



*Changing Business for
the Better:*
A Practical Guide to BPM
**And an Introduction to Business
Process Management Solutions**

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Contents

- **The Quest for Business Effectiveness**
Is BPM the right answer to your company's need for increasing efficiency, profits, responsiveness and corporate responsibility? You need the right information now to make good recommendations.

- **Why the Time is Right for BPM**
BPM solutions not only allow you to automate processes—virtually everything from customer returns to financial compliance—to help make them more efficient and help you reduce costs and expenses, but BPM solutions also provide visibility into your business to help you capitalize on market opportunities.

- **Is BPM for Business or IT?**
The most important thing to help BPM succeed in your organization is to understand that BPM is a collaboration of business and IT. Both parties need to be involved in evaluating, selecting, and implementing a BPM solution.

- **Making the Right Choice**
During the evaluation process, it's important to separate BPM products that provide dynamic, real-time process monitoring and management capabilities from solutions that simply provide business modeling capabilities to automate processes.

- **Business Criteria for BPM Selection**
The top business criteria to evaluate when looking at BPM solutions.

- **Technology Criteria for BPM Selection**
The key BPM criteria that could make a big difference on the IT side.

- **Using IBM's BPM Solution to Survive and Prosper**
With the right information, surviving the BPM selection process is easy. Taking a closer look at IBM Process Integration solutions highlights the types of tools that organizations can use to help maximize the benefits of BPM.

Executive Summary

Many of today's business process owners are struggling to eliminate manual paper based-processes and reinvent faster, more efficient business workflows to help automate and streamline everyday tasks. That's why IBM has sponsored this brief handbook for business and technology managers who want to learn more about business process management (BPM) solutions.

While trying to understand any new technology can be difficult, getting your hands around the differences in BPM solutions can be particularly troubling because so many vendors are bringing point solutions for BPM into the market from very different perspectives—workflow, enterprise application integration, document management, and more. In contrast, IBM offers much more than a point solution. IBM offers a comprehensive process integration suite to help users model, design, assemble, integrate and ultimately manage routine business tasks. This Upside Research white paper provides an overview of the benefits of BPM technologies and identifies the characteristics of BPM solutions that lead to successful BPM process-centric integration projects and are important in helping users maximize business effectiveness.

THE QUEST FOR BUSINESS EFFECTIVENESS

The major messages many employees are hearing today are efficiency, responsiveness, and corporate responsibility. As organizations focus on improving efficiencies and leveraging existing systems, business process management (BPM) is now a top priority for many companies. While the concept is not new, the notion of a “process” is broadening. A business process is typically a set of steps that unites human tasks with technology to make a task flow in an easier, more effective manner. The fact that an airline ticket can be ordered via the Web and then delivered to your e-mail inbox is due to a designed business process. A credit loan application goes from a customer to a bank loan officer for approval through a front-end web browser to the back-end approval process via a well-thought out and choreographed business process.

WHY THE TIME IS RIGHT FOR BPM

Business process management, or BPM, is all about making the processes that are core to your business run better. BPM solutions help enable you to automate processes—virtually everything from customer returns to financial compliance—to help make them more efficient and help you reduce costs and expenses. And, BPM solutions also help you capitalize on market opportunities by providing a window into your business. Companies from most industries have started using BPM because, in short, it works. BPM can have a great impact on how your company responds to market pressures and it can help enable you to proactively tackle new business needs. BPM is also designed to change the economics of managing the business through improved process performance.

BPM has evolved over the past ten years from a number of other technology pre-cursors, including workflow, integration, and process automation. Through this evolution process, BPM has amassed a number of best practices that help enable companies to use a “new” technology that has been road-tested in the past. The combination of these pre-cursor technologies with business-oriented development environments, easy process-building interfaces, and a number of standards to help make it all work with existing IT infrastructures means that now is the right time for BPM—it’s mature enough for enterprise deployment, and important enough that most organizations should be evaluating BPM solutions.

IS BPM FOR BUSINESS OR IT?

A good BPM solution requires two great parts to work together as one. Since BPM solutions cross application and system boundaries, they often need to be sanctioned and implemented

TRUE BPM IS DIFFERENT

To avoid confusion with other technologies available today, let’s take a quick look at how BPM differs:

- **Workflow.** Workflow solutions, which automate the flow of paper through an organization, were generally not designed to support today’s business processes that require continuous process improvement and pro-active management.
- **Enterprise Application Integration (EAI).** EAI products provide a technology-focused middleware layer that enables multiple applications to exchange data or transactions, but they are not typically designed to be managed or modified by business users.
- **Enterprise Content Management (ECM).** ECM solutions help manage and leverage content throughout an organization, but often lack the capabilities needed to create, manage, and monitor business processes on an ongoing basis.
- **Document Management.** Like workflow, document management solutions do a nice job of routing documents that help run the business, but they generally lack the ability to create complex, non-document-related processes.

by the IT organization, while at the same time BPM products are business tools that business managers need to own. So, confusion often arises in companies as to whether business or IT managers should be responsible for driving the selection of a new BPM solution.

In reality, to help make BPM succeed in your organization, the most important element is to understand that it is a collaboration of business and IT, and thus both parties need to be involved in evaluating, selecting, and implementing a BPM solution. IT managers need to understand the business drivers behind the processes, and business managers need to understand the impact the BPM solution may have on the infrastructure. Generally, companies that have successfully deployed BPM solutions are those whose business and IT groups have worked together as a cohesive team.

MAKING THE RIGHT CHOICE

For maximum benefit, Upside Research believes that most organizations should evaluate BPM products from both a business and IT perspective to identify the most appropriate solution. The variety of BPM solutions on the market today is immense, and they represent a wide range of capabilities, adding confusion to the understanding of what a BPM solution is. Upside Research believes that it's important during the evaluation process to distinguish those BPM products that provide dynamic, real-time process monitoring and management capabilities from solutions that simply provide business modeling capabilities to automate processes. The latter will is not designed to enable an organization to gain all of the business benefits that BPM promises.

For example, one of the first criteria to think about (from a business perspective) is active process monitoring and management. Here's a scenario that illustrates why it's important:

A computer manufacturer has an issue with "distressed shipments," products that for one reason or another can't be delivered (a wrong address or the customer refusing the order, for instance). The shipping company tries to deliver the shipment several times before it sends the product back to the company, causing the company to incur hundreds of dollars in restocking and reselling costs. Using a BPM solution with active process monitoring, the manufacturer's customer service representative is able to intercept the shipment once it becomes distressed, identify alternative opportunities for delivery, and re-route the product to another destination point. Not only does this save the manufacturer the inventory, logistics and refurbishing costs of product returns, but it also gives them control over how distressed shipments are managed.

When done right, as with the example above, BPM solutions can help streamline business processes while saving money. The following two sections outline some of the top business and technical considerations that organizations should look at when considering a true BPM solution.

BUSINESS CRITERIA FOR BPM SELECTION

As with any technology solution, there are a number of different interpretations by software vendors as to the best combination of features to meet business needs. In

this section, Upside Research presents some of the top business criteria to evaluate when looking at BPM solutions. Use this list as a starting point to help ensure that you get the most out of your BPM investment.

1. Active Process Monitoring and Management

Although monitoring comes after you design, develop, and deploy a business process application, we're putting this first because it probably has the greatest impact on your business. The M in BPM is perhaps its most important, because it conveys the importance of effectively managing the processes that run the business. A good BPM solution will provide business managers and process owners with the power to close the loop between monitoring and managing the processes. Critical performance metrics can be identified for a process, and if the process fails to meet the established goals or those goals change, business managers are able to make changes to the process at the process definition level—ideally without having to involve IT—and immediately impact business. Capabilities to look for include:

- **Real-time activity monitoring:** *A BPM solution should have Business Activity Monitoring (BAM) capabilities; the ability to continually monitor process activity in real-time and alert users when changes occur. When the process parameters inevitably change, the business user should be able to make those changes "on the fly" with the solution automatically updating the components that have changed.*
- **End-to-end business view of process performance:** *The most effective BPM solutions should also be able to provide a complete picture of process activity from beginning to end, not merely a few steps in the process. For this to work well, the solution should have the functionality that allows it to sit on top of the existing applications currently running the process. The business dashboard view in IBM® WebSphere® Business Integration (WBI) Monitor is designed to allow users to see the end-to-end view of process performance.*

2. Fast Response to Changing Business Needs—BPM & SOA

One of the greatest concerns for business leaders when they hear about a new technology solving a business problem is the "set-in-stone" scenario. A new application takes months to develop, and then it is released to the business for use. Unfortunately, since the whiteboard discussions six months earlier, the business processes have often changed. Changing the application, however, may take another two months, leaving the business leader with an outdated application and possibly impacting the company's ROI. In the drive for business agility, business-process management is based on the principles of services-oriented architecture (SOA). Both aim for faster response to changing business requirements, including compliance, mergers and acquisitions, and product and service introductions. Services-oriented architecture has become a crucial foundation for BPM, supporting rapid assembly and orchestration of process services into larger, end-to-end processes. This is because businesses need to design flexible processes that are based on services that can be changed later, without being "hard wired" into the code structure of the application, so that it becomes impossible to make changes later.

BPM based on SOA offers an environment that changes the traditional process for altering an application to reflect changed business rules or processes. It places the controls for change management in the hands of the business process owner rather than on IT's shoulders. Through intuitive, visual interfaces, effective BPM environments offer business managers ways to change rules and alter processes without having to drop down to the coding level. The objective is to translate to rapid response rates, and boost the ROI of the solution because it helps ensure that business goals are in line with the BPM solution, regardless of whether those goals change daily or monthly.

When evaluating BPM solutions, look for self-guided features that enable business owners to easily and quickly change processes without having to involve IT. Capabilities to look for include:

- **Business-driven change management:** *Any BPM solution worth its weight will put day-in/day-out change management in the hands of the business user. Why? In order to keep pace with rapidly changing business conditions, the business owner must have the ability to adjust and optimize the process parameters in real-time. Such capabilities typically include graphical interfaces, drag-and-drop process creation, and no-code process building. The alternative, of course, is making a request to your resource-strapped IT group to change the process parameters by writing new code, re-building all the reports and re-deploying the entire process, which might mean waiting days or weeks for the change to take effect.*
- **Decision-making guidance:** *While having insight into process performance is important, the ability to take that information and act on it quickly makes it even more valuable. For processes to be managed effectively, process participants must be guided through the decisions they can make when processes are being executed. This real-time guidance helps empower process participants to make the right decisions at the right time for the right reasons, and enable the BPM solution to manage not only the processes but the participants as well.*

IBM PROVIDES BUILDING BLOCKS FOR SOA

IBM has been developing solutions based on SOA concepts for the past ten years. As one of the earliest proponents of SOA, IBM has built an extensive suite of tools that can help enable organizations to create business processes that are able to respond to the rapidly changing market landscape. IBM WebSphere MQ (formerly "MQSeries®") product provides the foundation for its SOA tools. Among the other building blocks that IBM offers are:

- **WebSphere Process Server:** A business server that is designed to allow users to create and deploy new business processes and synchronize business information in multiple business applications on diverse platforms.
- **WebSphere Business Modeler:** A design drawing and analysis tool that is designed to allow business managers to design and simulate processes.
- **WebSphere Business Monitor:** A business dashboard that is designed to enable users to monitor their business processes to help them make continuous improvements.
- **WebSphere Enterprise Service Bus (ESB):** A business service platform that is designed to enable easy information exchange between applications and/or resources.

In addition to the above tools, IBM offers a Message Broker, Partner Gateway, Integration Developer and Rational® Application Developer to assist organizations in quickly building and deploying complex, cross-enterprise business processes that are built on top of a flexible services-oriented architecture.

3. Capture Best Practices that Drive Continuous Process Improvement

BPM solutions should have the ability to capture all of the relevant information related to critical business processes. This information can then be analyzed and managers can gain valuable insight into what business practices are optimal and what processes need to be fixed. Since the information can quickly be presented to management, BPM provides the ability to continuously and actively modify the process to reflect ever-changing business needs. And, these continuous process improvements help enable the business to cut costs, maximize efficiencies, and drive revenue in ways that are nearly impossible to achieve without this data capture and analysis.

Some of the important features to look for in BPM solutions that help drive continuous process improvement include: process performance reporting that includes a scorecard or similar methodology; business-level alerts that signal when processes fail to meet goals; and quick implementation of new business processes. Capabilities to look for include:

- **Process performance reporting:** *Data delivered in real-time, through easy-to-understand user interfaces such as scorecards or dashboards gives management the ability to clearly see where inefficiencies are occurring within the process. This instant access to process performance metrics gives decision-makers the opportunity to improve those inefficiencies within each process cycle to help optimize process performance.*
- **Business alerts:** *When an event or events within a process fail to meet the minimum criteria established for that process, alerts are sent to notify the business that action needs to be taken. By responding instantly to key events, management can make immediate changes to help get the process back on track. It also gives them insight into why these events are occurring in the first place, providing not only critical short-term information, but also the opportunity for continuous improvement over time.*
- **Quick implementation:** *Enabling continuous process improvement requires that making core changes to a process or implementing a new one does not require legions of programmers and months of development time. A good BPM solution should be quick to implement—less than 90 days—and allow the business team to be driving new organizational efficiencies and demonstrable ROI soon after.*

The keys to a good BPM solution from a business perspective are providing the ability for the business owners to control and change business processes on-the-fly and providing business managers with the tools they need to make informed decisions and changes to existing processes. Finding a BPM solution that includes a comprehensive data store for capturing all relevant process-related information as well as the tools to make process change management easy for business users is critical to a BPM's ultimate success in your organization. But it's also important (even if you're a business manager) to take a closer look at the technology side of the house to round out your criteria for choosing the right BPM solution.

TECHNOLOGY CRITERIA FOR BPM SELECTION

Because a good BPM implementation is a collaboration between IT and business, it's important to understand the technological impact of implementing a BPM solution. When done right, BPM solutions provide a number of advantages to

overburdened IT staffs, helping to make their lives easier while delivering true benefits to the business overall. Some of the key BPM criteria that can make a big difference on the IT side include:

1. No Code Development (Or At Least Limited Code Development)

The more code required to implement or change a BPM solution—some vendors require weeks or months of Java™ or C# programming time—the less flexible your BPM solution will probably be over the long term. By definition, the optimum BPM solution is one that allows changes to be made easily, often, and in real-time, without having to recompile code. This agility is a key component for any IT evaluation of BPM.

Look for BPM products that do not require long development times that are typically associated with traditional enterprise applications. Make sure the BPM solution also offers the ability to make non-coded changes at the process level, both for the initial process development and subsequent modifications. Features to look for include:

- **Data-driven architecture:** *At the heart of an efficient BPM solution is a standard data store that captures the myriad of data associated with business processes. The data store makes it easy to define, capture, and monitor process performance and make changes based on business-driven metrics. The data-driven nature of BPM also helps enables a higher level of process management than other types of solutions because it provides a greater level of flexibility in changing running processes—changes are defined at the business and data level rather than at the code level, freeing IT resources from timely custom coding.*
- **Model-driven performance management:** *One challenge that BPM solutions have is ensuring consistent activity monitoring and performance management as business managers or administrators make ongoing changes to the underlying process models. Thus, to enable dynamic process change without continually using developers requires that real-time performance management and analytics capabilities should be separated from the frequent changes taking place to the process details. One method to do this is by using models to automate complex event correlations, making sure to include both external events as well as internal. This allows for changes in the middle of the process without breaking the reporting structure. Another approach is to monitor complex events within the process and correlate them directly to in-flight tasks. This is often called Business Activity Monitoring (BAM) and gives an organization insight into operational performance without executing the process itself, which can be very beneficial when an organization needs to identify where the process inefficiencies lie.*

2. Enterprise Capable Technology

BPM is an enterprise-capable technology, which is a considerable advantage for IT. BPM fills the need to fit into existing enterprise IT infrastructures, and therefore many BPM solutions employ standards-based technologies to help provide easier integration with existing systems. The obvious benefit to IT is that you can leverage your existing systems and resources by utilizing a technology you are familiar with to incorporate the BPM solution into your environment. Another indication of the enterprise nature of BPM is its ability to handle extremely high-volume transactions and the distributed nature of the BPM solution's architecture to enable standard, enterprise-scale insurances such as redundancies, failover, etc. Some BPM

environments also support up to tens of thousands of end users, both internal to, and external from, the four walls of the enterprise, and this scalability is paramount for success.

When evaluating BPM vendors, look for synergies in platform support that match your existing architecture. Look closely at the method for which integration between existing systems is handled. Also, to judge the scalability of a solution, ask vendors to illustrate the tested performance thresholds their environments have sustained, and how customers are testing those limits in actual practice with mission-critical processes. Features to look for include:

- **Standards-based architecture:** *Support for a broad range of enterprise standards helps organizations reduce risk of vendor lock-in, while opening up connectivity with the rest of their ever-changing enterprise IT infrastructure. In general, a BPM solution should support standards such as Java 2 Platform, Enterprise Edition (J2EE), XML, .Net, SQL, W3C and SOAP as well all major application and web servers, databases and operating systems, such as Microsoft® Windows®, AIX, Solaris, WebLogic and IBM WebSphere. And it should also support emerging standards such as BPEL (for process execution), BPMN (for modeling) and Eclipse IDE (as an interface for authors). In other words, the best BPM solution will have an open framework that easily drops into—and connects with—your existing IT infrastructure, now and down the road.*
- **Scalability:** *Unless your processes are very well defined and limited in scope, it's important to consider a BPM solution that is able to scale across the enterprise to support the high-volume transactional processes that are core to your business. This means the solution should be able to handle an increase from 1,000 users to 10,000 users within a process without loss of performance or productivity. And the cost to maintain the solution should not increase significantly or exponentially over time.*
- **Component re-use:** *In many cases, organizations will find that they need to reuse process components, so it's important that a BPM solution provide ways for process owners (and not just IT) to modify integration components. This reusability helps keep overall maintenance costs down and streamlines modifications because IT assistance isn't required every time a change is needed. At an enterprise level this may be a significant consideration in the total cost of ownership.*

3. Optimization by Business Users

BPM focuses on business processes. Therefore, enabling the owners of those business processes to help manage the system is a terrific boost to under-staffed IT departments. BPM solutions often include self-guided interfaces that enable end

NEW STANDARDS

Standards are playing an increasingly important role in BPM. While these standards are still maturing, organizations evaluating BPM products should consider them and evaluate the standards roadmap of the potential BPM solutions they are considering.

- **Business Process Execution Language (BPEL).** BPEL provides a standard language for the definition of business processes and business interaction protocols. BPEL is an important standard that is part of the BPM story; but keep in mind it's only a standard (like SQL in the database world), not a solution. Organizations still need a BPM product to build a solution.
- **Business Process Modeling Notation (BPMN).** BPMN is a modeling notation that provides a way for organizations to define their internal and external processes using a Business Process Diagram. BPMN provides support for generations of executable business processes (BPEL) from the business level notation in BPMN.

users to make business-related changes to the processes without having to run to IT every time changes are required. With a good BPM solution, IT should be able to effectively implement and deploy business processes to the enterprise, and trust that business managers will be able to optimize and change the processes to reflect changes in business metrics and practices.

When looking at BPM solutions, be sure that your business users are comfortable with the interface, and they can easily make changes to processes without having to code or ask IT for help. Look for wizards and tools that guide business users through change management. Features to look for include:

- **Friendly UI:** *There are two elements to delivering a BPM interface that business users may adopt quickly. First, a BPM interface for business users should have an easy-to-understand format, such as a graphical dashboard or scorecard with real-time information on process performance. The second component of a business-friendly BPM solution is providing the ability for people to be able to act on the information presented in the interface. Providing users with options and alternatives for process decision-making helps improve productivity and shorten the cycle.*
- **Access to process rules:** *Another important consideration for optimizing participation by business users is giving them control of the real-time process behavior, so they can adapt the processes to the changing dynamics of the business. This may not only help make the organization highly responsive but may also free up IT resources.*

4. Speed to Market

While many business users are concerned with the ability to quickly modify a process to reflect changes in business direction or practices, one of IT's most critical speed factors

is being equipped with the right tools to bring a solution to market as quickly as possible. Today's BPM solution providers understand this pressure, and therefore many include features that help significantly shrink development cycles, putting live processes in the hands of the users in months or weeks rather than years. In addition to offering highly graphical, intuitive development environments and supporting industry standards for development languages, many BPM solutions include component-based development to help alleviate the need for extensive custom coding. There should be a strong connector technology that helps enable integration with

a variety of external systems or applications, and other shortcuts that are designed to ease integration with existing systems. This should all translate to faster deployment times, which can be a significant benefit to strapped IT departments.

In the evaluation of BPM solutions, compare the development environment with the skill set of your existing team. Make sure the tools will be relatively easy for your developers to use, and determine how easily existing customers are able to handle changes and modifications themselves once initial implementation is complete.

- **Single IDE, multiple views:** *BPM products that feature a consistent design environment across modeling, development, deployment, and management help make it much easier for users to ensure that all system interactions, business rules, workflow and monitoring processes are working together. Look for BPM*

products that have a single, integrated repository that helps make it easy to share and re-use integration components built by IT, such as models and performance data, and give business analysts the capacity to participate directly in process definition.

- **Connectivity to existing architecture:** *BPM solutions do not exist in a vacuum. Look for products that provide access to information through connectors into existing databases and repositories. A solution's ability to integrate quickly is a key factor in deployment considerations since this "pipeline" is the foundation for process use by the business.*

As with the business criteria, the technical criteria highlight the importance of finding a BPM solution that will help you leverage your existing IT resources, both human and machine, as well as empower business users to handle business-level process changes, helping to save time and cycles in IT. BPM should be an enterprise-strength solution, and it is important to "kick the tires" and find out from existing customers how they are stretching the limits of the tools to run their businesses.

USING IBM'S BPM SOLUTION TO KEEP PACE WITH BUSINESS CHANGE

This paper highlights some of the more critical aspects of selecting a BPM solution. If you're the go-to person responsible for making recommendations on BPM to your company, we've given you a few things to consider about BPM that will help you make the right choices. Since no two companies are the same, it is important that you apply your unique situation to the information presented here, and determine the best set of features a BPM solution should have for you.

That said, there are several fundamental characteristics of BPM that are important for any company that wants to leverage BPM to get ahead. A good BPM solution should include:

- Tools for both business and IT users that lets them create processes and make changes in a collaborative, manner.
- Business Activity Monitoring (BAM) and real-time reporting capabilities. These are both critical in helping companies to see the effects of new processes and make immediate changes to impact the business.
- A development environment that helps you implement and iterate rapidly, works well with your existing infrastructure and can help you get to market as quickly as possible. The faster you can move your BPM project from planning to implementation, the sooner you should be able to make measurable changes to your critical business processes. The faster your company starts benefiting from BPM, the faster you should be able to get out of the hot seat into the driver's seat.

IBM is one of the leading vendors providing BPM solutions that are designed to meet these criteria and provide the necessary functionality to integrate with a wide variety of applications. Specifically, the suite of IBM Process Integration solutions includes:

- **IBM WebSphere Business Modeler:** designed to allow business managers to design and simulate business processes. The tool includes "drag and drop" business process modeling, which provides a structured environment that allows easier participation in business process design. Simulation and analysis capabilities allow users to "run" the process with real business constraints,

helping to enable companies to obtain valuable business performance information from their automated processes.

- **IBM WebSphere Integration Developer:** a development tool that supports assembly, debug and deployment of services into process flows. Integration Developer imports business process models produced by WBI Modeler and includes a drag-and-drop tool interface that does not require Java knowledge.
- **IBM WebSphere Process Server:** helps you to create and deploy new business processes, synchronize business information in multiple business applications on diverse platforms and transform message formats en-route between applications.
- **IBM WebSphere Business Monitor:** displays real-time information from a variety of environments to allow decisive business performance management and optimization. It provides the ability to monitor data and events from WebSphere MQ Workflow, WebSphere Business Integration Message Broker, WebSphere Business Integration Collaborations running from WebSphere MQ Workflow and a variety of databases. WebSphere Business Monitor is designed to allow you to monitor work-in-process items and perform corrective actions by reassigning or suspending them. It also feeds real-time data back into process modeling tools to deliver continuous business process improvement.
- **IBM WebSphere MQ Workflow:** supports long-running business process workflows as they interact with systems and people. It automates and tracks business processes in accordance with business design, and provides integration processes with rich support for human interactions. WebSphere MQ Workflow is designed to allow you to bring systems and people into a managed process integration environment for EAI, B2B integrations and BAM.
- **IBM WebSphere Partner Gateway:** designed to enable businesses to extend integration beyond their corporate boundaries by integrating with trading partners to create a community of businesses and allowing the exchange of information and sharing of processes.
- **IBM WebSphere ESB:** provides a way to enable easy information exchange between applications and/or resources. It also provides Web Services connectivity and data transformation.
- **IBM Rational Application Developer:** is an integrated development environment (IDE) that produces SOA Java code for robust transactions to be assembled into processes.

In addition, IBM Process Integration solutions are designed to provide business managers and IT leaders with the tools necessary to work together in collaboration to bring business process management to the organization in a way that will help maximize efficiency gains, eliminate costly process gaps, and contribute to profit increases and greater business responsiveness. The suite of tools is designed to provide the necessary enterprise integration capabilities that are critical to enabling enterprise systems to work together, the flexibility that enables business managers to make necessary process changes in business time, and a closed loop system with critical visibility tools that help ensure continuous process improvement and

maximize business gains. IBM Process Integration solutions are one of the BPM solutions available that are designed to enable organizations to prosper with business process management and make both new and existing technologies work for business needs.

For more information, please visit: www.ibm.com/software/integration

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Upside Research is a research and consulting firm focused on helping clients put application development, Web services, business process management, integration, and enterprise infrastructure challenges in perspective. Upside Research helps organizations find practical ways to achieve their IT goals and profit from the diversity of a changing technology landscape.

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