BUSINESS PROCESS INNOVATION AND IMPROVEMENT ARE NOW recognized as the paths to huge gains in productivity—something companies are desperately seeking in the current down-turned economy. Unfortunately, our current software architectures and application development methods pose technical hurdles that block the execution of the Business Process Management (BPM) vision—they simply were not designed to take companies beyond where they are today. Undaunted by current limitations, resourceful business and technology thinkers and doers have been busy charting a new path to productivity and pushing the technology envelope by placing business processes, their representation, and surrounding software architecture on center stage in the world of information technology.

What led to this new thinking and approach to business automation? The great benefit of last decade’s ERP packages was supposed to be their integration—everything the business needs, all in one place. But with the advent of the business Internet and today’s competi-
tive pressures, companies need to extend business processes electronically to customers, trading partners, and suppliers (indeed, to other disparate internal application packages such as CRM and SCM). It did not take long to become evident that ERP and other monolithic systems were not up to the task. Fortunately, rather than discarding existing packaged applications and starting over from scratch, it turns out that these systems are valuable for both internal and external process-based systems. If their functionality can be tapped and encapsulated as software components that can contribute to new or radically improved business processes, then companies can pick and choose which components to use. Companies can even mix and match them with components from third parties to create new, “best-of-breed” applications to compete in the current economy and beyond.

As packaged applications are tapped to contribute to new business processes, the resulting components become more finely grained and independent. This approach of decomposing and transforming monolithic application functionality to serve new business processes creates the need for a new category of software, the Business Process Management System (BPMS). The BPMS is a single, unified modeling, integration, and execution environment that can be applied to the implementation of literally any business process. It brings together legacy integration with next-generation business process collaboration, joining these two worlds with business process automation, as shown in Figure 1. The BPMS can be thought of as an “engine for processes.”

The BPMS provides the mechanisms to stitch application components together to automate and share strategic and operational business processes, in a manageable and flexible way. By comparison, in the way that the Relational Database Management System (RDBMS) enables the sharing of business data among applications and companies (using a common language known as SQL), the Business Process Management (BPM) is rapidly becoming the business platform of choice for Global 2000 organizations, and the BPMS is its technology engine.

The integration of best-of-breed components into business processes begins with an explicit, top-down specification of what they are supposed to do together (a process model) rather than a hidden, inflexible, technical specification of a system interface. But that’s not all. Other key and compelling advantages derived from deploying a BPMS to manage business processes include:

- Application environments can be bridged, allowing them to share descriptions of end-to-end business processes—replacing the need for further integration at the application or data level with integration at the business-process level
- Human activity and workflow can be incorporated across the composite, process-centric application

**Figure 1.**

The Business Process Management System
Table 1. From monolithic to component-based to process-based systems

<table>
<thead>
<tr>
<th>SYSTEM EVOLUTION</th>
<th>CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base level: Monolithic legacy systems; Better than nothing, but modern process systems are right now considerably in advance of this base level</td>
<td>Separate process manager</td>
</tr>
<tr>
<td></td>
<td>Monolithic legacy system</td>
</tr>
<tr>
<td></td>
<td>Granularity at level of applications</td>
</tr>
<tr>
<td></td>
<td>Inflexible and coarse-grained activities only</td>
</tr>
<tr>
<td>Step 1</td>
<td>Business components</td>
</tr>
<tr>
<td>Components easy to call; Many products calling themselves process management are at this level of maturity</td>
<td>Interfaces for component activation</td>
</tr>
<tr>
<td></td>
<td>Granularity aligned with process activities</td>
</tr>
<tr>
<td></td>
<td>Process-driven approach</td>
</tr>
<tr>
<td></td>
<td>Components ingrain some process states</td>
</tr>
<tr>
<td>Step 2</td>
<td>Any-sequence, any-time operations</td>
</tr>
<tr>
<td>Fully modeless components; The best process managers are at this level of maturity</td>
<td>Additional component complexity</td>
</tr>
<tr>
<td></td>
<td>Changes in process greatly simplified</td>
</tr>
<tr>
<td></td>
<td>Easy to re-arrange activities in any sequence</td>
</tr>
<tr>
<td>Step 3</td>
<td>Components work seamlessly with the process manager</td>
</tr>
<tr>
<td>Process engine integrated at component level; This is the domain of vendors who are creating new approaches to the management of business processes</td>
<td>Process model is inherent to all components and component design</td>
</tr>
<tr>
<td></td>
<td>All components modeless</td>
</tr>
<tr>
<td></td>
<td>Most processes managed by process virtual machine</td>
</tr>
<tr>
<td></td>
<td>Process manager integral to business system</td>
</tr>
<tr>
<td></td>
<td>Operation invocation native to process modeling language</td>
</tr>
<tr>
<td></td>
<td>Application processes can be projected into the process-management domain</td>
</tr>
<tr>
<td></td>
<td>Persisted process data end-to-end available to application layer</td>
</tr>
</tbody>
</table>

- Software components can be orchestrated in new ways
- A business process description can be customized for specific customers or partners
- An integrated user interface can be provided through a single portal that, in turn, provides legacy integration
- The overall operation and optimization of a business process can be monitored, optimized, and analyzed
- New applications can be written that interact with and transform the whole process, from end to end, without requiring software engineering.

The evolution of business systems from monolithic application packages to component-based and finally to process-based systems has been under way for a number of years. The BPMS culminates the ascension of business processes as the locus of activity in developing agile information systems, as shown in Table 1.

In the new process-centric world of IT, software architecture aligns more readily with business activity—even across business boundaries. Processes can be expressed in any level of detail right down to fine-grained computational components, making it much easier for businesses to modify, redesign, and evolve business processes. Best of all, top-down process design activity can be driven directly by organizational objectives such as time, cost, and best practices.

**Business Process Integration, Automation, and Management**

Business process integration (BPI) focuses upon the set of activities that must be completed in order to satisfy a business request. Whereas enterprise application integration (EAI) solutions have typically supported discrete application events, BPI handles extended activity sequences, long-lived processes, compensating transactions, failures and cancellations driven by business requirements, or conditions outside the con-
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Figure 2.

Process-aware applications are built on Process Servers—they can span systems, processes, enterprises, and channels—and transact with, analyze, and transform business processes.

Getting There: The Onslaught of Hype

Already a variety of software vendors have staked a claim in the process management space: It seems everyone is suddenly process-centric. Over the last 18 months, as the benefits of business-process management have become clear, vendors in many different categories have begun to stress the process-management capabilities of their solutions. Process-management technology is part of a continuum, yet technical approaches vary enormously. Companies can expect to see process-management products of all shapes and sizes, ranging from workgroup products to departmental solutions to enterprise-scale platforms.

Such products are constrained by the heritage of their vendor’s technology. For example, a workflow product evolving toward process management will provide a different set of capabilities than an application server evolving into a process server. For this reason, comparisons among current process-oriented products are difficult, even meaningless. Companies must exercise extreme due diligence in the search for comprehensive solutions, separating out the pretenders from the real competitors. Companies should look for the following trends as diverse software vendors try to climb the food chain to process management (see also www.fairdene.com/processes/vendors.html):

- Enhanced Enterprise Application Integration (EAI): EAI products that include process design, optimization, and analysis tools to assist in the deployment of the EAI solution
- BPM Middleware: process or workflow engines added to or integrated with EAI, application servers, and other middleware solutions
- Enhanced workflow: modern workflow products that extend the collaboration paradigm into the domain of enter-

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prise integration by integrating middle-
ware and transaction processing capability
- New process managers: sophis-
ticated and adaptive software prod-
cts that connect to and direct the
operations of existing elements of
the IT infrastructure, often position-
ing them in an enterprise supervi-
sory role.
- Process development tools: application-development
environments that use rules or
processes to create applica-
tions, rapidly
- Process engineering tools: discovery, design, optimization,
analysis, and simulation tools
- Business Process Management Systems: intended to
play a role similar to that of a
database management system,
a comprehensive platform for the de-
sign, deployment, and direct execution
of enterprise business processes.

Because of their lineage, few pro-
cess management products provide a
complete solution and those that
claim to do so often rely on alliances
or acquisitions of technologies that do
not necessarily work together system-
ically or naturally. As with other IT
solutions, such products and product
suites vary in functionality, scale, reli-
ability, and adherence to standards.
In lieu of a complete solution, compa-
nies will rely on systems integrators
and IT architects with the specialized
knowledge and experience needed to
combine best-of-breed components
and process engineering methods to
assist them in migrating to a process-
centric architecture.

Many Global 2000 companies are
deploying BPM point solutions or in-
dividual layers in the BPM stack.
Many are finding it necessary to de-
ploy EAI, some use workflow exten-
sively, a few are piloting departmen-
tal process managers, most use exist-
ing business process reengineering
(BPR) tools, and many have em-
ployed rule-based development to
speed application delivery. It’s a com-
plex picture. Today’s application
stack is complex and the BPM layer is
only part of the end-to-end process
solution. A well thought-out, process-
centric architecture, developed with
an experienced systems architect—a
guide who has gone before—will al-
low companies to plug in various
point solutions today, and migrate
more smoothly to comprehensive sol-
lutions tomorrow.

From Organizational Change
to Technological Implementation
Putting all the pieces together against
the backdrop of existing and disparate
IT systems is taxing, even for the
best systems architects. The BPMS
offers a radical simplification. Soon,
the business vision of business-
process management will become
a technological capability powered
by comprehensive business process
management systems. Furthermore,
the primary driver for business pro-
cess-management systems is eco-
nomic, not technological, ensuring
mainstream adoption. Sharehold-
ers expect companies to reach new
heights in productivity, especially in
the current down-turned, more
fiercely competitive marketplace.
Companies are under pressure to
perform better and faster, to do
more with less, and to be super-
pleasing to customers. This means
changes the way companies man-
age their business processes so they
can innovate, collaborate with trad-
ing partners, and bring compelling
new value to customers.

The key to greater productivity is-
’t just speeding up what a company
already does; it’s automating com-
pletely new activities or radically
streamlining existing processes that
can yield new gains. To strive for
such lofty goals requires a change in
kind in business automation. That
change in kind centers on business-
process management so that
companies will have the
agility they need to face an
uncertain future. Business
processes of higher value
and strategic importance
tend to be the most com-
plex and dynamic processes.
Such processes are difficult
to coordinate across multiple
partners and must rely upon
continual process improve-
ment to sustain competitive advantage.

Shaped by today’s intense com-
petitive pressure, the company of the
future will need to be the master of
business-process management. It
will harness business-process man-
gement systems to translate busi-
ness vision into technological reality.
Rather than a layer in an already
complex application stack, process
management will be a capability de-
ivered by the BPMS and available to
all applications, business units, and
partners. Now is the time to embrace
process-centric technology and un-
lock the potential for real productivi-
ty gains of the magnitude needed to
compete in the future.

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Business Process Management: The
Third Wave (mkpress.com).