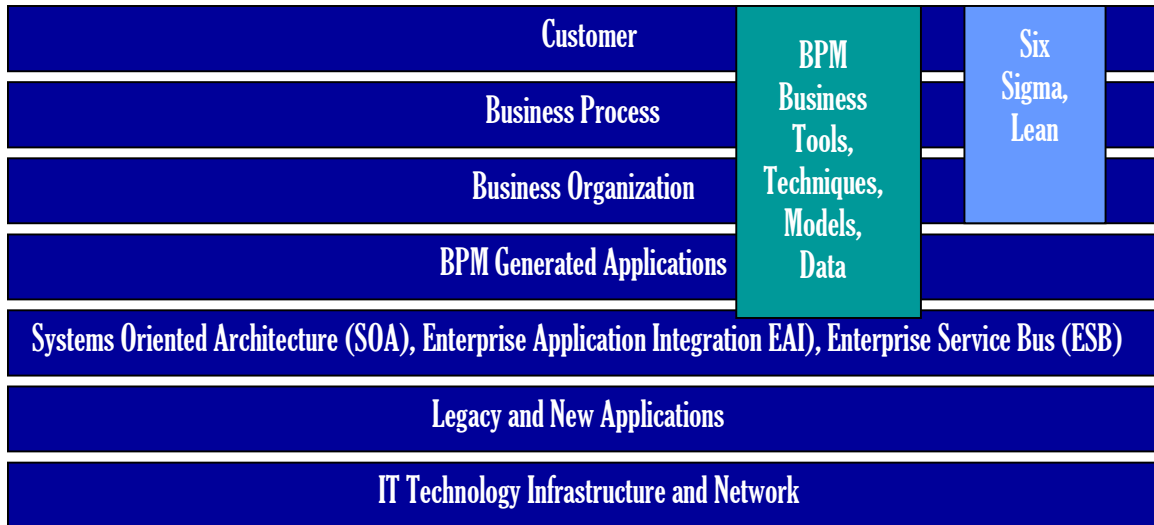
Too many people today have a bias toward one camp or another. They look at the use of these methods along with their techniques and tools as uniquely independent from one another. This has been promoted by separately training and credentialing the skills and concepts of each discipline. In reality, while this separation may have been useful for training, each approach and methodology provide only part of the tools required to optimize process performance. Any operational improvement team should apply the appropriate parts of each discipline at the right time in an improvement project. But, to do this, any team will need a staff of full time process designers with specialists who move in and out of the project.

Combining the disciplines lets the team take the best of all approaches and create a new integrated approach that drives performance improvement, operational streamlining, activity value analysis, and both performance management and operational automation while leveraging statistical quality improvement. This covers all the bases in looking at optimization and sustained improvement. Mixing in BPM tool support turns this mix into an environment for rapid change. This is a killer combination.

Formal Methodologies

IT application development methods really don't fit this business improvement environment very well – even though some formal methodologies include process or workflow definition as part of the methodology. Today some methods have been modified to relate to the technical side of BPM and are applicable to SOA and EAI adaptor development. They are also applicable for Enterprise Service Bus development. But, most of the methodologies are focused on technology and they are not really applicable for BPM, Lean or Six Sigma use without serious modification. The same is true for BPM oriented, Lean and Six Sigma methodologies, but in reverse – they really don't handle application enhancement or development very well.

What is needed is for these methodologies to be combined into a single integrated approach that can be scaled to fit the complexity and size of the improvement project. This is part of governance and will provide consistency to improvement projects. This methodology should also be designed to consider BPM concepts as modified by Lean and Six Sigma concepts. When combined, the integrated model resembles the one shown below in Figure 3. In addition, the methodology should be designed to fit your corporate environment and IT technology architecture. This will thus allow it to focus on activities that are realistic given your security, testing, production release, and technologies requirements.



Layers in the BPM Enterprise Architecture

Figure 3

More than Each Alone

Realizing the true potential of operational improvement requires that teams become flexible and open to the mixing of disciplines to deliver both immediate improvement and focused continuous improvement. This mixture of disciplines should also take advantage of the speed that BPM and BPM tools can deliver. It is this speed that makes the difference. Without it you cannot reach the speed needed to optimize any operation. This has been an elusive goal – although each of the disciplines has claimed to be the path to optimization.

In reality, no one has been able to truly optimize any process in the past. It has been impossible because of the limits on the speed of change that have been imposed by the delays in modifying application systems or licensing and implementing new applications. In the past, any change would take months or longer. Because businesses are dynamic, this meant that any design would be out of date before it could be built. That is why whatever was implemented usually needed updating and by definition, was thus sub-optimal. The changes could be a big step forward, but they could not deliver optimization and they could definitely not deliver sustained optimization – even using Lean or Six Sigma.

Historically, without this speed of change, even though companies have realized improvement, the improvement usually deteriorates over time and the process becomes inefficient and often ineffective again. Today, that limitation has been largely removed and with a BPM modeling and information foundation placed in a BPM tool suite, it is possible to greatly increase the speed of any level of change. It is this ability to deliver fast change that allows optimization – the change can be designed and implemented (including applications change) before the business need can change. It is this ability that

supports continuous improvement and thus sustained optimization. This environment is the embodiment of the Lean concepts and allows the principles of the Lean doctrine to be applied in an effective manner. In providing this foundation, the BPM environment delivers the models and information on the business, the rules, the performance, the applications and the data flow that allows it to be properly applied. This thus provides the context for Lean use and through simulation, an immediate evaluation of the benefits of any proposed change.

Similarly, this environment provides the framework for Six Sigma use. It provides a complete view of the activities being measured, a way to measure flow and performance at any activity in the process and the anchor points for Six Sigma statistical measurements. The speed of designing and implementing change allows both Lean and Six Sigma to create improvement that can be implemented in a timely manner and thus provide immediate impact. It is this immediate impact that allows an operation to reach and sustain optimization.

As a result, it is clear that when these disciplines work together, the results are the delivery of the promises of all three.

This may sound simple, but ...

If these concepts are so simple, then why do so many organizations struggle to execute the planned results?

As we have discussed, no one of these disciplines alone has proven to be able to deliver the long term goal of operational optimization. The mix of flexibility and rigor are simply not there in any one of them. This has caused many to question their real value – even though articles on improvement statistics are easy to find. This has many questioning their commitment to any of these disciplines. In a time of limited funding, it is difficult to justify anything when its value is open to debate. This is one reason that many of these disciplines have focused use.

In this paper, we have carried the concept of selecting an improvement discipline one step further and proposed a melding of the three major approaches. For this reason, we believe that the central issue today that companies need to consider in transforming is not discipline which to use, but their ability to mix these disciplines to the create a formal change environment.

This requires overcoming considerable bias by masters of any of these disciplines. It also requires that the company look at what it will take to provide a framework for moving the company forward in a coordinated manner to sustained optimization and an ability to deliver rapid operational modification? Then to increase the chances of success, moving to this type of an operating environment requires management's acceptance and a commitment to properly staff and fund this move.

In the past, this has all been a non-issue. The BPM technology simply would not support what we are proposing. Today, these tools are robust and the situation is greatly improved. Today, this is very possible and even necessary for any company that is serious about building a flexible operation that is ready to continuously change to meet competitive challenges.

Performance Measurement – the proof

Success in most companies is based on perception. Too often there are few predefined measurements that accompany the implementation of a change. Without an ability to accurately determine improvement, success is only an argument away from becoming failure. But, few managers enjoy having their work measured and real improvement is seldom measured following a project to determine real ROI.

But, finding the right thing to measure and the right way to measure it is far from simple. Key performance indicators translate the high level financial goals for revenue and profit into actionable outcomes at the business unit level. These financial measures, while important, do little to suggest to a company how effectively its business operations are performing. They also do little to look at customer satisfaction with service or product and they do little to point to policy or rule problems. But, they do help drive Lean and they do help focus Six Sigma in terms of waste and other performance indicators. So, while important, financial measures are only one of many that can be used. But, almost anything can be measured in a BPM based change environment. If it moves it can be tracked and costs can be built through the process. When a flow stops, the delay can be measured automatically. Problems can be identified real time and action recommended by the BPM process management systems that are generated. The results of these actions can also be measured and the actions improved. So, the question of can something be measured is starting to be replaced with a question of what should be measured and how should it be measured. The key is to reach consensus on what can be measured and how it should be measured. Consensus on the way the results are interpreted should also be reached before the measurement is used to avoid conflict.

However they are determined, performance metrics are challenging to identify and track. But, when designed effectively, metrics cannot be ignored or the organization will fail to deliver planned results.

In reality, this allows management to create a complete understanding of the processes, the operational workflows, the performance of both process and workflows and the actions that can be taken to improve them. But, traditional approaches to operational measurement can now be expanded to include continuous Six Sigma monitoring of activity and consider Lean methods when simulating a change. With this information it is now possible to look differently at how any activity or workflow or process can

change, model the change, simulate the new operation, look at potential performance improvements and then make the change. This also allows management to calculate the cost and impact of any improvement based on real simulation and not simply guesses.

This insures alignment at all levels and provides the foundation for the creation of a well developed operational change plan to accomplish your business objectives. This plan is important in helping set the right priorities among all the departments involved in any process change.

Controlling the company's change program begins by planning the work. The more time spent on the strategic side of the planning process, the easier the tactical projects will be when executing the plan. Focusing on the measures to track your progress along the way is the real key to success.

Summary

BPM, Lean, and Six Sigma are all effective and have been applied in a great many companies. Practitioners have specialized in these disciplines and today many questions which is the better way to address improvement. We believe that all of these disciplines are both valid and needed to create an operating environment that is focused on rapid change. This is the only way to deliver the flexibility needed to respond to competitive pressure, legislation, and the need reach a point of operational optimization.

We believe that it is clear that as significant as results from individual disciplines have been, when these disciplines are combined, the results can be far greater than any one of them alone can deliver.

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