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*Comparing BPM from  
IBM, Software AG and  
Pegasystems*

*Taking a high-level look at BPM  
solutions from three of the top  
industry players*

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# Executive Summary

Business Process Management (BPM) has become a key focus for many companies, and this high level of interest has withstood the recent economic upheavals pretty well. Indeed, as companies look for ways to escape the economic downturn and quickly restore revenue and profit, the BPM-based opportunity to streamline and optimize business processes while improving business visibility and IT alignment is extremely attractive. More efficient and effective processes will reduce costs and improve customer service, and gaining greater business visibility into process performance offers many possibilities for IT / business collaboration, with business users having closer involvement in defining, changing and measuring business execution.

Software vendors have not been slow to react to this opportunity, and BPM solutions abound from what is still a wide spread of suppliers, although market consolidation is gathering pace. Three suppliers with quite different approaches to BPM are Pegasystems, IBM and Software AG. Pegasystems is a 'pure play' BPM vendor, with its entire business based around its BPM solution. IBM sees BPM, built on its market-leading SOA infrastructure, as a powerful driver of business value for its customers, and is bringing its considerable strength to bear on what it sees as a major strategic initiative. Software AG acquired a viable BPM solution when it bought webMethods, and sees it as an important addition to its SOA-based set of offerings. But the difficulty for many senior managers is that BPM can seem quite a complex area, with vendor presentations quickly dropping down into long and confusing lists of detailed technology arguments and functional checklists. What many managers are looking for is sufficient information on the different vendor approaches to be able to get a feel for at least a priority list of potential suppliers. This assessment tries to satisfy this need, taking a high level look at the BPM functionality offered by each of these players and drawing out some of the main differences.

In the final analysis, a key difference of philosophy and approach emerges throughout the assessment that is likely to strongly influence any BPM purchase decision. Pegasystems has taken the route of focusing on those decision-heavy processes often found in industries like financial services and insurance, and specializes in delivering packaged process solutions for specific process needs. IBM has opted to follow the dual path of providing packaged, industry-focused solutions while at the same time enabling business innovation and transformation across a wider range of enterprise needs. In contrast, Software AG is primarily focused on BPM as a logical extension to its SOA-based middleware offerings. However all three suppliers have also had to contend with the need to support the economic imperatives of today by endeavouring to make sure that business value can be delivered as quickly as possible. The table below provides a high level summary of the comparative strengths of each solution.

	Cost reduction / process effectiveness	Agility	Time to value	Business / IT collaboration and alignment	Breadth of applicability
Pegasystems	■■■■■■■■□□	■■■■■■□□□□	■■■■■■■■■□	■■■■■■■□□□	■■■■■□□□□□
IBM	■■■■■■■■□□	■■■■■■■■□□	■■■■■■■■■□	■■■■■■■■■□	■■■■■■■■■■■
Software AG	■■■■■□□□□□	■■■■■■□□□□	■■■■■■□□□□	■■■■■□□□□□	■■■■□□□□□□

Figure 1: Competitive summary of BPM solutions from Pegasystems, IBM and Software AG

# *Introduction*

In order to make a sensible assessment of the BPM (business process management) solutions from each vendor, it is necessary to first put BPM into context – what is it, and what can it deliver to the business? There have been numerous debates over the last few years about what terms like BPM, BPA (business process automation), BPO (business process optimization) and Workflow actually mean. However, the industry has gravitated towards BPM as the convenient cover-all for referring to solutions designed to improve process execution in all its forms. Newcomers to BPM may find “Appendix A – Intro to BPM” at the end of this document useful. This provides a simple introduction to BPM from the process perspective.

## *Why BPM now?*

Before looking at individual BPM suppliers, it is important to ground the subsequent discussions with a summary of current market needs. In 2009, economic conditions were severe and market confidence was low, resulting in a huge focus on “do more with less” by making best use of current implementations and avoiding new project investment. While 2010 is still viewed with some trepidation, the major difference is that market confidence is increasing. As a result, more and more companies are starting to look for new projects that might give them a jump on competition and enable them to take market share as growth resumes. This is not a step back to the days of massive strategic investment, but rather a loosening of the purse strings for well-justified, tactical initiatives that offer competitive differentiation while also delivering rapid payback and good returns.

Of course, it is worth pointing out that the need to reduce costs and improve customer service by making processes as efficient and effective as possible has absolutely not gone away. However, this prime driver has been augmented this year with two additional, stand out requirements. The first is the need to support a dynamic business environment by making change easier/quicker/cheaper/safer. The anticipation is that as everyone starts to emerge from the bunkers, companies will start fighting hard to restore revenue streams, profitability and market share by being as creative and innovative as possible while simultaneously improving quality of service. This will make business change more critical and more dynamic, and IT systems must support this increased need for change. The organizations that can adapt most quickly to the nascent market upswing will be the ones that recover the fastest from the difficulties of 2009.

The second driver is to improve business and IT collaboration and alignment, enabling the business community to drive more value from IT-supported operations. This relates partially to the need for making change easier, since if the business community can have more direct involvement in making change happen then this will make change faster and more accurate. But it has implications in a number of other areas too. For example, improved collaboration can enable the business community to get much better visibility into business operations, enabling processes to be continuously improved and ensuring a higher degree of compliance to corporate and external policies and demands. Better collaboration can also create a much closer alignment of business strategy and challenges with the IT-based process implementation required to satisfy them.

This is excellent news for BPM suppliers. BPM by its very nature enables greater collaboration between the business and IT worlds, placing the business user in closer control of business operations and how they are executed. This in turn makes change easier and quicker while mitigating some of the associated risk, and at the more general level it provides a means to continually enhance business processes to the point they are best-in-class in terms of cost, efficiency and service quality. Best of all, BPM can deliver these gains at the individual process level, without requiring a full-scale enterprise-wide deployment with its associated investment cost.

## *Assessment approach*

There are two parts to this competitive assessment of BPM solutions from IBM, Pegasystems and Software AG. The first part details the offerings from each supplier, making use of a common frame of reference that enables comparisons to be made more easily. The second stage interprets this information, placing it in the context of the current needs driving BPM investments discussed previously. These needs are combined with

the other critical factors that typically affect purchasing decisions such as time to value and the range of applicability of the chosen solution across the enterprise

## *Taking a look at the BPM offerings*

This section reviews each of the BPM offerings from the three vendors. In order to make sense of the wide range of functionality covered, a frame of reference is needed.

### *BPM offerings – frame of reference*

The elements of this frame of reference will form a backdrop to describing what each vendor offering does in comparison to each other. For this frame of reference to make sense at a business level, it is vital that it relates to today's challenges. As already discussed, BPM is highly relevant to the needs of the marketplace today such as reducing costs, improving agility, increasing efficiency and enhancing business and IT collaboration and alignment to mitigate risk and drive additional business value. Therefore, in order to ensure the assessment is well grounded, the main areas of BPM functionality should be related to these same market needs.

### *Functionality*

One key requirement that remains a constant year-on-year is the need to remove cost and improve service quality by streamlining and automating processes as far as possible. Relevant functionality to support this will be the ability to model the processes at design time, translate this model into an execution implementation and monitor it at runtime to gather the necessary information to close the loop and be able to iteratively improve the processes. During this activity, collaboration support will help to ensure the best possible results by pooling different areas of talent and knowledge. However, the job doesn't stop there. By addressing the user interface needs, for example by providing personalized workspaces or adopting forms-based interfaces, user productivity can be increased and hence more cost can be squeezed out. The ability to use business rules to govern process operations can make it much cheaper and easier to implement modifications, further reducing costs. Document handling ensures that the right information will be available to the end user, and finally event handling offers yet another way to increase automation levels and consequently reduce human involvement and hence cost.

The increased pace of change throws up its own challenges in addition to keeping costs down. These challenges include identifying how to implement the requirements, ensuring service levels are not disrupted, validating the changes to ensure they deliver the correct results and ensuring they can be deployed with minimum training and user confusion. Process modelling combined with a process simulation environment will allow business analysts to experiment with various options before any changes are deployed, mitigating some of the risks associated with any changes. In order to quickly deploy changes once they have been designed, it will be important that the BPM solution has a strong integration story, enabling processes to be designed and changed without consideration as to where or in what environment components will execute. Effective change management will be needed too, including support for governance tools to ensure change is controlled and authorized, dynamic change and versioning support. Given the rising pace of change, it will also be even more important to have comprehensive monitoring and reporting capabilities to close the loop on the change design process and validate the efficacy of the changes. User interface functionality such as forms support will help to make sure the changes fit as closely as possible with end user skills, minimizing training requirements and unintentional service disruption.

Much of the improved collaboration between IT and business communities will come from the extraction of the process specifications into a form where business users can feel comfortable viewing and manipulating them, or from the adoption of customized versions of processes that come pre-packaged with the selected BPM solution. The key here will be to ensure that the environment for viewing and editing the process is business-user friendly. However, process quality will be greatly improved by having the ability for different users to

collaborate on reviewing and approving process specifications. At run-time, executive dashboards and other business activity monitoring support will make it easier for business users to understand how the processes are behaving, while business events support will help to provide business-oriented automation based on the occurrence of pre-defined events. In addition, business rules support will offer an easy and accessible way for business users to influence operations.

Consequently, any assessment of BPM solutions and their ability to meet the challenges of today needs to take these functional areas into account when looking for differentiation between suppliers. However, there are other important factors for consideration in any evaluation, as touched upon earlier. The most critical ones are probably the time it takes for a project to deliver value, and the value-add capabilities of the selected solution that extend its applicability across the enterprise.

### *Time to Value*

On the first of these two, even though business confidence is on the rise there is still an almost fanatical demand for quick payback times for all investments. As a result, an important area to consider when looking at different BPM solutions is how quickly the promised benefits can be realized. One of the most important influencing factors will be ease-of-use, particularly for those tools oriented to business users or end-users. Anything that can reduce the level of skills required will be a benefit in terms of time to value. Another very important factor in rapid deployment will be the level of integration provided to other environments. Every BPM solution will have to interoperate with a wide range of other systems and applications and the speed at which these connections can be made will impact heavily on the time to value. The other big area of interest is in the help offered to reach successful production operations faster. Factors such as the availability of professional services and the provision of industry-related samples and templates will significantly speed delivery.

### *Value-added Capabilities*

The other factor is value-add capabilities; that is, the expansion of what is offered beyond the basic functional requirements of BPM. It is these value-add areas that increase the scope and effectiveness of the BPM solution across the enterprise. One extremely important value-add area extends the BPM concept from focusing on implementing existing activities in BPM terms to a much closer tie to business strategy and goals. The idea is to enable organizations to perform a level of process discovery, where process specifications are deduced from the primary business goals and needs. Typically this might start from the identification of strategic goals and objectives coupled with developing a business model, and then move on through specification of desired KPIs, user forms construction and high level process modelling. This then follows on to process implementation and validation against the business model and objectives. Frequently, this higher-level view of BPM will be linked to another key value-add area; support for closed-loop continuous process improvement, where execution information can be fed directly back into the process design and modelling stage to constantly monitor and improve the quality of process execution. Another area of value-add is the level of support for different forms of BPM. While all solutions will probably claim basic support for all, some may deliver particularly strong support for human-based, document-based or program-based processes. Some BPM solutions may give particular thought to extending support throughout the value chain, while others may be fanatical about adherence to industry standards. And of course, some BPM solutions may offer specific support for high availability/reliability needs.



The table below summarizes the frame of reference that will be used to describe the raw capabilities of each vendor offering.

Functionality	Time to Value	Value-Add
<ul style="list-style-type: none"> <li>•Process modeling</li> <li>•Process implementation</li> <li>•Execution engine</li> <li>•User workstation</li> <li>•Forms</li> <li>•Document management</li> <li>•Executive dashboards</li> <li>•Process monitoring</li> <li>•Business rules</li> <li>•Collaboration</li> <li>•Governance</li> <li>•Integration infrastructure</li> <li>•Business events handling</li> </ul>	<ul style="list-style-type: none"> <li>•Ease of use</li> <li>•Skills requirements</li> <li>•Support for existing investments</li> <li>•Affinity with user application portfolio</li> <li>•Professional services</li> <li>•Methodologies</li> <li>•Samples and templates</li> <li>•Industry support</li> </ul>	<ul style="list-style-type: none"> <li>•Process discovery</li> <li>•KPI handling</li> <li>•Continuous process improvement</li> <li>•Human-based support</li> <li>•Document-based support</li> <li>•Program-based support</li> <li>•Extension across the value chain</li> <li>•Industry standards</li> <li>•Reliability / integrity / availability</li> </ul>

*Figure 2:- Reference framework for outlining vendor BPM offerings*

The three vendor BPM offerings can now be assessed against this framework. The intention is to pull out salient points in each section, rather than to provide an exhaustive, in-depth analysis of each solution. It is expected that prospective users will carry out their own due diligence analysis of the details as part of the RFP process.



## *BPM from Pegasystems*

Pegasystems is one of the few remaining 'pure play' BPM suppliers. Most of the others have either been acquired by larger companies, or have just faded away in the face of increasing competition. But Pegasystems has been going from strength to strength, delivering a 50% increase in license sales in 2009. This was all the more impressive given the difficult market conditions. Right from its inception in 1983, Pegasystems has approached the BPM problem from the business perspective, targeting both offerings and marketing heavily at the business community. In addition, it was one of the first companies to embrace the rules-driven concept, with all its BPM offerings being rules-based. It started off delivering rules-based exception handling solutions, expanding eventually to offer rules-based BPM across the enterprise. Its current flagship offering is the Pegasystems SmartBPM Suite, which is based around its critical core of the PegaRULES Process Commander, PRPC.

### *Pegasystems functionality*

**Process modelling** is carried out in the PegaRULES Process Commander environment. The Pegasystems approach is to try to avoid manual coding wherever possible; instead it advocates working with graphical interfaces and rules provided through a browser-based interface. Note that this is NOT an Eclipse-based environment. A key point according to Pegasystems is that the one tool is used to model, design, test, deploy and monitor a process. Also, Pegasystems offers an extensive list of out of the box processes as templates for customization to speed up the activity. **Execution** of the process is carried out under PRPC control. PRPC captures work feeds for the process, routes them appropriately, monitors activities and delivers responses as required. But the rules-driven nature of Pegasystems functionality also means that rules are always required. Once a new process has been sketched out using Visio, the user now has to start defining the rules that will be used to control the process. This can make new process implementation overly complicated.

The **user interface**, or 'user experience' as Pegasystems calls it, is built up using an Ajax-based portal environment together with a combination of flexibly guided scripts and a built-in HTML editor. Rules are an integral part of the UI design process. **Document management** is also supported, with the ability to work with file attachments such as those produced by Microsoft Office, emails and scanned documents. Documents are versioned, routed and destroyed as required. Authorised users can also use the UI to view case correspondence and document trails.

**Processes monitoring** can be carried out from the design environment, but it is also possible to build bottleneck reporting as well as a wide range of historical processing analysis. The performance information is collected and then the report-generation wizard can be used to build the desired reports. There is also a level of goals tracking to keep an eye on critical measures such as KPIs. On the **business rules** side, Pegasystems naturally has a strong story since its solutions are all rules-based. PRPC includes its own business rules and inference engine, and also supplies a wide range of out of the box sample rule sets. The SmartBPM Suite includes the Pegasystems PegaRULES Process Analyzer, which offers a range of OLAP-style analysis of real time and historical performance data. This product is closely related to the PegaRULES Process Simulator, which provides the simulation environment to assess the impacts of process and rules changes. The two together offer a range of **process analysis** opportunities.

The unified environment provided by PRPC for process modelling, design, test, deployment and monitoring helps to provide a forum for some **collaboration** between business analysts and technical staff. However, the prime source of improved IT/business collaboration and alignment comes from the rules-based design. For decision-intensive processes, business users can use the business-friendly rules interface to change the way decisions are taken in process execution with little need for technical skills. Also, the wide range of pre-packaged process and rules templates significantly helps to improve the IT / business linkage.

The most useful measure provided by Pegasystems for **governance** is actually not any of its product functionality, but rather one of its pre-packaged solution frameworks. The Pegasystems Control and

Compliance Solution Framework provides process and rules templates for managing the internal process for reviewing corporate controls and tracking exceptions.

While Pegasystems does not have a background as a supplier of **integration infrastructure**, the implementation of the SmartBPM Suite has been done entirely on a modern, SOA architecture. Everything from database calls all the way up to the user interface has been built as a flexible SOA-style service layer, with connectivity to other environments through standard mechanisms like JDBC, JCA, SOAP, .NET, JMS and MQ. However Pegasystems does not put much focus on providing direct integration with major application packages, but instead relies on these connections being made by other parts of the infrastructure.

### *Pegasystems time to value*

There are two major factors about Pegasystems SmartBPM that make major contributions to reducing time to value – one related to initial project delivery and the other to managing subsequent change. On the project delivery side, Pegasystems delivers focused, scenario-based packages of **samples** and **templates** encompassing process flows, data structures, decision tables and user interfaces within its industry-related Frameworks. Subsequent change is made relatively easy through the Pegasystems rules-based approach, presenting business users with **easy-to-understand and change** rules that govern the decisions taken in process execution.

At the more specific level, **ease of use** is enhanced through the provision of a single interface in Pegasystems Process Commander for building, deploying, monitoring and changing processes and rules. This interface is graphical and browser-based, but it is not Eclipse-based. However, Pegasystems does try to stick to standard J2EE rules, and users can freely use conventional form builders, Java editors and other J2EE-related tools. On the **skills requirements** front, the rules-based approach adopted by Pegasystems can prove a two-edged sword. Business rules provide a very natural environment for the business community, requiring little in the way of technical skills. Decisions are reasonably self-explanatory, and are in the language the business user understands. But on the flip side, while rules are great for decision-heavy processes, they do require a level of maturity and skills in rules-based design when trying to build new process flows, particularly if these flows are about more than just decisions.

The Pegasystems approach is heavily geared to offering customizable packages for specific business process needs, such as dispute handling in the financial services industry. But lack of attention to more technical infrastructure needs means that the PegaSystems SmartBPM portfolio can struggle in terms of **supporting existing investments** such as infrastructure and packages. Pegasystems is quick to point out that Pegasystems SmartBPM is based on a service-oriented architecture (SOA), and that the components all run in a J2EE environment. However in terms of connectivity to other environments Pegasystems simply provides generic connectors such as JCA, MQ, JMS and JDBC and then leaves the support of particular environment and application packages to others.

Returning to the Pegasystems Frameworks mentioned briefly above, these packages of rules-based process implementation samples and templates have a strong **industry** flavour, making them very useful for speeding up solution delivery, provided the desired solution matches one of the industry/process combinations offered. The prime market for Pegasystems from its inception has been Financial Services and Insurance, largely due to the heavy presence of decision-based processes. Healthcare is the third featured industry, in particular handling health insurance claims. Within its key industries, Pegasystems offers customizable packages of the required components for processes such as Credit and Debit Card Check, Payments, Fraud / AML Sanctions and many others. For each of these, the package includes process, rule and data structure formats that can be tailored to fit the purchaser's own environment. Outside of the specific industries, the main cross-industry framework offered by Pegasystems is CRM.

Pegasystems also has a **professional services** team to help its customers. However, the prime focus of this team is to help customers install and use the Pegasystems tools and templates, as opposed to working with

the customer to discover the opportunities for better IT / business alignment and move through from the business model to solution. Pegasystems leans heavily on its partner community to achieve this.

### *Pegasystems value add*

The Pegasystems model is to present the user with a pre-packaged but customizable solution to a specific business need. As such, Pegasystems does very little to help with the wider issues of **process discovery**. While Pegasystems' SmartBPM does offer some process modelling support, this does not attempt to deal with the higher level area of identifying new alignment or innovation opportunities based on a model of the business as a whole. However SmartBPM does at least allow **KPIs** to be specified and monitored, although this monitoring is fairly basic, being limited to historic or real-time perspectives and lacking any predictive capabilities. **Continuous process improvement** is based around the Pegaystems PegaRULES Process Analyzer and Process Simulator products, providing support for analyzing real-time and historical data and simulating proposed changes.

Pegasystems SmartBPM supports rules-driven BPM that covers both **human interaction** and **program-to-program** workflow needs. But the suite also includes support for content management which can be a useful aid. This allows documents to be scanned, attached, routed and ultimately destroyed as part of a process flow. This can be very useful when handling exception cases such as disputes, or when dealing with consumer-related activities such as customer support or policy handling. SmartBPM Suite also offers specific **case management** support. This is based around a roles-based interface, supporting case routing, escalation, approval, reassignment and tracking. However SmartBPM is very limited in its support for **document-driven** workflow.

In terms of **industry standards**, Pegasystems is a Java-based solution that tries to take as many open-environment decisions as possible. It supports use of standard Java-based tools, the interface runs in a standard browser environments and it integrates with Microsoft Office tools like Excel as well as other standard office tools like email. However it has not paid much attention to lower level BPM standards such as BPMN and BPEL.

The table below summarizes the salient points regarding the Pegasystems SmartBPM Suite.

BPM from Pegasystems		
Functionality	Time to value	Value add
<ul style="list-style-type: none"> <li>• Rules-driven approach to BPM</li> <li>• Single tool for model, design, test, deploy and monitor</li> <li>• Wide selection of out-of-the-box processes</li> <li>• Java J2EE environment, supporting use of standard Java tools such as form editors</li> </ul>	<ul style="list-style-type: none"> <li>• Range of out-of-the-box solution frameworks containing models, process maps and data structures</li> <li>• Specific solutions for Financial Services, Insurance and Healthcare industries</li> <li>• Rules-based process change</li> <li>• Single tool interface for process activities</li> <li>• Limited support for existing packages and environments</li> </ul>	<ul style="list-style-type: none"> <li>• Weak on document-driven processes</li> <li>• Little B2B support such as partner profile management</li> <li>• Content management capability to enable content to be attached to process flows</li> <li>• Specific case management implementation</li> <li>• Process improvement through use of Process Analyzer and Process Simulator</li> </ul>

*Figure 3:- Key characteristics of Pegaystems BPM support*

## *BPM from IBM*

IBM was initially rather slow to address the growing needs of business process integration and management, although it has a strong pedigree in supplying the middleware that makes integration possible. In the past it acquired a workflow product, which it turned into IBM MQSeries Workflow, but this did not address the full range of BPM needs. However, once it applied the proper strategic focus to BPM as an important way for users to generate sustainable business value through cost efficiency and business agility, things have improved dramatically. Through a combination of internal development and further acquisitions, IBM has now assembled a comprehensive range of BPM functionality, and while it may be argued that integration of these components is not yet complete, such as in the case of the Lombardi acquisition, IBM has made great strides with accommodating previous acquisitions such as ILOG with its business rules management system.

In BPM terms, the positioning of IBM's developed and acquired solutions is that while there is overlap of functionality between the WebSphere, FileNet and Lombardi versions of BPM, each has its own area of speciality which will probably be enough to determine the most appropriate choice. WebSphere Dynamic Process Edition provides high-scale, high-integrity dynamic process integration & automation across the enterprise. The Lombardi acquisition brings simple, collaborative and business-driven capabilities to IBM BPM and provides rapid process implementation, with focus on project team collaboration. FileNet P8 Platform is a content management solution providing BPM facilities that particularly suit document-related processing needs. The combination of the three ensures that IBM can respond to a wide range of BPM scenarios.

IBM has adopted a strong strategic focus for its BPM solution, placing BPM at the centre of its drive to help businesses create sustainable value through process efficiency, process quality, cost control and the flexibility and adaptability to respond quickly to market changes. A clear illustration of this focus in BPM terms is IBM's support for what it calls Dynamic Business Processes – processes that 'increase business agility and optimize costs'. While this may sound like motherhood, IBM has filled in enough of the functional requirements to demonstrate a real commitment to this claim. At a high level, the intention is that Dynamic Business Processes can be optimized through automation capabilities, adapted dynamically to market shifts as they happen, and provide sufficient visibility to support effective decision-making. In IBM terms, this means providing support to make processes

- Explicit – Documented, understood and agreed
- Visible – Measurable and actionable
- Easily changed – Tasks, activities and endpoints are all flexible and dynamically adjustable
- Driven by the business – Process management is contextual, governed and extended to all stakeholders

This focus has dictated a lot of the functionality of the IBM offerings, and is already driving significant customer value in a variety of live production deployments.

### *IBM functionality*

**Process modelling** support is provided in a number of different forms due to IBM's acquisition history in this area. IBM WebSphere Business Modeler delivers a BPMN-based graphical environment for describing process flows and then makes these models available to WebSphere Process Server as BPEL-based process flows. The WebSphere Integration Developer can now be used to manipulate these BPEL flows or to develop ad hoc ones as required. FileNet P8 Designer can also be used for process modelling, storing the process in XPDL format. The reason for this is that FileNet was primarily focused on document-related workflow needs, and for this type of activity XPDL is the most appropriate format. In order to make these two environments work together, IBM has provided import/export capabilities between the two environments. So, a document-related flow could be modelled with FileNet, then exported into WebSphere so that it could become part of a wider process flow. Obviously having two choices for process modelling is not ideal, but it is probably the only way for IBM to look after both the FileNet and WebSphere customer bases fairly. FileNet P8 has comprehensive

support for **document-related workflow**, but for the sake of this assessment, the rest of this section will concentrate on the IBM WebSphere BPM support since this is targeted at the human and system related workflow needs which are generally the ones of most concern to users.

In addition to being able to import models from FileNet, WebSphere Business Modeler can also import and export models from and to other tools, both IBM and third party. BPMN flowcharts can be imported from other tools, while objects can be shared freely between the Modeler and IBM's WebSphere Business Compass environment, discussed in more detail later. Once a model is created, it can be published for **collaboration** with process reviewers or other process specialists for refinement and approval, using WebSphere Business Compass. This support, combined with built-in versioning functionality, makes it possible for process models to be defined, reviewed and updated across the enterprise as needed. Modeler process flows can even be exported to Microsoft Powerpoint for communication and collaboration with business users in a familiar environment. Another useful feature offered by WebSphere Business Modeler is a '**hot deploy**' facility, where an authorized business process specialist can design a process modification and deploy it directly, without the need for developer involvement. Clearly this facility needs to be used with great care, but it is useful for delivering simple changes quickly into production operations, for example when an audit step is added to a particular process in the event of compliance concerns.

WebSphere Business Modeler comes in a number of different flavours, including a basic product package and the WebSphere Business Modeler Advanced packaging that brings in other WebSphere tools to support additional features. This advanced packaging offers process simulation capabilities, where **process simulation and analysis** can be carried out before implementation. **Process implementation and execution** is handled by WebSphere Process Server. Not only does WebSphere Process Server provide the WebSphere Integration Developer tool for building and refining BPEL flows to control workflow, but it also includes support for **forms-driven** human workflow based on its Lotus technology, as well as all the other human workflow functionality such as task lists.

IBM offers a number of options to support end-users of the processes. Business Space is a common, roles-based Web 2.0-style **user interface** unified across the entire BPM portfolio. It is designed for use by business as well as IT users, and provides a common environment as users move between different tasks. Forms can also be displayed using the Lotus Forms Viewer capability, and pieces of the user interface can be extracted and displayed to the user through the use of the Lotus Mashup Centre.

IBM WebSphere Business Monitor offers support for **process monitoring** and **executive dashboards**. Information can be displayed to users in many different forms, using other IBM technologies such as the Lotus Mashup Centre and the Portal Server. The result is that business performance and trending information can be displayed as widgets in a user display, as a web page or on a range of user devices such as the iPhone or Blackberry. It is important to note that IBM's analysis options for this data are **predictive** as well as **real-time** and **historical**. Process performance data gathered by WebSphere Business Monitor can also be exported directly into WebSphere Business Modeler for further analysis. **Business rules** support is provided at a basic level by WebSphere Process Server, but for anything other than simple rules IBM offers the specialist rules engine from its ILOG acquisition. Simple **business events** support is provided by WebSphere Business Monitor, offering a business-level, 'plain English' interface to defining business events that may occur in process execution and what action to take if such an occurrence is detected. For more complex events, such as ones that require correlation across multiple systems, WebSphere Business Events offers comprehensive events definition and processing support.

As far as delivering the **integration infrastructure** required for BPM, IBM is the market leader in service-oriented architecture (SOA) based integration infrastructure, with its WebSphere family of offerings. This has the advantage for BPM users that the integration infrastructure and the BPM tools are all provided under one family through the use of a common Eclipse-based tooling environment.

## *IBM time to value*

The predominant environment for IBM process management is the WebSphere-based BPM solution, although users with processes that are tightly integrated with active content may find the FileNet solution more appropriate. Although each has its own specific **skills requirements**, IBM does offer an Eclipse-based toolset in both environments with plug-ins for the various different requirements.

Considering the **ease of use** question more generally, as touched on previously IBM has delivered a valuable capability called Business Space, which offers many ease of use features and also helps address skills requirements issues by providing a **single, unified, roles-based interface** across the BPM range. The principle behind Business Space is that for each part of the BPM solution, whether it is process modelling, process participation or process monitoring, there is a need for an interface that is tuned to a business-based skill set rather than a technical one. Business analysts need to be able to model processes, end-users will need to be able to see what tasks are awaiting their attention and where completed work should be routed and management will be interested in business performance and KPI status. Business Space is a Web 2.0-style capability for customizing a web browser display by exposing a number of configurable widgets. For example, a process analyst might have a display with one portion handling the process review capabilities offered by WebSphere Business Compass, another used to draw up new processes and simulate them, and a third showing a report on how a newly deployed process is performing. This idea of a common, personalized browser interface, coupled with a wide selection of widgets covering all aspects of IBM's BPM support, all being able to be used by business analysts as well as technical personnel, contributes substantially to improved ease of use, resulting in less need for acquisition of new skills and greater **productivity**, all of which accelerate time to value.

In terms of **supporting existing investments** to speed the BPM implementation as much as possible, the first point to note is that IBM is very strong where processes have a wide range of integration points. The IBM WebSphere middleware is a proven leader in integration, and can provide interoperability with many different environments and applications through the use of an assortment of adapters. IBM's support for specific vendor packages might seem limited when compared to BPM support offered by the package vendor itself, such as in the case of SAP or Oracle, but IBM's general support across a broader range is far more comprehensive.

A major area for IBM in terms of improving time to value in BPM delivery is its WebSphere Content Packs. These are industry-based collections of models, templates, data structures and methodologies that adhere to the relevant industry standards and are designed to cover a wide range of needs for each specific industry. While users may need to tailor the information for their own use, the idea is to give as comprehensive coverage as possible so that users can hit the ground running with minimal changes. Currently available industry packs include the WebSphere Content Packs for Banking, Insurance, Healthcare and Telecommunications. Each content pack contains a range of different elements:

- Capability Models
  - Capability and process maps linking business strategy to process execution
- Process Models
  - Process workflow templates for standard processes in the industry
- Service Models
  - Service interface and schema
- Business Vocabulary
  - Glossary of terms and concepts
- Business Object Models
  - Conceptual data models
- Common components
  - Shared services and utilities
- BPM Solution Scenarios
  - Including UI forms, dashboards, process templates



A powerful advantage for IBM in accelerating time to value is its IBM Global Services systems integration arm. Firstly, this ensures that IBM has plenty of BPM-skilled **professional services** resources that can be made available to help speed up BPM time to value directly, but also the extensive experience it has built up over hundreds of implementation projects has enabled it to produce best practices BPM **methodologies**. IBM has leveraged these skills to offer a combined package of products and services designed to **speed up delivery** for initial BPM projects; this offering is scoped for first projects which are a combination of human-centric and integration workflow BPM projects. Additionally, IBM has fed back its extensive BPM experience into its industry-specific WebSphere Content Packs so the effectiveness of each set of models, processes, data structures and best practices materials is further enhanced.

### *IBM value-add*

The first point to observe is that by combining the WebSphere, FileNet and Lombardi parts of the BPM solution, IBM provides comprehensive BPM support across the full range of process needs, spanning **human, system and document related activities** from the department level to the enterprise. Of these three IBM options, Lombardi in particular offers a **rapid, collaborative approach** that provide a good entry point for companies without much BPM experience. Extending its BPM solution into the value chain, IBM offers **B2B support** in the shape of its WebSphere Partner Gateway, a B2B hub offering EDI support and various adapters. The ability to handle all the different process disciplines and extend beyond the enterprise greatly enhances the overall potential of the IBM BPM solution.

However, IBM goes even further. In 2009 IBM realigned its portfolio, introducing WebSphere Business Compass, and also launched IBM BlueWorks, an open, web-based forum for the global BPM community. This gives it an almost unparalleled level of soup-to-nuts support for BPM-based **business transformation**. BlueWorks provides a free, interactive forum for BPM developers and users to share process-related information and best practices, both at the generic and industry-specific levels. Users can then move to the WebSphere Business Compass environment to carry out process-based **design and innovation**. Business Compass allows organizations to start off by identifying what are the key business priorities and related measurements / KPIs and then use this information to '**discover**' the required process capabilities and pass this on to the process design step. Design is both at the process flow level and the user interface level in terms of forms design and other areas of human interaction. This information is now fed into the WebSphere Business Modeler environment for formal **process modelling**, and the WebSphere Process Server environment for process implementation and execution. To complete the circle, WebSphere Business Monitor can **measure process activity** and KPI performance and feed this information directly back into the Modeler for further continuous process enhancement. Few other BPM vendors offer anything close to this breadth of functionality.

One area deserving special mention in terms of value potential is IBM's focus on **process integrity**. While most vendors offer a basic level of recoverability and availability measures, IBM has put considerable effort into looking at process integrity needs. Due to the varied nature of the processes being handled, there are all sorts of complex integrity challenges to be handled in the BPM area. For example, there may be long-running tasks where state has to be maintained over a lengthy period, issues with handling indeterminate state through the involvement of human activities, and problems with ensuring activities are properly sequenced in recovery scenarios. IBM has focused particularly on the issue of compensatory activities (or spheres in IBM terminology) that represent the IT-based and human tasks needed to ensure a consistent business state. As BPM becomes more prevalent, this issue of maintaining process integrity is likely to rise higher and higher on the list of user requirements. The table below summarizes the relevant points that relate to IBM's BPM solution.



# BPM from IBM

Functionality	Time to value	Value add
<ul style="list-style-type: none"> <li>• Two different BPM environments (WebSphere and FileNet) and Lombardi to be integrated too</li> <li>• Good collaboration support for process design and review</li> <li>• Business Space offers a powerful and flexible user interface for business users</li> <li>• ILOG provides a strong Business Rules Engine</li> <li>• Monitoring and analysis is predictive as well as real-time and historical</li> <li>• WebSphere Business Events can handle complex events</li> <li>• SOA support through the WebSphere family is best in class</li> </ul>	<ul style="list-style-type: none"> <li>• Two skill sets may be required to handle processes covering document-driven and other needs</li> <li>• Business space with its configurable widgets enables business users to be more productive</li> <li>• WebSphere Content Packs provide comprehensive, industry-based content to speed solution delivery</li> <li>• Strong skills and experience in delivering BPM solutions to hundreds of clients</li> <li>• Tried and tested BPM methodologies</li> </ul>	<ul style="list-style-type: none"> <li>• Soup-to-nuts support for BPM-based business transformation and innovation</li> <li>• Tight alignment of business requirements and process implementation</li> <li>• Support for continuous process improvement</li> <li>• Comprehensive coverage for human-related and document-related BPM as well as system-level BPM</li> <li>• Rapid, collaborative, process implementation with the Lombardi solution</li> <li>• IBM BlueWorks delivers a global, collaborative community improving process best practices and designs</li> <li>• Market-leading ability to ensure process integrity is maintained</li> </ul>

Figure 4:- Key characteristics of IBM's BPM support

## *BPM from Software AG / webMethods*

When Software AG acquired webMethods in 2007, it took ownership of a range of BPM offerings. Although Software AG has since brought in some of its own technology, such as its CentraSite registry and repository, the BPM and SOA product line it offers is still primarily based on the webMethods solutions, a fact that is reaffirmed by continued use of the webMethods brand to cover this part of its solution portfolio.

Historically, webMethods started life as a web-based B2B solution, but it quickly expanded into middleware through its acquisition of Active Software and its own development efforts. Integration software grew into program-level orchestration and then into BPM. Recently Software AG has also announced its intention to acquire IDS Scheer, the owner of the well-known ARIS process analysis and modelling tool and the home of a strong professional services organization with process analysis and modelling skills.

### *webMethods functionality*

The prime vehicle for delivering webMethods BPM functionality is the webMethods Business Process Management Suite (BPMS). This suite is augmented by webMethods Optimize for Process, providing business activity monitoring (BAM) capabilities and webMethods Designer, the composite application environment that is used to also develop user interfaces.

WebMethods BPMS offers **process modelling** and **process execution** support all in one suite, with a single, unified, Eclipse-based design tool. Processes can be designed through a drag and drop interface and use of out-of-the-box process definition environments such as swim-lanes, and then simulated based on estimated data or real historical input. The webMethods Designer product, included in the webMethods BPM Suite as part of the Composite Application Framework, is used to develop the **user interface**, which ends up as a Web 2.0-style interface with forms based on Microsoft InfoPath or Adobe forms. Following its acquisition of IDS Scheer, Software AG now also offers the ARIS environment for **high level process analysis and design**. Since webMethods BPMS already supported ARIS previously as an optional environment for building and analysing higher level models of business requirements and operations, this has not required a change in the BPM suite.

However, ARIS is an extremely sophisticated environment and requires a different toolset and level of skills from the webMethods BPM Suite.

**Process monitoring** is carried out using webMethods Optimize for Process, the BAM tool. This provides a wide range of process monitoring and analysis options, together with support for **KPI monitoring, executive dashboards** and **predictive analysis**. There are also versions of webMethods Optimize for other environments, most noticeably SAP. The Optimize product provides **event handling** services too, while **business rules** support is offered through a partnership with Fico (formerly Fair Isaac).

Software AG claims a high degree of IT / business **collaboration** because it delivers its full range of process functionality in the same, common, unified user environment. The idea is that business users can collaborate with technicians in process design and change. However, in reality there is some doubt whether the interface webMethods provides is at a level suitable for business users. There is a 'development' feel to the environment, which is likely to alienate business users to some extent. On a more positive note, webMethods BPMS does link well with the Software AG **governance** support built around its CentraSite repository and registry offering. Using CentraSite, process design and collaboration can be strictly controlled, ensuring that each step through the process lifecycle is authorized and approved, and because all process-related and SOA-related artefacts are stored in the repository, webMethods is able to offer some valuable functionality such as dependencies tracking and alerting.

On the **integration infrastructure** side, webMethods has a good story. This is to be expected since it was originally an integration company. The company has an extensive set of SOA-based offerings that are designed to handle a wide range of integration needs, including a long list of application adapters for various different commercial packages.

### *webMethods time to value*

As mentioned already, the key to the webMethods **ease of use** proposition is that all BPMS functionality is under the same, unified interface, reducing **skills requirements** and making it easier for organizations to get going. The problem this raises, however, is that since one interface does everything, it tends to create an environment that is too technical for the average business user. Also, at the higher modelling level of business requirements mapping and process analysis where Software AG leverages its ARIS acquisition, ease of use is heavily impacted by the formal and highly sophisticated nature of ARIS and its approach to modelling.

In terms of **supporting existing investments**, such as packaged applications, webMethods relies heavily on its heritage SOA-based integration portfolio of offerings, which includes a range of adapters to most major applications such as SAP, Siebel and PeopleSoft. **Professional services** is an area where traditionally webMethods has not been as strong as some of its competitors. While the company boasts a good skills base in SOA-based integration, it lacks higher level skills in process discovery, planning and modelling. However, with the acquisition of IDS Scheer Software AG is bringing in a strong set of modelling resources, albeit specialized in ARIS usage.

**Industry templates and accelerators** has always been a weak spot for webMethods. The company has recently released the Business Services Repository, based around its CentraSite offering. This is a repository for storing all artefacts related to BPM and SOA, but it is also the location for Software AG to supply process templates across a range of industries. However, current offerings are limited. Software AG is trying to correct the problem by embarking on a global, process-oriented community through its ARISalign cloud-based initiative, providing a forum for sharing process knowledge, information and best practices across the enterprise and with other businesses in the community. Software AG hopes that this will provide a route for it to assemble a wider selection of processes and industry templates that it can feed back into its product offerings.

### *webMethods value-add*

Historically webMethods came from the application integration market, and therefore as might be expected its **program-based** process management is the most advanced. In contrast, its **document-based** process support is rudimentary, with little more than the ability to clip documentation to a particular process execution instance. **Human-based** process support is developed with the webMethods Designer component of the BPMS offering and has all the basic functionality such as task lists, routing and escalation/delegation. Integration with standard office environments such as Microsoft Outlook and Lotus Notes is also supported. However functionality in this area is certainly not best of breed.

**Process discovery** is a little confused in Software AG at the moment. While its webMethods BPMS offering includes some basic functionality in this area, such as the ability to specify **KPIs** with targets, there is little in the way of bridging business needs through to capability mappings, behaviour models and process design/modelling. With the ARIS acquisition, Software AG has a better answer to the problem since this is an area where ARIS is stronger, but this is not provided within the webMethods BPMS environment and hence destroys the 'single interface' benefit.

The story is considerably better for webMethods on the **process analysis and optimization** front. ARIS is a strong process analysis tool, but beyond that Software AG offers a powerful BAM (business activity monitoring) tool in the shape of webMethods Optimize for Process. This tool provides comprehensive monitoring and event management capabilities, enabling KPIs and other critical business measurements to be monitored, collected and analysed. The webMethods BAM solution also includes some highly sophisticated predictive capabilities, identifying conditions across multiple systems that precede service degradation so that proactive action can be taken to preserve service levels. The BAM information can also be fed back into the process modelling environment to support **continual process improvement**.

The webMethods platform offers strong **B2B support**, with partner management and coverage for a wide range of data exchange formats. Since the webMethods BPM solution is grounded in its integration infrastructure, this means that it can leverage this B2B support as it implements processes that span corporate boundaries.

The following table provides the main observations related to Software AG / webMethods' BPM approach.

BPM from Software AG		
Functionality	Time to value	Value add
<ul style="list-style-type: none"><li>• Single interface for modeling, developing and executing processes</li><li>• ARIS acquisition provides sophisticated high-level modeling and analysis</li><li>• Monitoring includes predictive as well as historical and real time capabilities</li><li>• Collaborative process review mechanism has good governance support</li><li>• Strong integration story based around webMethods SOA capabilities</li></ul>	<ul style="list-style-type: none"><li>• A single unified environment for modeling, building and running processes</li><li>• IDS Scheer acquisition brings in a large pool of skilled process designers</li><li>• Industry-based or cross-industry support is very weak, with little in the way of sample processes, models or content</li></ul>	<ul style="list-style-type: none"><li>• Only basic BPM support for human-related workflow and no document-driven support</li><li>• The acquisition of ARIS may offer an environment for process discovery</li><li>• Process performance analysis and optimization tools are strong</li><li>• Strong B2B support in the webMethods integration infrastructure</li></ul>

Figure 5: Key characteristics of Software AG/webMethods BPM support

# *Contrasting the different BPM solutions*

## *High level assessment*

The three vendors considered in this report, namely IBM, Pegasystems and Software AG / webMethods, each take a significantly different approach to the whole area of BPM, and this is likely to be a major factor in the purchasing decisions of potential BPM adopters. To a major extent, these different approaches stem from each vendor's roots.

Starting with webMethods, the vendor history is first as a B2B provider and then as an integration / SOA company. BPM was built on top of this integration infrastructure, initially as a way to graphically display program interactions between the various integrated systems. Not surprisingly, therefore, webMethods concentrated on orchestration and workflow needs at the program-to-program level rather than serving human interaction or document-based process needs. Over time it has added some basic human-oriented capabilities to earn the right to play in the BPM market but does very little for document-related workflow needs. The main addition webMethods gained from the Software AG side was CentraSite, the Software AG governance repository and registry. This product has been well integrated with the webMethods BPM solution and enables a strong governance story. But the fact remains that the central design point for webMethods BPM support is program-to-program orchestration.

Pegasystems is almost the complete opposite of webMethods. Pegasystems started off life delivering process-based solutions for specific industry problems, such as handling exceptions processing in the finance industry. This theme has carried through to the present, with the vendor primarily focused on delivering packaged, process-based solutions to address specific business needs. The other factor governing Pegasystems solutions is its dedication to the rules-based approach to BPM. The idea is that as well as offering process packages to address specific process needs, the users will need to customize these solutions and business rules provide the ideal way to achieve this without having to drop down to a technical level. Rules also provide a business-oriented way to modify process deployments as needs change. However this choice of delivering BPM on a rules-based model makes the Pegasystems solution best suited to the decision-heavy processes that are typically found in the Financial Services industry.

As might be expected from a company of IBM's pedigree, its BPM support is pretty comprehensive, with a combination of home-developed and acquired technologies to cover most needs. IBM WebSphere is the leading integration and SOA middleware, providing connectivity to many different environments and applications. As such, it is the ideal platform for a BPM solution. But there is a major difference in the IBM approach; its focus on the full soup-to-nuts task of developing optimal process execution from fundamental business strategy and needs. The IBM support for process discovery enables business users to start from corporate business strategy and goals, and move through KPI specification, user forms creation, process modelling, implementation and measurement. The story does not even stop there, with IBM providing support for a direct feedback loop from real measured results into the process modelling and simulation step.

So at a summary level, the broad differentiation of these three suppliers is

- Software AG / webMethods is a potential candidate for BPM needs where the prime requirement is to orchestrate different program components
- Pegasystems is best suited to focused, bounded opportunities relating to specific process needs, where those processes are decision-heavy
- IBM can address all forms of process needs, and is best suited to organizations who want to establish BPM-based opportunities and benefits across a wide range of business needs

## *The buyer's perspective*

While the above high level positioning offers a rule of thumb in comparing the three different BPM solutions against each other, it is worth stepping down one more level, and considering the offerings from each company in terms of the criteria important to the BPM buyer. As discussed right at the beginning of this paper, current drivers that are relevant to BPM include a desire to continually reduce process costs and increase process effectiveness, to handle change better and to improve business / IT alignment and collaboration. But there are two other factors that must be added to this list to reflect the specific concerns of the BPM investor; the speed of deployment and the range of applicability. Any organisation investing in BPM not only wants to solve the problems being thrown up by the marketplace but also wants to get returns fast, and maximize those returns by at least having the opportunity to leverage the BPM model wherever it makes sense. This matches up nicely to the frame of reference developed earlier with which to assess the different offerings.

### *Increased process effectiveness at reduced cost*

It could be argued that any BPM project has the power to increase the effectiveness of the process and reduce the cost. After all, automating a process that may have previously been paper-based, for instance, or difficult to understand is bound to improve both these measures. But there are differences between the three solutions.

Pegasystems offers out-of-the-box implementations for customization, addressing specific business processes. Clearly this considerably reduces the cost of implementation, and hopefully built-in best practices will help to reduce operating costs too. Rules-based change will also be economical and generally accurate, because of the simplicity of using rules to control operations. However if the user wants to build new processes outside the scope of the Pegasystems pre-packaged list, then the reliance on a rules-based approach can be a real hindrance and makes the whole exercise more expensive. Process measurement and analysis should also help future process optimization, but the lack of predictive capabilities is a drawback.

The IBM WebSphere BPM solution also offers rules-based support, but this is optional rather than forced onto every BPM implementation, offering the user the flexibility to choose when it makes sense. The WebSphere Content Packs offer a significant reduction for users in up-front costs of deploying BPM implementations, providing a pool of process templates, data structure and other artefacts designed to the standards of the industry concerned. This standards adoption should contribute to on-going cost reduction too, since future changes will be easier. The IBM monitoring and analysis tools combined with IBM's closed loop approach to process improvement offer the user the opportunity to continually optimize BPM-supported processes. In addition, IBM has taken care to focus on process integrity as well as execution, reducing the dangers of unplanned outages.

Software AG's webMethods product line suffers from not having enough in the way of prebuilt, industry specific content. However, it does offer an easy to use, single interface for all BPM activities, which helps to keep costs down. It does also provide powerful business activity monitoring capabilities combined with predictive capabilities that offer the opportunity for continual process improvement.

### *Agility*

Primarily, flexibility to change comes from the BPM model itself. However, there are differences between the approaches of each of the vendors. The business rules-driven BPM approach of Pegasystems means change is very easy and quick, but only focuses primarily changing decisions. So, for example, it is very easy for a user to change the level at which a transaction should become entitled to an automatic discount, but changing the way a process works or trying to write a new BPM implementation is much harder. While IBM also offers rules as an option, it does other things to help with agility. Its powerful integration infrastructure makes the task of linking processes to new environments much easier. Software AG leans very much on the single webMethods environment for carrying out all the BPM-related tasks as its claim to providing greater agility, although it can also point to its integration experience.

### *Time to Value*

This is the area PegaSystems considers as its strongest suit. It consciously adopts a narrow focus, delivering a range of specific process solutions for particular needs across the financial services, insurance and healthcare industries in particular, as well as generic areas like CRM. These rules-based, out-of-the-box offerings provide a quick way to start generating returns, with customization being relatively easy due to the rules-driven nature of the PegaSystems solutions. This approach also helps to minimize the effect of the PegaSystems focus on decision-heavy processes, since its pre-packaged solutions are all ideally suited to a rules-based approach. PegaSystems also claims that its single tool environment for building, deploying and monitoring the processes speeds delivery too. However on the downside, PegaSystems does not pay much attention to integration needs on the fringes of the process, such as to major packages, or with partners. As a result, if these are requirements then this will slow the project down considerably. Also, as soon as the user moves outside of the pre-packaged processes offered by PegaSystems, time to value is substantially degraded.

IBM has its WebSphere Content Packs as one way to compete with the PegaSystems packaged approach, offering their own pre-build components for different process and industry needs. Current packs cover Banking, Insurance, Healthcare and Telecommunications needs. However it also has its BlueWorks community project, where users across the world get together to share ideas, best practices and templates. This provides a valuable source of intelligence to speed deployment. In addition, IBM has extensive professional services skills and a growing base of BPM experience to further speed time to value.

The Software AG approach is based around the single interface offered by webMethods and its integration experience. This has resulted in webMethods providing an environment where existing users of webMethods can quickly and easily orchestrate flows between the application components spread across its integration infrastructure. However, outside of this community the lack of pre-built templates significantly impacts time to value.

### *Business / IT alignment and collaboration*

The PegaSystems model of delivering packages for specific business-oriented process problems results in a great deal of confidence over business / IT alignment. Instead of the business community wondering what IT is going to deliver with its new toy, it is clear what business problem is being addressed and how the community can get involved. Providing access to the rules capabilities through standard tools such as Microsoft Office helps to ensure a close connection with the business users, and the ability to model rule changes, simulate them and then implement them simply through a business-oriented interface leads to on-going collaboration and better alignment.

IBM also offers out-of-the-box solutions to real business problems through its WebSphere Content packs, although these tend to be slightly more generalized, trading deployment speed for greater flexibility and opportunity. But in addition, IBM offers an extremely flexible user interface which will be very attractive to the business user, particularly when related to business performance monitoring. The idea of the IBM Business Space approach offering monitoring information as configurable widgets is just what business users want – an executive wants to be able to pull in a display of KPI performance and projected trends into his personal workplace, while a compliance officer might be more interested in a display of out-of-line transactions with their associated details. This greatly assists with IT business alignment and goes some way to removing the IT resource bottleneck by empowering the business user to build it themselves. But perhaps the greatest contributor to improved business / IT alignment for IBM is the soup-to-nuts approach it offers to BPM – as mentioned before, the ability to start from the business model and capabilities combined with corporate strategy and goals, and move from there through KPI definition, user interface, process model, process implementation and process measurement is very powerful.

The Software AG acquisition of IDS Scheer brings with it the highly sophisticated ARIS modelling tool coupled with skilled professional services resources, and this combination should help with improved business alignment. The webMethods business activity monitoring solution also has a strong reputation, and should help



to ensure business users get the information they need to make improvements. But of special interest is the governance support offered by the webMethods solution combined with Software AG's CentraSite repository and registry. This ensures that throughout the process lifecycle the business community can ensure the appropriate approvals and measurements are in place.

### *Range of applicability*

Finally, buyers will be keen to understand how far their BPM benefits might reach. It is here that Pegasystems probably suffers the most. The Pegasystems approach of offering specific, rules-based process packages may be great for time to value, but it holds Pegasystems back in the area of more general applicability. For a start, the insistence on rules-based BPM limits applicability to processes that are largely determined by table-driven business decisions. Beyond that, the Pegasystems tools have clearly been built to satisfy specific process needs and lack the functionality to support flexible development of new processes. There is no document-driven process support, and although users CAN build new process implementations it is hard work.

The BPM solution with the broadest applicability is definitely the one from IBM. This spans all forms of processes, whether human, document or program driven. It supplies a range of ready-made templates and data models for specific industry needs, but also provides the environment for business users to identify new opportunities and follow through to deployment of corresponding new process implementations. And on top of this, it has a constant stream of new process-related input and experience flowing through from the IBM BlueWorks global community and its own professional services engagements.

Software AG suffers in this area from its focus on BPM as program-based orchestration. While webMethods does offer some human-oriented process support, it is fairly basic, and it is clear that the historical focus has been on linking programs and SOA services together. However, webMethods does have a particularly strong story to tell for companies looking to build processes across the value chain and into partners, with excellent B2B support.



# Summary

Business process management (BPM) today spans all aspects of IT-assisted process handling, across the enterprise and beyond. This may involve human interactions with processes, interoperation between different IT programs and components and externally-submitted forms and imaged paper documents. In today's economic environment, focusing on processes is particularly important for three main reasons

- It offers a way to reduce operational costs while improving process effectiveness and customer service
- Dynamic BPM-based processes are much quicker and easier to change, supporting increased agility
- BPM offers business-oriented visibility and control of IT-based operations, improving IT / business alignment and opportunities for collaboration

Most major software vendors have moved to address these BPM needs, but with varying degrees of success. A critical trade-off balances the attractions of picking up a ready-made solution to specific process needs against the advantages of having a more flexible solution that can quickly accommodate new business ideas and innovations. Another relates to whether the BPM solution simply offers a way to handle internal process execution, or whether it is designed to discover process improvement opportunities from a high-level model of the business as a whole.

Pegasystems, IBM and Software AG (through its webMethods acquisition) all offer BPM solutions, each with different characteristics. Buyers will be interested in how each supplier addresses the needs depicted above, how quickly benefits can flow and whether the solution can be leveraged across the enterprise and beyond. The summary table below provides a quick check of the comparative strengths and weaknesses of each offering.

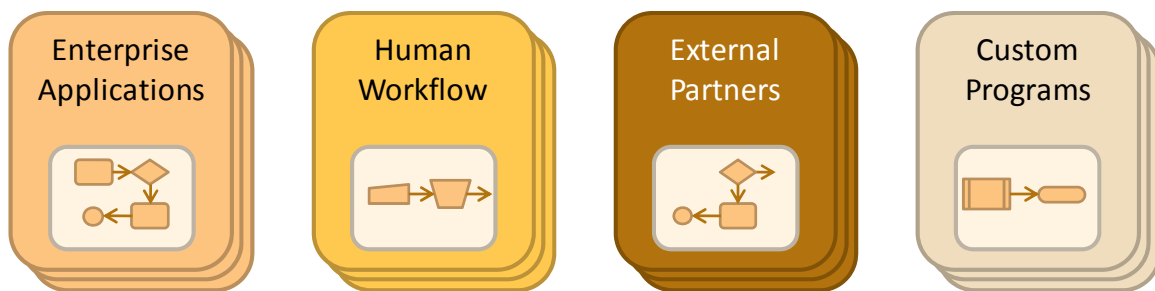
	Cost reduction / process effectiveness	Agility	Time to value	Business / IT collaboration and alignment	Breadth of applicability
Pegasystems	■■■■■■■■□□	■■■■■■□□□□	■■■■■■■■■□	■■■■■■■■□□	■■■■■□□□□□
IBM	■■■■■■■■□□	■■■■■■■■□□	■■■■■■■■□□	■■■■■■■■■□	■■■■■■■■■■■
Software AG	■■■■■□□□□□	■■■■■■□□□□	■■■■■■□□□□	■■■■■□□□□□	■■■■□□□□□□

Figure 6: Competitive summary of BPM solutions from Pegasystems, IBM and Software AG

Organizations interested in adopting BPM solutions from one of these three vendors will need to carry out their own analysis to determine the best option, but as a quick guide, Pegasystems is great if it has a solution package for the process you want to improve, IBM is excellent for a more comprehensive solution that supports both process improvement and business innovation and Software AG is worth considering for program-to-program orchestration needs.

# Appendix A – An introduction to BPM

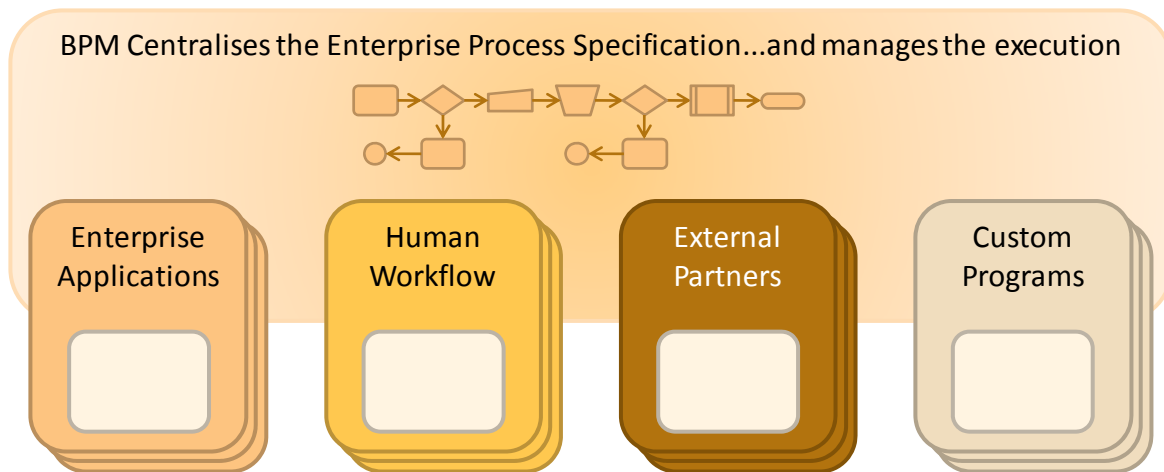
The main issue with processes has always been the same – a business knows what it wants to do, but the required tasks are carried out by often complex interactions between people, IT systems and partners. It is the translation of business need into execution instructions where the problems lie. Individuals may understand pieces of a process, different IT programs and packages may implement others, and partner activities may also fit into the picture. If business was static, this might be manageable, because each party could be clearly instructed on its own piece of the action once, and then for ever more execute based on these instructions. But businesses are dynamic, and are always interested in innovation across the whole process. This dynamism coupled with local innovation results in business processes ending up implemented in disparate pieces across the different process participants, as depicted below.



*Figure 1: Process implementation today sees pieces of process embedded in process participants*

This causes all sorts of problems, due to the fact that the relationship between the desired business process and the implementation is confused and based around different knowledge sets. Visibility into processes and their execution instances is poor, often only being at a very coarse level such as ‘the order was processed successfully’ or ‘the order generated an error’.

BPM solutions enable many opportunities for process improvement, and the core reason is that with BPM the desired process is decoupled from, but put much more clearly in control of, operations. The process specification is extracted from the process participants so that it can be viewed as a whole, and then process execution is governed by this process specification. In human workflow terms, this means that end users are usually presented with clear task lists and work queues, perhaps forms based, with built-in routing rules to move work to the next step, all based on the process specification. In IT terms, where change is often much more dynamic, a process execution engine uses the process specification as a blueprint for the execution of each process instance. This not only ensures processes are executed properly, but also offers the opportunity to monitor the process as it passes from step to step, providing vital information for process improvement and run-time awareness of business performance.



*Figure 2: BPM extracts the process specification and then controls execution accordingly*

This improved visibility of process definitions coupled with the enhanced linkage between specification and execution offers opportunities for all sorts of process improvement areas.

- **Process validation, compliance and governance**

Because the process specification is available in one place, it becomes much easier to confirm that the process is correctly defined and implemented, and also to ensure that changes are controlled and governed properly.

- **Process monitoring and measurement**

The clear linkage between each process step and its corresponding execution makes it possible to monitor and measure process execution at the step level, enabling companies to get immediate and historic information on process performance and effectiveness, and hence overall business performance.

- **Process modelling and optimization**

The combination of the ability to see the overall process definition and to measure process performance provides vital input to subsequent process optimization and reduction of redundancy. Enhancements can be modelled, simulated and assessed to find the best solution.

- **Process change**

Visibility and availability of the process definition in one place makes managing change much more effective. Processes can be modelled, simulated, designed and implemented with less effort.

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