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The third wave of business-process management promises to make companies more adept at cutting costs, managing change and seizing opportunities.

A New Path To Business Process Management

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October 2002, Issue 12

Walt Disney was a man brimming with big ideas. When asked about the secret of his success, he replied: "Do something so well that people will pay to see you do it again."

Disney certainly had innovation down to a science. The lasting value of animated classics such as *Fantasia*, *Snow White*, and others is testimony to Disney's business acumen and creative genius.

All businesses are looking for secrets that let them create and mesh business processes that are so outstanding that customers will pay to see them again and again. Like Disney, companies aren't lacking in imagination, but unlike The Disney Co. in 1937—which could afford to employ 1,000 animators—companies today can't afford such labor-intensive processes. To create the compelling business processes they so desperately seek, companies want the business-process equivalent of Pixar's computer-animation methods.

Every day, in every company, someone is challenging the belief that business processes—and the various computer systems on which they depend—are cast in stone and impossible to modify without wholesale reengineering and replacement.

To break out of that bind, most companies implement piecemeal solutions to expose, integrate, transform, and connect disjointed applications, information, and processes. Their intentions are good, but only rarely do they achieve long-term, meaningful results—a system not just built to last, but built to adapt. They're completely unaware that anything but piecemeal systems-integration solutions exist. Only a handful have joined the ranks of the early adopters; nevertheless, the third wave of business-process management is inevitable.

To envision it, think of the most complex thing you do in your business. Think about how to describe this process. Write it down. Pick it up and look at it. Can't see everything? Stand back. Too much detail? Zoom in. Something wrong? Reach in and change it.

Using tools that are radically different from traditional IT systems, leading companies in the financial-services, pharmaceutical, and retail sectors are building digital models of their business processes that let them do all of these things. They realize their time is best spent not in writing software, but in executing computer-based simulations of their business—finding faults, correcting them, and then putting those changes directly into live, critical business operations. The third wave doesn't bridge the business-IT divide—it obliterates it.

Economist and former CIO at the Defense Department and Xerox Paul Strassman claims that we're through with technology. From now on, the IT function will be based purely on economics, and the CIO's role is to make money. Technology has to be good enough to be taken for granted. It must be available when you need it, how you need it, cheaply, reliably, and securely. Businesspeople will have to worry about how to use it, not how to manage it.

To use technology and its underlying data effectively, managers will need process-development tools, not application-development tools. To the CIO we say, stabilize the IT environment so that businesspeople can manage processes themselves. If companies want change built in, they must build an agent of change. Take what was good about business-process reengineering—the creativity and insight—but eradicate the pain of discontinuity and new-process introduction.

Just as spreadsheets provide direct manipulation of data, businesspeople need direct manipulation of their business processes. An auto designer doesn't develop requirements for a new car and hand the specs over to the IT department for rendering; it's done on the designer's 3-D workstation. This type of end-to-end control is exactly what businesspeople need to build a process-managed enterprise. But that's not what they

have today.

A framework for change

Real-world processes have a life of their own; they grow, join, morph, shrink, and split, representing the ever-changing face of business. Processes also have a life cycle of change, not only in state (data), but also in structure (capability) and design (intention). For these reasons, companies want adaptable systems.

Much work has already been done to create the tools to accomplish this. The business-process management system (BPMS) is a framework for building adaptable processes. Created by the Business Process Management Initiative, a consortium of software and service vendors, the system includes the business-process modeling language (BPML), a process-designer interface called the business-process modeling notation (BPMN), and a simulator that can be used to "flight test" new process designs.

BPML is an open XML language specification, and systems that exploit it are available now. BPM doesn't speed up application development; it obviates the need for it. But don't mistake this for a cheap trick, for BPM represents a critical infrastructure that builds upon existing scalable, fault-tolerant, data-management, and transaction-processing systems.

Without its mathematical foundation, BPM could be considered just another buzz word or marketing ploy. To make BPM a reality, its underlying business-process language needs to be rich enough to describe the process of hosting a dinner party, yet also precise enough to describe how computer system "A" talks to computer system "B" while computer system "C" may drop in or out of the conversation, similar to the real world.

When early business technologists dreamed of machines that could do these things, they realized that their data-processing systems must separate data from procedure and process, because only data could be structured in a predictable, reliable, and stable way. We must now apply a similar technique to the representation of business processes, except that these dynamic business activities are not stable or predictable. Because they're so dynamic, it's been difficult to encapsulate them in software. But that's about to change with third-wave business-process management.

The first wave of business-process management, outlined in Fredrick Taylor's theory of management in the 1920s, suggested that processes were implicit in work practices, tucked away in policy manuals. Process management was called "methods and procedures analysis."

The second wave, ushered in over the past decade, suggested that processes could be manually reengineered through a one-time activity. Changes were made, but essentially cast in—if not concrete, then in software, such as the feature-rich but rigid ERP applications. Even with document-centered workflow added to financial-management systems, for example, these applications rarely gave business managers full control over the process life cycle.

The third wave of BPM will let companies and workers create new processes on the fly. Change is the primary design goal. Through agile business processes, value chains can be monitored and continuously improved. The third wave is not business-process reengineering, enterprise application integration, workflow management, or another packaged application—it's the synthesis and extension of all these technologies and techniques into a unified whole. This becomes a new foundation upon which to build an enterprise more in tune with the true nature of business processes and their management.

The essence of this business-process innovation is that a BPMS understands computation, data, distributed communication, procedure, and workflow not as apples and oranges, but as one new business-information type—the business process. Technologists refer to this as an abstract data type. The radical breakthrough is that business processes are directly and immediately executable—no software development needed. The BPMS can directly execute the open, standards-based business-process management language the way that a DBMS executes a SQL query.

It will take time for these capabilities to be assimilated by business, but already companies and their advisers are at work integrating them into next-generation enterprise architectures. A global pharmaceutical company is responding to competition and market uncertainty by implementing a BPM center of excellence to develop standards for enterprise process management. It plans to integrate metrics into its processes to track the progress of BPM. Third-wave BPM systems will evolve over the coming decades. Eventually, all business information, not just static data, will be described in terms of its context, purpose, and role in decision making.

Not just a fad Don't mistake BPM for the next killer app or fashionable new business theory. It's a foundation upon which companies can depend as surely as they depend on database management. BPM is based in mathematics, including Pi-calculus, the mathematics of computation that underpins dynamic, mobile processes.

On today's battleground for economic growth, corporate sustainability, and process innovation, companies like General Electric, with its Digitization Initiative, are chasing the goal of 100% digitization of front-room—not just back-office—business processes. They're seeking hyper-efficiency and the agility needed to make course corrections in days and weeks, rather than months and years.

Companies that recognize the power of business-process management are arming themselves with capabilities for digitally deploying, managing, and representing processes on a scale previously unimaginable. They are discovering that traditional application development is no longer the prerequisite for process implementation since the BPMS can deploy new process designs in one step, directly and immediately—and include any other applications within the process design if required.

What if, at the conclusion of a meeting of the senior executives of Lowes and Whirlpool, the new alliance they'd just formed could be implemented within days? What if Whirlpool's manufacturing, warehousing, delivery, installation, warranty service, and financing processes could be integrated with those of Lowes to sell major appliances together? And what if they could begin doing this the next week? Businesses have wished for such agility for quite some time, but were hampered by inflexible technology and a lack of capabilities to manage their business processes—until now. BPM frees processes from the constraints inherent in today's computer systems, which weren't designed to cope with the realities of rapidly changing business conditions.

It's not just companies that are being reengineered, but reengineering itself. And the goal is no longer constrained to a single company; it crosses the entire value chain. In his 1999 book, *Management Challenges of the 21st Century*, Peter Drucker explains: "Again and again in business history, an unknown company has come from nowhere and in a few short years has overtaken the established leaders without apparently even breathing hard. The reason is always the same: The new company knows and manages the costs of the entire economic [value] chain rather than its costs alone."

The newcomer isn't burdened with adapting and retooling business processes, and can innovate freely. It has the freedom to tailor process changes precisely to the current market conditions. Creating innovative value chains capable of disrupting markets and wresting competitive advantage is, however, only the first step. The cross-company, end-to-end business processes that power the value chain must also be monitored and continuously improved using BPM.

Others glimpsed the implications of this advantage even before the advent of reengineering. Twenty people came together in 1987 at a think tank on chaos theory at the Santa Fe Institute, a multidisciplinary research organization, to talk about the economy as an evolving, complex system. One of those in attendance was W. Brian Arthur, Citibank professor at the Institute, who over the next decade refined the notion that a theory of hierarchy alone doesn't explain the organization of economic networks. It involves many kinds of tangled interactions, associations, and channels of communication that take place on many levels.

Arthur envisioned the global, customer-led economy in which companies now operate as an arena characterized by "dispersed interactions, absence of central control, continual adaptation, perpetual novelty, and out-of-equilibrium dynamics." To meet this challenge, companies must create a networked marketing ecosystem that maintains a "persistent presence," with its customized business processes available to customers anytime, anywhere.

Here are the BPM capabilities companies need to win in the customer-led economy that's devoid of central control:

- A means not only to conceive of new processes, but to actually put them into action. In the third wave, creating a new process is no different from putting a new customer record in a database.
- A systematic method of analyzing the impact of business processes and a more reliable way of immediately deploying new process designs.
- Executable process models that are aligned with business strategy, reflective of the complexity of everyday business activity and amenable to complete analysis, transformation, and mobilization. Processes can be read, written, and transformed by a host of existing technologies.
- A managed portfolio of excellent business processes with change, as well as customer needs, built in. Processes based on Pi-Calculus are like thermo plastic: When you pull them into a new shape, they don't snap back to their original shape.
- The ability to respond to the new, invisible hands of the market—to combine and customize processes. Third-wave processes inherently correlate and collaborate, even if they're designed independently.
- The transformation of organizational change from an imprecise art with unpredictable outcomes into an engineering discipline with measurable outcomes. Third-wave processes embed metrics and can operate on and govern the life cycle of other processes.
- Third-wave processes express management intent directly. High-level, even abstract, enterprise processes are all equally executable.
- An understanding of a company's position in the process economy; expanding markets and increased profits, or declining influence, roadblocks, overcapacity, or failure to respond to market shifts. Simulation is built in.

BPM will provide a pervasive, predictable, and resilient way for companies to innovate and transform themselves. Such processing shouldn't be confused with automation. Digital-process models encoded in the

XML-based BPML may have little to do with computers, but a lot to do with human activities. While process automation can be readily achieved with a raft of existing technologies, BPM has a wider meaning. Processes are the main intellectual property and competitive differentiation manifest in all business activity. Therefore, companies must treat them with a great degree of skill and care.

If this analysis seems extreme, consider the fact that every modern management theory ever devised—reengineering, process innovation, total quality management, Six Sigma, activity-based costing, value-chain analysis, cycle-time reduction, and management by objectives—has emphasized the significance of the business process and its management.

It's now commonly accepted that business processes are what a company does—its core competencies, its know-how, the ultimate "product" it has for sale. Drucker presents two desirable objectives: a systematic and organized method for obtaining information about the context of the business in the economy, its markets, and its pool of competitors; and integration of what were once several procedures—value analysis, process analysis, quality management, and costing—into a single analysis.

The new process-centric methods of BPM can help companies execute Drucker's vision. One may speculate that he'd have rightfully renamed today's IT as DT, for data technology, from which information must still be extracted. Climbing on the shoulders of previous advances in business methodologies, BPM is a realizable next step toward elevating the "I" in IT to its proper status. Welcome to the next 50 years of IT.

The 90-Day Plan

The third wave of business-process management is new. There can be no standard approach to adopting it, since it's not a new killer app or a fashionable new management theory. The emphasis for the first three months is on learning and experimentation. Here we present a possible scenario.

First month: From innocence to awareness

Involve business and systems architects in comparing BPM to existing methods and systems, focusing on the new process-modeling and process-deployment techniques. Identify BPM technologies, architectures, and methods. List all existing internal projects that aim to improve processes and their associated IT systems and technical activities. Develop a mental model to compare this piecemeal approach with the continuous approach of BPM. Identify possible targets for pilot projects, noting process domain and related IT systems involved.

Second month: From apprentice to practitioner

Develop an outline for a management perspective on BPM in the context of existing strategies. Brainstorm BPM's organizational implications. Define in more detail BPM's precise relationship to existing technology initiatives, such as enterprise integration and ERP, and to existing management theories, like Six Sigma, activity-based costing, and value-chain analysis. Bring BPM technology into your domain and integrate it with a small core of applications at the heart of your process-improvement activities. Select one business domain for piloting BPM, focusing on a large, complex problem that so far hasn't been solved. Use the test bed to demonstrate the radical nature of the approach to a business sponsor who can understand the potential.

Third month: Epiphany

Use a process model to encode a part of your existing strategy and to develop a process pattern that can be adopted across the company as a test. Identify the reasons others in your company will put forward to show the third-wave approach won't work. Draft a plan that compares the total cost of process ownership as is with that of the BPM approach. Draft a detailed technical comparison between third-wave BPM and existing technologies and approaches. Complete the integration of operational systems for the chosen process domain to the process-management environment. Experiment with the redesign, deployment, execution, operations, and analysis of variant process designs. Understand the trade-offs that BPM requires in order to reap its benefits.

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