



BPM: The Next Stage for Continuous Process Improvement

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Abstract

Continuous Process Improvement (CPI) programs like Six Sigma and Lean have created over 100 billion dollars in savings and unleashed breakthrough opportunities in businesses and organizations of all sizes and types. But for many reasons, these methodologies have for the most part been implemented independent of enterprise information systems, severely limiting the reach and effectiveness of CPI. But now, Business Process Management (BPM) solutions are uniting the capabilities of process management platforms and CPI methods, enabling organizations to dramatically extend the best practices of CPI across their enterprise and throughout their value chains.

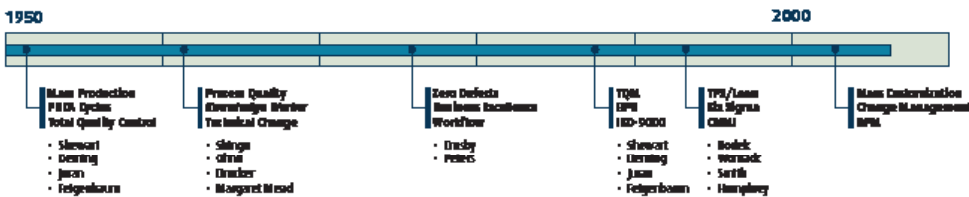
BUSINESS SUCCESS IS PROCESS-CENTRIC

Long before the current wave of competitive pressures, performance challenges, and solutions offerings hit the market, scholars and business leaders recognized the primary forces that affect organizational success. During the past fifty years in particular, researchers, practitioners, and information systems providers have collectively investigated, developed, and subsequently implemented specific methods and tools to control these forces. The evolution of our combined understanding has been marked by numerous breakthroughs in approaches and techniques, and consequentially sharp rises in business productivity and value.

Operating processes drive every area of business — from buying and selling, to delivering products and services, to interacting with customers, suppliers and vendors. Improved business processes generate more profits and give your business a competitive advantage. Inefficient operating processes carve away at your bottom-line.

petitive performance.

- Customer Satisfaction is the result of optimizing and aligning processes to fulfill the customer’s needs, wants, and desires.
- Costs result from the effectiveness of operations



The common foundation for understanding business¹ performance is the process perspective, based on the intuitive notion that what you get is the result of how you work. In other words, the viability of your products and services, and, ultimately, the performance of your overall business, is the direct result and outcome of the many processes at work within and around your enterprise. Improve your processes, and you improve your products, services, and the performance of your overall business.

Process excellence is now widely recognized as the underlying basis for all significant measures of com-

¹ Throughout this paper, “business” is used as a general term of reference for any professional organization, including companies and corporations, non-profit entities, government and educational institutions, utilities, and others.

² Business Process Excellence – Insights and Solutions for Clever Companies, PriceWaterhouseCoopers, Jan 2007.

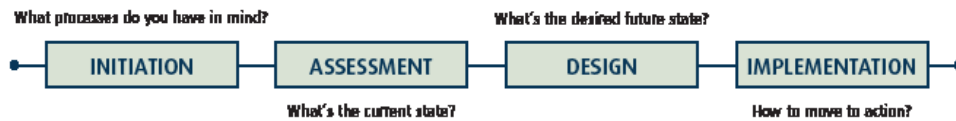
and supplier processes.

- Cycle and Fulfillment Times are the result of the manufacturing and logistics processes.
- Quality is the result of design, development, and execution processes.
- Differentiation is the result of marketing and innovation processes.
- Productivity results from the success of each individual as they perform in their own work processes.

IMPROVING PROCESSES

Businesses and organizations of all types now regularly embrace some type of formal approach to improving their business processes. While every improvement program is tuned to the industry and environment at hand, each approach is based on a common-sense strategy: first select an area for improvement, then assess the current state and conditions next determine the change to a new state, and finally, implement the improvement.

CPI. They apply their CPI methodologies across the enterprise: top-to-bottom, wall-to-wall, and even beyond their own walls – with suppliers and customers. They live and breathe the language and the tools. They directly measure the effectiveness of their activities and go on the record with their results. For example, leading corporations practicing Six Sigma, report returns on investment of five times or greater, with collective results now exceeding \$100 billion in total value.



When an organization implements a program to repeatedly improve processes, it's called Continuous Process Improvement, or CPI. CPI programs like Lean, Six Sigma, and TQM are famous for setting in motion a combination of philosophy, management framework, and supporting tools to evaluate and improve operational processes in an ongoing manner. They programmatically institutionalize the pursuit of improvements in the overall performance of the organization or enterprise. When approached this way, and implemented and managed properly, CPI initiatives can be wildly successful and lead to dramatic increases in the quality of products and services, competitiveness, and the value delivered to customers.

What's at stake? Nothing less than the ability to optimize performance. Sustainable process management demands a customer-centric leadership perspective, continuous measurements of what matters to customers, ongoing monitoring of process performance and executive accountability for improving key processes. Those who keep moving typically double their cost savings and efficiencies. In an era of commoditization and global competition, continuous process improvement is the difference between surviving and thriving.¹

¹ Spanyol, Andrew. Business Process Management: Never Rest. Intelligent Enterprise, May 2006

Because process excellence is a key driver of business performance, organizations with successful process improvement initiatives are zealous in their support for and commitment to

IMPROVEMENT IS ONLY A PART OF MANAGING PROCESSES

Successful as they are, process improvement initiatives and frameworks like Lean and Six Sigma represent only a part of the larger context for managing the processes within a business or organization. In addition to improving individual processes, complete process management requires other actions and capabilities.



The Six Sigma DMAIC process and the Lean/PDCA Deming cycle are effective methods for improving individual processes. As CPI frameworks, they do not provide complete process management. BPM is the complete over-arching system of process definition, alignment, integration and management, as well as the cy-



In focusing on process improvement, CPI practices are only a part of an overall system of comprehensive process management.

Consider the following:

- a) Processes must first exist before they can ever become wasteful or suffer excess variation – and therefore need CPI intervention to be improved. Complete process management requires initial process design, development, and implementation.
- b) Managed processes include all types of processes: people processes, system (as in computer and software system) processes, and

combination or hybrid processes – all along a value stream. It’s not enough to manage or improve only one type or in one functional area.

c) The act of implementing any new or changed process must in itself be well-managed. Improvement initiatives demand effective strategic alignment, governance, and project management, requiring project leadership, teamwork, configuration, and change management.

d) Most important, any effective, performing process must be standardized and managed to specifications – with controls. CPI methodologies like Lean and Six Sigma require such controls, but this part of CPI tends to be under-emphasized.

THE LIMITATIONS OF CPI FRAMEWORKS LIKE SIX SIGMA

For all the power and benefits of problem-solving and process improvement methods and tools, you cannot rely on improvement activities alone for the complete life-cycle management of your business processes. CPI frameworks improve specific processes and

address critical problems, one black-belt project or kaizen event at a time. CPI methods tend to create “atomic units” of optimized sub-processes that then must be integrated and managed within the larger context to improve the entirety of the business or enterprise value stream.

Process improvement frameworks like Six Sigma typically also fall short in managing broad-scale, cross-functional, and cross-organizational processes, and in addressing process challenges when the analysis and solutions require interplay with enterprise information systems. Challenges include:

- Practitioners rarely possess the enterprise information technology and management skills needed to understand and improve single-system processes, interconnected system-to-system processes, or combination human-system processes.
- Systemically insufficient instrumentation of active processes limits the ability of teams to properly identify and characterize problems and define areas for improvement.
- A lack of access to data across the enterprise or throughout a value stream restricts effective process measurements. Practitioners typically spend considerable time and effort collecting data in non-standard and non-repeatable ways.
- Project scope is limited, time is wasted, and error is introduced, because analysis and simulation tools are used off-line and data is entered manually.
- CPI practices are ineffective at controlling processes. Manual methods inhibit the abil-

ity of process teams to sustain performance gains over the long term.

Compounding these limitations, processes are now increasingly becoming more complex. They span functions, enterprises, people, and systems – in some cases, globally. For process improvement methods to provide value in this larger context, they must be able to address these broad challenges.

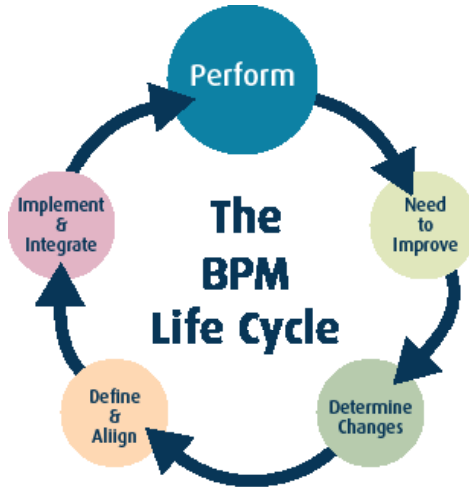
Meanwhile, the enterprise information technology environments have long been too cumbersome and have lacked the capability to respond to the needs of CPI. Furthermore, process improvement teams and information technology groups rarely find common ground for addressing these problems. Solutions within this larger context have now become a business imperative.

THE LIFE CYCLE OF BUSINESS PROCESSES

Within an operating business, all operational processes should be stable and performing at all times. Active processes should be well-defined and continuously managed and perform to specifications. Key performance indicators should be monitored to ensure that processes are working as desired, and that out-of-control or out-of-specification conditions are anticipated and responded to appropriately. This is one of the fundamental tasks of Business Process Management.

But processes are dynamic and tend toward instability and obsolescence. No matter what you're doing today – and how you're doing it – you will likely need to be doing it differently tomorrow.

Once a process needs improvement – or a new



process needs to be developed – the proven methods of CPI should be invoked to help determine the new or better process. The changes may be large or small. They could require the process to be redefined and realigned within the business and value chain. Whatever the change, a modified process must be developed, implemented, and integrated before it can replace the existing process.

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Process change should be conducted with precision and urgency, in order to complete the update, establish the new performing process, and realize the value as quickly as possible. A process change passes through four major phases.

1. Identify the need to improve (The decision to change). Many factors influence the decision to improve a process. These may be internal or external. They may imply a large change or a small one. The decision to change a process should be deliberate, goal-oriented, principle-based, quantifiable, and tightly scoped.

2. Determine the changes (using improvement methods). The time-tested techniques of CPI should be used to determine process improvements. Invoking a Six Sigma DMAIC project or conducting a Lean kaizen event will characterize the problems with the process, determine the process changes, and define the new process and standards of performance. If it's a new process, tools within frameworks like Lean or Design for Six Sigma (DFSS) should be used. Simulations, design of experiments, prototypes and models may also be appropriate.

3. Define and Align. A new or revised process must be defined rigorously. The process models, value-stream maps, system definitions, logic, interfaces, and key performance indicators must all be specified. Further, the process as-defined must be strictly aligned with strategic and operational business goals and drivers, including the Balanced Scorecard.

4. Implement and Integrate. The implementation of a new or revised process can involve many people, organizations, facilities, capital, material, and systems. The human and system elements of the process must be individually optimized and collectively integrated.

THE EMERGING WORLD OF PROCESS-MANAGED BUSINESS

An enterprise applies business process management (BPM) in order to continuously improve its performance, through proactive controls and agile responses to adjusting and optimizing the many active processes which collectively define its business outcomes.

The disciplined framework of Business Process Management is the most advanced and mature framework for effecting total process excellence, representing a culmination of the past fifty years of achievements in methods, tools, and systems. It is a breakthrough in optimizing large-scale complex adaptive systems – like the modern business.

Organizations that apply BPM leverage a framework of prescriptive methods and tools. These include information technologies known as BPM Platforms for modeling, measurement, and control, as well as improvement methodologies like Lean, Six Sigma, and TQM for analysis and understanding that can be applied within the context of the vision and principles of the business. Consider the following quote:

Leveraging the management and improvement schemes of the past, BPM includes sophisticated systems of measurement, analysis and control, as well as the means and methods for quickly adapting to changing market and environmental conditions by modifying processes and procedures across an enterprise and throughout a global value chain.

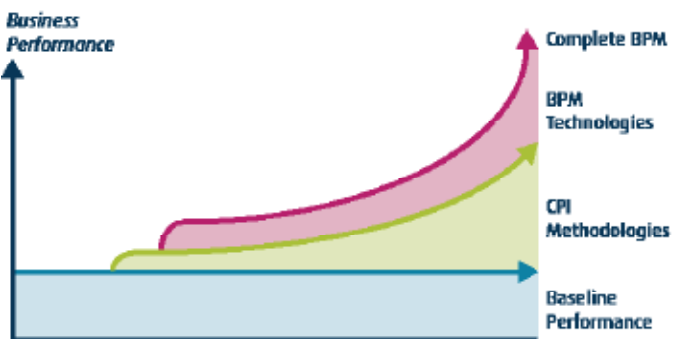
A process-managed enterprise makes agile course corrections, embeds Six Sigma quality and reduces cumulative costs across the value chain. It pursues strategic initiatives with confidence, including mergers, consolidation, alliances, acquisitions, outsourcing and global expansion.

Process management is the only way to achieve these objectives with transparency, management control and accountability. The process-managed enterprise grasps control of business processes and communicates with a universal process language that enables partners to execute on shared vision – to understand each other’s operations in detail, jointly design processes and manage the entire lifecycle of their business improvement initiatives.¹

¹ Smith, Howard, and Peter Fingar, *Business Process Management: The Third Wave*. Meghan-Kiffer Press, 2003.

BPM: THE NEXT STAGE FOR CPI

The next stage for process improvement methodologies is the greater framework of Business Process Management (BPM). Within a BPM environment, individuals and teams working with improvement frameworks like Six Sigma and Lean can better leverage the tools and techniques of their trade to manage



the complete life cycle of all types of business processes.

Together with advanced BPM technology platforms, the CPI methodologies underpin a fully comprehensive business process management framework. Neither the improvement methods nor the BPM technologies are sufficient by themselves, but collectively, they comprise the major support layers of the BPM system, combining to provide exponentially improved business performance.

CPI Methods and Tools represent the necessary methodological foundation: the philosophy, principles, and techniques used to govern how teams systematically and repeatedly improve processes and enable teams to define and sustain stable, performing processes. The CPI framework adopted by an organization must be adapted to fit the overall BPM model for the enter-

prise. The CPI framework adopted by an organization must be adapted to fit the overall BPM model for the enter-

prise. Without it, BPM is free-floating and ungrounded.

The BPM Technology Platform is the complementary set of enterprise information tools and technologies that facilitate application of CPI methods to the business processes at each

phase of their life cycle. BPM technologies help connect CPI tools to processes. Without the BPM platform, CPI tools are insufficient.

During each phase of the BPM life cycle, CPI methods and tools, combined with BPM technology platform capabilities, fulfill the com-

plete needs of the process-managed organization. Some of these are summarized in the following table.

Process Phase	CPI Methods & Tools	BPM Technology Platform
Perform	<ul style="list-style-type: none"> • Define operational procedures • Determine control points • Set operational spec limits • Define key performance metrics • Create andon¹ displays • Define response actions 	<ul style="list-style-type: none"> • Instrument & measure active processes • Provide run charts and other graphical performance indicators • Implement automated responses • Deliver Balanced Scorecards • Provide information drill-down
Decision to Improve	<ul style="list-style-type: none"> • Characterize process issues • Scope process changes • Define improvement project 	<ul style="list-style-type: none"> • Collect detailed process metrics • Support analysis tools • Provide project management tools
Determine Changes	<ul style="list-style-type: none"> • Analyze processes • Simulate or prototype changes • Define improvements 	<ul style="list-style-type: none"> • Model process alternatives • Provide analytical tools • Run simulation and DOE tools
Define & Align	<ul style="list-style-type: none"> • Formally define new processes • Determine customer, corporate, and stakeholder alignments • Update hoshin² plans 	<ul style="list-style-type: none"> • Model processes • Build new process designs • Define points of integration
Implement & Integrate	<ul style="list-style-type: none"> • Develop systems & procedures • Optimize sub-process • Integrate human and system processes • Set new performance criteria 	<ul style="list-style-type: none"> • Implement system processes • Implement workflow processes • Integrate systems and services • Update Balance Scorecards • Implement new process monitors

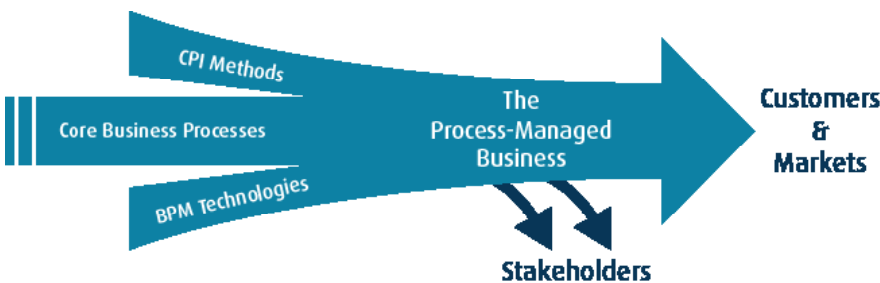
³ Andon is a Lean term. An andon is a signal to alert people of problems at a specific place in a process; a form of visual management. Reference Lean for Dummies, Wiley & Sons, 2007.

⁴ Hoshin is a system of planning, forms, and rules that engages everyone in addressing business at both the strategic and tactical levels.

BPM – THE POWER OF PROCESS TO THE PEOPLE

These enabling forces are aligning with global forces in ways that are creating opportunities never before experienced in business. In the midst of these great movements are the professional practitioners:

- the business people who own, live, and perform the core business processes
- the methodologists, who apply CPI tools to address shortcomings and improve outcomes
- the information systems teams, who create the technology environments that empower the business people and the methodologists



There are the many other stakeholders, who have their own needs and interests. And, ultimately, there are the customers and markets that are better served when these teams align to deliver innovative solutions of unsurpassed value through a process-managed business environment.

This combination of process methodology and process technology, within a BPM framework promises to fuel new successes for everyone.

Consider the effects on each of the different constituencies:

The Process Performers. The individuals within and across organizations who work in the core business processes directly create and contribute to the success or failure of the products and services in their markets. Through BPM, these process performers are increasingly empowered by instantaneous global insight into what’s happening and the application knowledge of what’s possible. This is what enables them to cope with the increasing urgency of global competition, tighter resources, and shrinking margins for error. For them, BPM means more innovation, greater leverage of intellectual capital, more effective operations, and more satisfied customers.

The Methodologists. Companies the world over have built the foundations for success by implementing formalized process improvement initiatives like Lean and Six Sigma. Many

process and quality practitioners have solved problems in product and service quality, time to market, customer satisfaction, profitability, and employee morale. The individuals, teams, organizations, corporations, and institutions have all benefited from these successes, and are ready and willing to take on the new challenges. BPM means they can combine their savvy and discipline with the systems world, access to data and system processes, and optimize processes across the enterprise and throughout the value chain.

The Technologists. The evolution of the tech-

nologies in BPM platforms – including Enterprise Application Integration (EAI), Service Oriented Architectures (SOA), workflow, process modeling, simulation engines, codeless development, and standards like BPMN, BPEL, WSDL – have vaulted the Information Technology community forward. No longer is the IT staff saddled with the frustration of large budgets and lengthy schedules. IT professionals can now assemble new processes and build new businesses more quickly and effectively than ever. And, combined with the methodological underpinnings of CPI, these new processes and businesses will be more effective and robust than ever before.

The Stakeholders. Many stakeholders look in on business from the outside. Analysts, auditors, regulators, shareholders...from their perspective, they’ve been unable to see into a business with sufficient depth or fidelity. BPM capabilities provide the outsiders with the information and knowledge they seek – and the satisfaction they desire – without levying onerous efforts on the performers, methodologists, and technologists – and thereby allowing the resources of the business to be focused on core processes, innovation, and value creation.

The Customer! And why is all this necessary? Because the customer demands value! Customers and markets have decreasing tolerance for waste and defects, for lost time and wasted effort, for products and services that aren’t to their need or liking. BPM is important because it helps the customer – the one who matters most.

ABOUT THE AUTHOR

Bruce D. Williams, Senior Vice President and General Manager, BPM Solutions, Software AG

Mr. Williams provides complete leadership of webMethods BPM Solutions as Vice President and General Manager. Bruce has more than 25 years of professional experience in a broad range of businesses large and small, including training, software, technology and aerospace systems. He has been a scientist, engineer, technical manager, consultant, author, speaker, sales director, executive and entrepreneur.

Previously, Mr. Williams served as President of Savvi International, a business solutions company specializing in business performance improvement through the application of Six Sigma, Lean, and Process Management techniques. He also co-founded the Six Sigma Management Institute (SSMI) and was the executive liaison between SSMI and the University of Phoenix Online during the R&D initiative that migrated six sigma training content into an asynchronous online learning system.

Mr. Williams also co-founded a manufacturing software and solutions company, which he took public and served as its Chief Executive for four years. Before this, he co-developed a successful professional services practice for a major information technology company and worked with leading businesses including Motorola and Honeywell.

Mr. Williams was previously in the aerospace business and was a member of the technical team that developed and launched the Hubble Telescope.

A graduate of the University of Colorado and Johns Hopkins University, Mr. Williams holds a dual Master of Engineering Management and Computer Science. He also has a BS in Physics and Astrophysics from the University of Colorado. He serves on the advisory boards of Executor's Resource, an estate settlement services company, and StudyLog, a biotech information systems company.

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