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Research

Comparing BPM from Pegasystems, IBM and TIBCO

Taking a high-level look at BPM solutions from three leading vendors (2011 update)

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Executive Summary

Business Process Management (BPM) has become a key focus for many companies, whether aimed at streamlining and automating critical processes, reducing costs or improving process effectiveness. The ability of BPM to bridge the divide between business communities and the IT systems running business operations makes systems more agile and responsive to changing business needs, improves operational visibility which enables better governance and control, and opens the way to broader and deeper levels of business transformation and innovation.

Software vendors have not been slow to react to this opportunity, and although there has been significant market consolidation over recent years, with smaller, specialist BPM companies being snapped up by some of the major IT suppliers, there are still a number of BPM solutions in the marketplace. Three suppliers with quite different approaches to BPM are Pegasystems, IBM and TIBCO Software. Pegasystems is a 'pure play' BPM vendor, with its entire business based around its BPM solution. IBM has been committed to BPM as a driver of business value since the technology emerged, but this commitment has been greatly reinforced through its positive experiences with thousands of BPM-based global services engagements; as a result, IBM has brought considerable strength to bear on what it sees as a major strategic initiative. TIBCO Software has built a new BPM solution on its Java-based ActiveMatrix application platform, replacing the acquired Staffware iProcess Suite, and is looking to BPM to improve the alignment of the ActiveMatrix platform with business needs. But the difficulty for 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 which 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 process templates to speed project delivery while at the same time enabling additional value to be delivered across a wider range of enterprise needs. TIBCO Software has focused primarily on BPM as a logical extension to its SOA-based middleware offerings that improves its appeal to the business community.

The analysis presented in this report assesses each offering based on the time to value for particular projects, TCO implications, how the solution affects risk and what the broader value potential might be. The table below provides a high level summary of the comparative strengths of each solution.

	Time to value -ve +ve	TCO -ve +ve	Risk -ve +ve	Value potential -ve +ve
Pegasystems	■■■■■■■■■□	■■■■□□□□□□	■■■■■■■■□□	■■■■■□□□□□
IBM	■■■■■■■■□□	■■■■■■■■□□	■■■■■■■■■□	■■■■■■■■■□
TIBCO Software	■■■■■■■□□□	■■■■■■■□□□	■■■■■■□□□□	■■■□□□□□□□

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

In the final analysis, Lustratus sees the TIBCO offering as primarily of interest only to companies that are adopting the TIBCO ActiveMatrix application platform. The Pegasystems solution is worth including on the candidate list as long as the targeted process matches one of its specialized solution packages and is unlikely to change too much. The IBM solution offers the widest and most extensive returns of the three, and is likely to suit most industry needs.

Introduction

This is the third year of Lustratus competitive reports in the BPM (Business Process Management) marketplace, and during this time there has been an increase in understanding and awareness of BPM. However, as in previous reports, this latest BPM competitive study will continue with the same basic approach of first considering what each vendor offers, in both functional and solution terms, and then comparing each set of offerings against a backdrop of buyers' wants and needs.

What is BPM?

Despite increased market maturity, there is still a wide range of definitions for BPM. Perhaps the most fascinating is the current Wikepedia definition:

> ***"Business process management** (BPM) is a holistic management approach focused on aligning all aspects of an organization with the wants and needs of clients. It promotes business effectiveness and efficiency while striving for innovation, flexibility, and integration with technology. BPM attempts to improve processes continuously."*

It would be churlish to suggest that this definition was provided by a BPM vendor, but the first sentence seems to suggest BPM has the power to decide what clients want. This is not the definition that Lustratus will use in this review; BPM may enable organizations to achieve better alignment between business processes and the IT components that execute them, but defining those processes to match the wants and needs of clients is not an action the BPM solution can take. This is the job of the business community. However the remainder of the definition is much closer to the Lustratus view of BPM in the IT world. By aligning IT components with distinct execution steps in the process, together with business-context visibility and management, BPM solutions can indeed enable continuous development of effective, efficient and flexible business process execution.

There remains the question of where some of the related technologies fit in a review of BPM offerings; areas such as Business Analytics, Business Rules, Business Events and Case Management. All of these areas relate to the Lustratus definition of BPM, but in market terms they each represent distinct product solutions. Therefore it is necessary to bound what is covered in this review and what is not. In order to prevent the assessment becoming unmanageably complex, Lustratus will not be including in-depth reviews of ancillary products such as individual Business Rules Engines or Business Events Processors, but it will take support for these areas into account when considering different BPM offerings.

Why BPM now?

Before looking at individual BPM suppliers, it is important to ground the subsequent discussions with a summary of current market needs. Back in the after-shocks of the recession, 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. As market confidence has slowly increased, more and more companies have started to look outward once again, seeking new projects that might give them a jump on competition or access to a new business opportunity. However an important consequence of the turmoil in the last four years is a much heightened focus on compliance and risk; the political ramifications of the recession have resulted in considerable churn in legislation and associated regulatory controls, and corporate executives have been placed under a much greater and more public level of scrutiny.

Against this backdrop, three of the strongest corporate imperatives for 2011 are:

- Improve process efficiency and effectiveness. Continue to drive out costs through streamlining and automating processes; deliver improved business outcomes from a better understanding of process flow.

- Increase business agility. Place control in the hands of the business community; deliver change more quickly.
- Deliver better business insight. Provide timely visibility of process definition, execution and performance; ensure required levels of compliance and governance within IT operations.

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 where they become 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

In order to review how the different vendor offerings stack up against each other, it is first necessary to look at the products and solutions offered by each vendor against a common frame of reference. In terms of perspectives, the frame of reference is intended to provide a way to categorize different parts of vendor BPM solutions such as products, services, characteristics and extensions. This may seem odd, because any sensible competitive analysis must be done from the buyers' needs perspective rather than based around vendor deliverables, but this common framework enables a clearer understanding of what each vendor offers in the broadest sense. It is the second part of the assessment where buyer needs are considered. In the comparison of different vendor offerings against each other, the yardstick is how well they satisfy user needs, but it is the initial framework that produces the clarity needed to be able to perform this analysis.

So the first step is to establish this frame of reference.

BPM offerings – frame of reference

The elements of the frame of reference will form a backdrop to describing what each vendor offering does in comparison to each other. There are really three key areas to be considered:

- Functionality: What BPM functionality does the vendor offer?
- Characteristics: What characteristics are delivered as part of this functionality?
- Solution extensions: What has the vendor put in place to fill out the offerings into broader solutions?

The first area is straightforward. BPM is now mature enough that most BPM vendors offer pretty decent coverage of base BPM functional requirements, but as maturity has grown, so the technology has advanced, and therefore there will still be plenty of differences in what is offered, or perhaps more importantly *how* the functionality is offered. The second area is where characteristics of the vendor offerings are discussed, such as security, availability, scalability and support for standards. Finally, the third area covers what is sometimes called the 'whole product' or 'solution' area – that is, ancillary offerings that fill out the BPM products into a solution. Typically this will include such areas as professional services offerings and partner ecosystems that can provide local support, but it could also cover additional ancillary products.

A summary of the key categories in each area is included below. Each area will then receive a little more explanation.

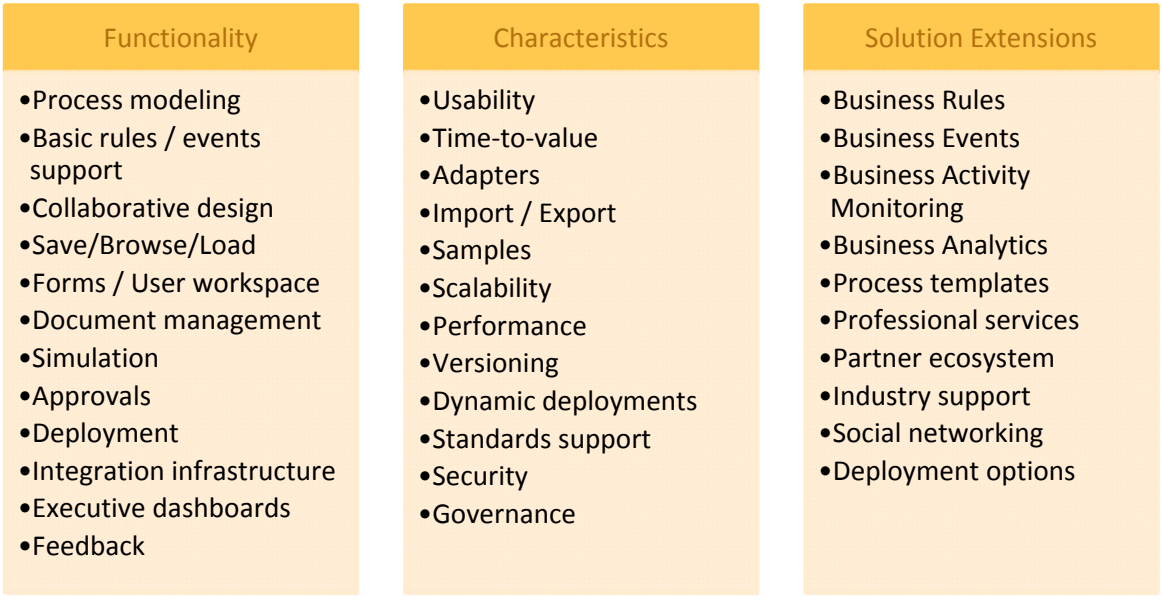

Figure 2:- Reference framework for outlining vendor BPM offerings

Functionality

Following on from the definition of BPM discussed earlier, the prime BPM functionality involves the ability to model business process flows visually at design time, and then at run-time have these flows direct the underlying execution of IT components in order to fulfil the desired processes.

Looking at these objectives step by step, for BPM tools to bring the desired benefits of greater agility and improved business / IT alignment, the first point to observe is that the modelling step needs to be accessible to non-technical business users. Otherwise, business requirements would still have to be translated into IT development every time a process needed to change, causing delays and losing the tight linkage between business need and technical implementation. However there is a challenge for BPM vendors to address here. In order to model a process flow, a relatively non-technical flowchart environment can indeed be offered, but the process flow design will not be complete until any interfaces between different IT components implementing the process steps are defined. For example, if one step in the process flow is executed in the shape of a mainframe CICS COBOL application, and another is a LINUX-based Java program, then although in the process flow chart these two steps can just be hooked together, at execution time the IT systems will need to know how to take the output from the CICS application and pass it on to the Java program.

Because of this issue, typically most BPM vendors will have to offer design-time tools that have two user classes; business users, who will be designing the process flows, and more technical users who will need to understand the way different IT systems talk to each other so that they can define how these 'integrations' should work. This can often be an area of very different approaches, and therefore of potential differentiation.

When designing process flows, the business user will usually be presented with a palette of existing 'steps' that can be strung together to make up the new process flow. However, an important part of this flow will be how to handle the decision points between steps, which will dictate what path the run-time execution takes. BPM vendors may offer a range of different functions to support this decision-making, ranging from simple inline if/then/else types of specifications to extracted business rules. Often creation of these decision rules is handled in the design tool through the use of menus and wizards to try to make it more accessible to non-technical users. Basic support for events-based decisions will usually be provided in exactly the same fashion, directly by the BPM software.

One area that has become an increasing focus for BPM vendors in the process design area is that of collaboration. While some simple BPM process flows may fall into only one specific area, it is much more likely that there will be a number of business analysts and managers that need to be involved in the process design. Some BPM offerings on the market offer a lot of tools and help in this area, while others leave users to work out their own collaboration mechanisms.

The next step in the design stage covers the saving and restoring of process components and flows. All BPM vendors offer some sort of repository where definitions and flows can be saved. An important part of functionality to support increased agility is the ability to search for existing components and flows that can then be assembled to provide a new flow as quickly as possible. These components are often referred to as BPM 'artefacts'. Often the lists of artefacts are presented in the design tool in an explorer-type fashion familiar to Windows users, so that the flow designer can bring in existing parts of the new flow and reuse them.

So far, the flow design has been done with a layer of abstraction from the real world, but now the design process has to look at how the flows will be enacted. Three items in particular have to be addressed. One has already been mentioned, and that is to define how different IT programs instantiating the process steps will interoperate with each other. However these interfaces are only required when linking one IT program to another. The second consideration is how to handle human tasks within the workflow. End-users of the process will need to have a way of interacting with the process, and this is usually achieved through the design of forms or other type of user interface. Often, BPM providers offer some form of customizable user workspace for the end-user, to provide a role-based, personalized interface to the process. The third real-world consideration is to ensure that any information related to an instance of the process can be attached to that instance. This is particularly evident when creating case management solutions with BPM; for instance if the process is handling an insurance claim, it may well need to involve physical letters, contracts and other forms of documentation. Support for all three of these areas is likely to differ widely between vendor offerings.

Before the flow design is finished, it is very likely that the business analyst will want to try out the new design to make sure it achieves its goals. To help with this, a number of BPM offerings provide simulation environments where the designer can try out the process. This is particularly valuable when the simulation can be loaded up to identify any bottlenecks in the process.

When the flow design has been completed, the BPM offering will usually offer some form of deployment capabilities, with related lifecycle and governance support such as approval mechanisms, versioning and audit trails. Once deployed, the BPM focus switches to run-time concerns. The run-time BPM engine will ensure that individual instances of process execution follow the flows and decision points defined. While this is all relatively automatic for IT program interactions, the human parts of the process will involve the need for various run-time functions such as work lists, escalation procedures, time checks and alarms and other aspects of ensuring successful end-user involvement.

As mentioned earlier, part of the process design task involves the specification of 'integrations' – that is, how information will be passed from one process step to the next. However, in terms of execution the requirement is much wider than that. In BPM, process flows are made up of numerous different IT components that could be running on any systems. As a result, an integration framework is needed to ensure that the technology exists to integrate these different components. This is now a relatively mature area in the IT marketplace, with most BPM vendors working with one or more Enterprise Service Buses (ESBs) or other forms of integration, but it is nevertheless an extremely important area for a successful BPM project.

Completing the feedback loop, having designed and deployed new BPM-controlled processes, the process designers will be looking for performance information on how the process is working in real life. It is this feedback that will be used to continuously enhance and improve the process design to drive ever higher levels of process efficiency and effectiveness. But this run-time information is not just for use by process designers in future improvements; a critical by-product of using BPM for process design is that there is now a much greater degree of process visibility in a business context, and this provides the ideal input for business users to monitor

operational business performance in real time. Most BPM vendors offer some form of business process monitoring functionality which enables executive dashboards, reports and general business performance tracking to be achieved. This may be passive, providing information for business users to review and identify issues that need to be addressed, or more active, for example detecting situations of concern and automatically triggering mitigating activities.

Characteristics

The first area considered the basic BPM functionality aimed at designing, deploying, operating and monitoring BPM process flows. The second area covers the characteristics of the BPM offering.

One of the hottest focus areas for BPM offerings is their respective usability characteristics. In the functional area discussions, the aspect of business user needs for a non-technical interface was discussed, but usability goes a long way beyond this. At the business analyst level, it is assumed that the BPM tool provides standard 'swim-lane' process charts with drag and drop facilities to add and wire up new process steps and new decision points. But what other tools are provided to the business user? For example, some offerings provide ranges of wizards to help the flow designer to build the flows. Another useful usability feature is the ability to simulate parts of processes rather than have to wait for the whole process to be defined. Ideally, the usability should be such that any technical skills required are kept to a minimum. Then there is the whole area of collaboration, where a lot can be done to make the team of designers as productive as possible as they discuss and modify the process designs together.

At the technical user level, usability is just as much of a concern. Again, wizards can often help, but specifically the integration developer will be interested in tools to make defining data mappings easier and quicker, and pre-built adapters to make it simpler to hook up different types of applications such as SAP, mainframe CICS and Java programs. It will also help if the tools the developer has to use are familiar in terms of look and feel. A lot of vendors now offer Eclipse-based tooling to help achieve this aim.

The area of usability leads on to another important characteristic – time to value. The idea of better usability is partly to reduce training costs but also to speed up delivery. However there is a lot more BPM offerings can do in this area. At the process design level, import/export capabilities between the BPM product and other common process flow tools such as ARIS or Visio, or even other BPM offerings that may be in use elsewhere in the company, can save considerable time. Providing samples will also help to speed deployment.

Scalability and performance are obviously two other important characteristics in heavy workload scenarios where process flows are primarily application-based, rather than human based. Versioning support will become increasingly important as deployments grow, as will easy-to-use browse capabilities to find existing process components that can be incorporated into new process flows. As far as performance is concerned, it is essential that measurement tools are available to quickly offer feedback on process performance so the design can be refined and optimized.

Reliability and availability involve offering capabilities such as clustering and mirrored files, particularly important for the BPM repository to ensure the availability of the run-time portion since this is where the process flows that will drive run-time operations are kept. One particular characteristic that can vary widely between offerings is how well the BPM offerings cope with new or modified process deployment. Some offerings cope better with live, dynamic deployment of process changes than others.

Support for standards is another important characteristic. Since a lot of business value is tied up in process designs and integration definitions, portability options are an important risk mitigation factor and this leads to the need for standards in specifying process flows, document handling facilities and interoperability features. For example, BPMN has become the key standard for process design specifications, while XML is regarded as the preferred way to format information for transfer between different systems.

Security is very important in a BPM environment, because the BPM models control real-time process execution and therefore business execution. Any unauthorized changes could seriously impact operations. In order to prevent this, one level of BPM security is that of controlling access to the process definitions, a task made more complicated by the desire to allow collaboration between different business users on individual processes. Security must also ensure any deployments are authorized, and then at run-time there is the need to ensure that users are authorized to use the appropriate workflow forms and functions. The other issue at execution time is more of a standard one for any application integration project; because BPM links different components together, quite possibly across different systems, it is necessary to have a way to pass a security token along the workflow to ensure that each system has a clear visibility of the identification and authorization level of the particular process user. This is usually done through token-based security mechanisms.

Governance characteristics are critical. BPM is all about designing the way the business processes work that will underpin commercial operations, and therefore it is essential to ensure that these processes have proper approval cycles, comply with regulatory or corporate requirements, deliver the appropriate quality of service and are accurately measured. This is an area where vendor offerings differ widely, and as such can often be a source of differentiation.

Solution extensions

At the functional level, BPM offerings all provide capabilities for making the decisions that control each step of the process flow, handling exceptions that might occur at run-time and monitoring process execution through dashboards and reports. However, more demanding BPM projects may need more complex and powerful functionality in each of these areas.

Some vendors extend the decision making capabilities by providing interoperability with Business Rules Engines. BREs are designed to provide for decision-making rules what BPM provides for processes; that is, an environment for business rules to be authored and edited by business users, a repository in which to store the rules, tools to manage them and the ability to deploy them in production operations. The big advantage of this approach is that when changes are needed to the way the decisions controlling process execution are made, this can be done simply by editing the rule without any need to change the process or anything else.

Similarly, although basic capabilities are offered by most BPM products to allow particular exceptions to be detected and acted upon, some BPM offerings provide interoperability with Business Event Processors (BEPs). As in the case of rules and BREs, the BEP allows for much more complex specifications of exceptions and other run-time circumstances of special interest, and ties these business events to corresponding actions. A BEP includes sophisticated correlation capabilities, for instance, so that information feeds from various different parts of operations can be processed, filtered and matched up to check for changes in business circumstances that require mitigating actions. As with BRE rules, event definition is provided through a non-technical interface for business users.

Basic process monitoring is again provided by all BPM vendors, but some have taken this much further by building in support for high-function Business Activity Monitoring (BAM) and Business Analytics tools that can provide a wealth of information on process execution performance and trends together with a range of tools to display and analyse the findings. For instance, BAM tools can monitor key performance indicators for the business and feed the information back to executives through easy-to-use dashboards. Executives can then drill down on any problem areas to find out what is happening and take the necessary actions. The Business Analytics angle provides tools to further analyse the run-time measurements, both in point-of-time and historically, to enable a much greater understanding of business execution, potentially leading to more highly optimized business operations.

These product additions offer new opportunities in BPM solutions, but perhaps the major area of focus in terms of turning BPM technology into more of a solution is to accelerate process design through the provision of process templates. A significant portion of any BPM project is designing the optimal process to achieve the

business goals. However, in many industries there are 'standard' processes that will be of interest to all companies. For example, insurance companies will all have an interest in a claims-handling process, cash-to-order is a familiar process for any company selling goods or services, and a new-account creation process will be required by all banks. The idea is that if the supplier can provide customers with ready-made, customizable process templates for the most common process needs, this will greatly speed up project delivery times. Vendors have radically different approaches to solving this problem, with some opting to try to deliver almost 'turn-key' process solutions, and others mobilizing industry communities to share knowledge over process design.

Another area that contributes to BPM as a solution is the provision of professional services to help companies succeed with their BPM projects. Although BPM maturity is growing, it can still be a difficult and confusing subject. Modelling a business to come up with the right processes is a task that can often be accelerated greatly through the use of experienced resources to facilitate and guide activities. Experience in implementing BPM projects, particularly within specific industries, can result in BPM 'playbooks' – methodologies that are proven to succeed. Whether a vendor offers such professional services directly or relies on a partner ecosystem, the availability and scope of these offerings and associated skilled resources is likely to be another major differentiator between prospective suppliers.

The provision of templates and services leads to support for particular industry verticals. Some of the processes provided, such as Cash to Order, will be generic, applicable to most industries. However, others are likely to be much more closely related to particular industry vertical needs. Some vendors take this to another level, offering not just process templates for a particular industry but also related services and a wealth of documentation and guidance to help companies within a particular industry sector to get a faster return by supplying a more comprehensive, industry-specific solution.

One solution extension that is starting to emerge is interest in social networking support. There are two particular areas where this is seen as of potential interest; collaboration, and end-user interaction. Part of the base BPM functionality discussed was the ability to have process designers collaborating to ensure the best possible outcome. However, as more people are becoming familiar with tools such as Wikis, ATOM feeds and aggregators, the idea of being able to add information to the process design discussions through the use of Wikis, for instance, is attractive. The same is true at the end user level. End users familiar with social networking tools might prefer to be alerted of new work through an ATOM feed that they could pick up in their individual aggregators.

Finally, a number of BPM vendors have given particular consideration to different deployment options and models. The default assumption is that the BPM software will be deployed on some specific on-premise platform from where it can control process operations and flows. However, some users are interested in deploying the BPM capability in a virtualized environment, and others are keen to extend this capability to enable deployment into the Cloud. While companies are in general concerned about issues such as security when considering running commercial workloads in the Cloud, there is quite a lot of interest in being able to carry out some of the process design and testing activities off-premise. For example, if a process is being designed in collaboration with one or more business partners, there are attractions to designing in the Cloud because it is a convenient model for a shared platform between partners.

Taking a look at the 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.

TIBCO Software

TIBCO Software has been offering BPM tools for a number of years. The current preferred BPM offerings are TIBCO ActiveMatrix BPM for enterprise deployment and TIBCO Silver BPM for deployment in the Cloud. Previously TIBCO had a number of other BPM offerings, such as InConcert, BusinessWorks and most recently iProcess Suite which was based on its Staffware acquisition. However the company has made it clear that the new BPM offerings based around its ActiveMatrix (AMX) SOA technology are now the preferred choice. This causes some considerable difficulties for TIBCO at the moment; it has clearly stated that TIBCO AMX BPM is a brand new codebase and product line rather than an upgrade of iProcess Suite, but at the same time iProcess Suite components such as iProcess Decisions (rules processing) are still required to fill out the AMX BPM product line. This confusion needs to be resolved quickly.

Functionality

TIBCO Business Studio is TIBCO's preferred BPM modelling environment. It is an Eclipse-based tool designed to run on Windows or Linux, and is used to design all aspects of the process flow, including BPMN model design, user forms, page flows, UML-based business data specifications, organizational structure and work items. The process design piece is of the familiar type, with swim-lanes and drag and drop of artefacts and connections. Basic rules and events to control in-flow decision making can be created through the same interface.

Creation of user forms can be carried out collaboratively between the process designer and the systems programmer. Business Studio will generate a default form automatically based on the process definition, and then the business user can customize this as required. The systems programmer can then add user input validation logic to ensure proper inputs and to help prevent hacking attacks. These forms can now be displayed along with work-lists and other end-user items using any of the TIBCO-supplied clients, or custom ones. AMX BPM provides an out-of-the box Ajax web client, Workspace, as well as Openspace which is a gadget-based client built using the GoogleWeb Toolkit (GWT). Openspace offers the opportunity for mashups that bring together a number of different activities for the end user. There is also a variant of Openspace specially for mobile device usage, for example iPhones; this is called Mobilespace. Business Studio also supports the creation of page flows as well as user forms. Page flows are run in the browser, and are essentially like mini-process flows that are designed to step the end user through the parts of the activity required by the overall process flow. This can be helpful instead of having to rely on individual user forms for each process step.

The organizational structure support provides the ability to pass work on to an organizational entity like a department or a specific role such as a Claims Officer based on the attributes of the organization. At run-time, this organizational information maps to a corporate directory, enabling accurate work assignment and escalation paths. In addition, the layer of abstraction provided means that the corporate directory information can be changed dynamically without having to affect the process.

In terms of collaboration, the same Business Studio tool is used by the technical community to create SOA (service-oriented architecture) definitions, and as such is the natural environment for the systems programmers to use to create any necessary integration steps to support the process flow model or to provide any other required technical support. For example, when creating a user form the business user can create the forms with input required, and the developer can then use the same tool to include data validation logic to ensure that user inputs lie within acceptable boundaries and are not attempts to hack the system.

As part of the process design activity, Business Studio also allows the process designer to attach documents to the process flow so that they can be utilized by the end users as required. The TIBCO support for this is fairly limited though; there is no significant document management and archiving support for example. There is also a useful 'playback' function that allows the process designer to see how individual parts of the process work as they are defined.

The Business Studio simulation environment provides process designers with a way to see how the current model performs. This simulation environment allows the designer to set up initial data, for example on the length of time different users tasks are likely to take and how much different end-user roles cost, and then to run the process model to see how it behaves. It is possible to wind up the load so that many process instances are executing at once to check for bottlenecks. Once the simulation is done, Business Studio provides a range of reporting capabilities to show the designer what is happening, such as where work is being carried out, what the cumulative costs are, how long different parts of the process are taking and the utilization levels of different departments and end users.

AMX BPM does not include any of TIBCO's AMX service governance technology, which is frankly surprising since governance is critically important in the area of key business process execution. However it may be that this decision simply reflects TIBCO's general positioning of its BPM technology as targeted at more lightweight, ad hoc departmental processes rather than key parts of business execution.

When a process is ready to be deployed, the first point to note is that the TIBCO OSGi-based deployment model means that instead of a process being deployed in isolation, processes are deployed as part of an application package that includes the process definition together with any related services and rules. This provides a much more useful deployment model, and is one of the enablers of Business Studio's ability to deploy either to the TIBCO ActiveMatrix environment or to TIBCO Silver in the Cloud. TIBCO ActiveMatrix BPM is the on-premise BPM platform, while TIBCO Silver BPM runs on an Amazon EC2 platform in the Cloud. This ability to interchange deployment choices lends itself to providing process developers and testers with individual BPM execution environments. Each process package deployed to TIBCO Silver BPM will be given its own Silver BPM execution environment in its own individual Amazon EC2 machine. However, there are no cloud-based discovery or modelling capabilities, which limits the use of this capability.

TIBCO ActiveMatrix is a Java-oriented application platform with an extensive integration infrastructure, providing TIBCO's base for SOA. However, TIBCO AMX BPM does not include these features, such as the ActiveMatrix Service Bus. Users have to buy these capabilities separately, although TIBCO AMX BPM can utilize the infrastructure once it is in place. Within the execution environment, the Monitoring, Reporting and Analytic feature collects information from executing processes and other sources, and presents it in the TIBCO Workspace client's Event view. The Event Viewer provides filtering and sorting functionality, presenting the data in real-time in the desired form. Events are also recorded in the events database for historical reporting.

One of the most interesting aspects of AMX BPM is the way it handles work management. Traditionally, human-based workflow products have offered static work queues – physical queues of work for an individual worker. However, TIBCO has taken a different approach with ActiveMatrix BPM; work queues are logical rather than physical, being built up dynamically based on a query from the user's workspace. This, combined with the organizational structure support, enables work to be assigned to groups and roles on a per-instance basis, depending on the attributes of the instance and the available resources and skills. This dynamic work assignment is controlled through business rules, specified in TIBCO Business Studio.

Characteristics

There are a number of features of the TIBCO Business Studio that add to a general ease of use. One of the most significant is that in Business Studio TIBCO provides a single environment for process modelling, testing, simulation and deployment, spanning both business user and technical roles. In addition, processes and their related services and rules can be deployed either on-premise or into the Cloud. This single interface reduces skill requirements, and adds to the ease of use.

This usability improves time-to-value, but there are other factors that also play heavily in this area. For example, the automatic generation of default user forms may not be sufficient to deliver perfect user forms for the end product, but for testing purposes it is ideal. The process designer can experiment with each step of the process, using the auto-generated forms, and once the process is working properly can then concentrate on

customizing the user forms to ensure they have the right look and feel. From the end-user perspective, the support for page flows also adds to the usability and reduces training needs, because it enables the process to include simple, step-by-step page flows instead of a potentially more complex form.

TIBCO BPM Silver may also help. Potentially the ability to create an individual instance of ActiveMatrix BPM in the cloud for each process designer provides a quick and easy test environment, although the fact that there is no process discovery or design functionality in the Cloud offering is likely to lessen the benefits substantially. Also, although BPM Silver uses its own LDAP, there is no mechanism to keep this in step with the enterprise LDAP, and so the user has to carry this out manually which introduces all sorts of opportunities for errors.

TIBCO ActiveMatrix BPM uses BPMN for detailing process flow models and the XPDL standard to share these models with other products. This ensures that the TIBCO BPM offerings provide good import/export facilities with any other component that has the same support. In addition, process flows created with AMX BPM can also be used by its older TIBCO iProcess Suite BPM product. In addition, AMX BPM comes with a set of process samples for some commonly used processes.

TIBCO has had a lot of experience in providing high-performing software systems based around its experience in the Finance industry, and therefore performance and scalability of ActiveMatrix BPM is expected to be reasonably good. TIBCO ActiveMatrix BPM includes versioning support, and processes can be deployed dynamically either on-premise or to the Cloud using Silver BPM. On the standards front, as one might expect with a newly developed software base, standards support is good. BPMN is used for process description, UML for data objects and XPDL for the exchange of models.

The area of governance is weak, though. TIBCO ActiveMatrix BPM does not come with the ActiveMatrix governance tools, but instead requires the user to purchase them separately. Given the importance of governance to BPM, this is a surprising oversight to say the least.

Solution Extensions

With TIBCO ActiveMatrix BPM replacing the previously preferred BPM offering, TIBCO iProcess Suite, TIBCO is caught at the moment between two product lines. This contributes to some level of confusion. The iProcess Suite offered iProcess Decisions as a business rules engine, and it is assumed that the TIBCO ActiveMatrix BPM product can still interface to this component if complex business rules are required in a process flow. On the Business Events Processing front, the picture is clearer, with TIBCO Business Events offering a full complex event processing environment for handling and processing business events and displaying them for monitoring and analysis. TIBCO ActiveMatrix Spotfire is a business intelligence offering that came from TIBCO's acquisition of Spotfire, and has been fully integrated with ActiveMatrix BPM. It offers sophisticated business analytics coupled with visual representation of data to make it more understandable and accessible.

In terms of process templates, TIBCO does offer a selection of templates for specific process needs such as its solution for Sarbannes-Oxley compliance, but overall it is extremely limited in this area. However, it has made a major change in its market approach recently by making the TIBCO Business Studio available for free via download, for use as a stand-alone process modelling tool. It obviously hopes that this will encourage the growth of a community that can start to produce industry-related and generic process templates. At the time of writing, TIBCO claims 50,000 downloads of Business Studio from its website.

TIBCO's Professional Services Group is a 500-strong professional services organization that specializes in helping companies to implement TIBCO-based solutions. Some of these specialists have BPM experience, and this can help companies make progress with TIBCO ActiveMatrix BPM projects more quickly. However, the TIBCO services focus is on working with the TIBCO products rather than wider business and corporate modelling. Similarly, although TIBCO has a partner ecosystem to help it fulfil local demand for support and consulting resources, these partners are also focused on the TIBCO product sale rather than the project.

TIBCO Silver BPM does offer a different deployment model for BPM processes; into the Cloud instead of on premise. Primarily this is being used today for development and testing purposes, but potentially in the future this could extend the TIBCO solution more widely.

The table below summarizes the salient points regarding the TIBCO ActiveMatrix BPM offering:

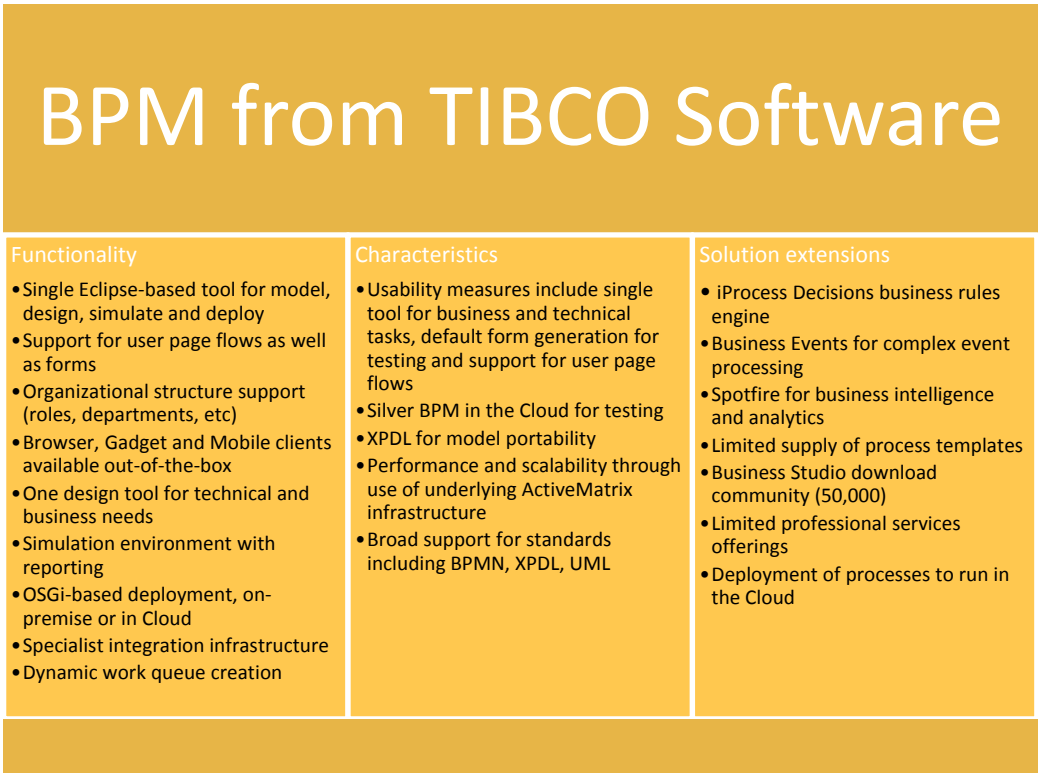

Figure 3: Summary of TIBCO Software BPM support

Pegasystems

Pegasystems is one of the few remaining pure-play BPM vendors in the marketplace, and is certainly the most established. The Pegasystems approach differs from most other BPM vendors in that it is much more focused on selling specific BPM-based process solutions such as Cash-to-Order rather than a BPM platform for general BPM process development and deployment, although of course its products support this approach too. This solution-oriented approach also leads to Pegasystems focusing especially on Case Management, which is integrated into its BPM offerings. Pega BPM is the main Pegasystems BPM vehicle. Everything about the Pegasystems offering is oriented around working from the target process downwards rather than from the drawing board upwards.

Functionality

Before coming to the traditional process design tasks, Pegasystems offers discovery tools that enable business users to use a wizard-based, guided approach to capture the business requirements for the desired process, and the key decisions that will control how this process will operate. If the target process is one of the ones in which Pegasystems specializes, this may carry the process model a long way through the design process. However, even if this is the case, subsequent customization of the 'standard' process model will be required, and certainly if enhancements are needed then this will also require new process design. Also, this 'speed-up' approach does not address the technical design needs to handle integrations and other technical aspects of the process execution, and it should be noted that the discovery tools themselves are quite expensive.

Pegasystems offers Designer Studio in its Pega BPM product for all process design needs. It is a single tool for use by business and technical users, used to define processes, policies, user interactions, rules and

integrations. Designer Studio is a thin, web-based client which Pegasystems sees as an alternative to Visio, but one point to note is that unlike most tools from other vendors, it is not Eclipse-based. Process design is based around BPMN models, and Designer Studio offers the normal swim-lane and drag-and-drop support for quickly building and wiring up business process flows. The model information from the process capture phase is brought into this environment directly.

Rules and events support is built into Pega BPM. The Pega solution has always been based around the decisions that control the process, and as such it includes a powerful business rules engine and an events manager. Rules and events support in Pega BPM is closely linked to its real-time decisioning support offered through Pega Decision Management, embedded in the Pega BPM offering. The declarative style of specification is powerful, bringing a high-level, process-specific view to handling decisioning, rules and events. However, this orientation around rules does have a major drawback when designing new processes from scratch; once the design has been sketched out, the process designer must now create the associated ruleset which can be time-consuming and inhibits a 'rapid development' approach to process design.

Pegasystems has adopted a 'social networking' approach for collaboration support, enabling teams to interact through facilities such as email, RSS feeds, Instant Messaging, chat facilities and other social media. It also offers features such as the ability to put a 'sticky note' on any forms/flows/rules to offer annotation and comments. All process artefacts are stored and controlled by Pega BPM, and can be shared between other process designers. But given the Pegasystems focus of rules at the centre of everything, the prime source of collaboration is from the authoring and subsequent editing of the business rules.

User interface support is provided through an Ajax-based portal, which is where all user interactions happen. As well as support for standard forms, Pega Designer provides functionality for 'guided interactions', which are a combination of role-based end-user page flows to guide the user through process activities. Guided interactions also include automated routing and escalation support. Document management is handled in the Designer Studio by utilizing a CMIS-based content management connector to share external content in the flow. This content could be emails, scanned documents or Microsoft Office files. Documents can be versioned, routed and destroyed as required. Full Case Management support is available through Pega Case Management, embedded within the Pega BPM package. However, this is a separate product with its own toolset.

Simulation is available both at the skeleton process level, where some parts of the process have yet to be completed, and at the whole process level. However, this support is fairly basic. Deployment is handled from the Designer Studio. Pega BPM is written based on a J2EE distributed architecture, and can run on a number of industry J2EE-compatible application servers. Processes are deployed to the required platform, and integration needs are then handled by leveraging the specific integrations defined with Designer Studio together with the underlying application server capabilities. The Pegasystems tools have been developed to run in a standard J2EE framework, and therefore as well as running deployed processes in the Pegasystems SOA-based server environment, the run-time can also be deployed to a range of industry J2EE application servers such as IBM WebSphere or Oracle WebLogic.

In terms of feedback and reporting, Pega BPM offers a comprehensive array of capabilities. Processes are monitored in both real-time and historically, and the results can be displayed in a number of ways. A selection of out-of-the-box web-based dashboards, reports and alerts can be used 'as is' for the specialized process solutions offered by Pegasystems, or customized ones can be created as desired using report-generation wizards. Process efficiency and effectiveness is measured based on the goals and policies, and some reports can also be viewed on top of the process model so that measured results are reflected against the individual process steps. The process analysis tools offer a range of OLAP-style analysis options for both real-time and historical information. In addition, the Chordiant acquisition has also enabled Pegasystems to offer a more sophisticated predictive form of analytics that is attuned to the business process. For example, Pega BPM can take into account factors such as customer lifetime value when determining actions and budgets through an analysis of that customer's previous interactions with the company.

Characteristics

Usability and time-to-value are both heavily influenced with Pega BPM based on Pegasystems's solution-oriented approach. Pega BPM is optimized to work from specific process solutions, such as Account On-Boarding for the retail banking industry. Given a company wanting to streamline this particular process, for instance, the Pega BPM support for gathering business requirements and decision criteria and then generating a 'standard' process model and rules set greatly speeds up both usability and time-to-value. The user must still customize the process for any special needs and define any required integrations, of course. Once a process needs to be modified or changed, the web-based Designer Studio offers a Visio-like interface that is easy to use, and the various social networking style collaboration options make multiple editing and authoring usable and quick. However it is important to realize that the list of supported process solutions is quite limited; the Pegasystems approach is specialization rather than generalization.

Portability of BPMN process models is achieved through use of the XPDL standard. In essence, any Pega BPM process model can be exported in XPDL form for use in another tool, and similarly XPDL models from outside can be imported into the Pega BPM repository. Visio charts can also be imported. However, because Pegasystems embeds so much of the decision management and rules capabilities within the process model, these ports are of limited use since they only cover the actual model itself and not all the underlying features and definitions.

In terms of samples, this is another area that reflects the Pegasystems focus on delivering specific process solutions. For the specific processes featured by Pegasystems, there is a lot of information in terms of samples and also business context from the Pegasystems support teams. Outside of these processes, there is much less information available. The position on adapters is also limited, with Pegasystems simply providing the standard connectors such as JMS, MQ, JCA and JDBC and then leaving anything else to the programmers to solve.

Pega BPM has been designed around a J2EE distributed architecture supporting server clustering, and can run on many different J2EE-compatible application servers such as IBM WebSphere, BEA Weblogic and Apache Tomcat. As a result it offers high availability and scalability that can leverage the features of the chosen application server platform. Security support is good, covering functions such as URL encryption, field and object level encryption, SSO, Kerberos and HTTPS. It also handles its own internal security without interfering with the security of external systems. Scalability has recently been demonstrated with a joint performance test with IBM based on an IBM System z mainframe where Pega BPM achieved linear scalability with a call center workload through 10,000 users.

Pega BPM supports versioning, and deployment can be done in a live fashion. Most industry standards are supported, such as BPMN, XPDL and CMIS, but because of the integrated form of the Pegasystems approach these standards are perhaps less evident than in other offerings.

Solution Extensions

Pega BPM comes with a full-scale rules engine built in, together with support for events, monitoring and analytics. However, all the Pega BPM support is geared to its own processes; it does not provide generalized support that covers other workload needs too, such as correlating events with non-Pega BPM managed activities.

Where Pegasystems does offer process templates, that is for its 'featured' industry and generic processes, it provides comprehensive support. It not only provides templates but a complete package including rules and events and decision management. However, because of this, the list of supported templates is limited. Case management deserves special mention, though. The Pegasystems Case Management tool is embedded in Pega BPM, and this provides for a fairly complete case management solution, especially in some particular industries such as Financial Services and Healthcare. The irritation however is that it needs its own tools.

Pegasystems has a team of professional services resources, but as might be expected for a company of its size the coverage is somewhat limited both in industry and geographical terms. Pegasystems has had its greatest success in the financial services industry, and here it has strong business skills. Healthcare expertise is also reasonable, and the Chordiant acquisition has made Telco another well-represented area. At the horizontal level, call center expertise is also high. However, Pegasystems focuses its own resources strongly on the support required to sell, install and use its own products; for wider professional services needs such as business modelling, Pegasystems relies heavily on a roster of business partners.

As well as on-premise deployment, Pegasystems offers cloud-based processing through its Pega Business Process Cloud, a managed service that enables companies to get started with Pega BPM without having to put in place the necessary infrastructure on-site. The Pega Business Cloud is not just for process design, but can also handle process execution. It offers 24-hour availability with greater than 99.9% availability, and also provides extensive security features. It is also compliant with a number of industry standards such as HIPAA and the European Data Privacy Directive. The implementation of Pega Business Cloud is such that it is easy to switch processes to run locally instead of on the managed services platform, making it easier for companies to migrate to a full on-premise solution.

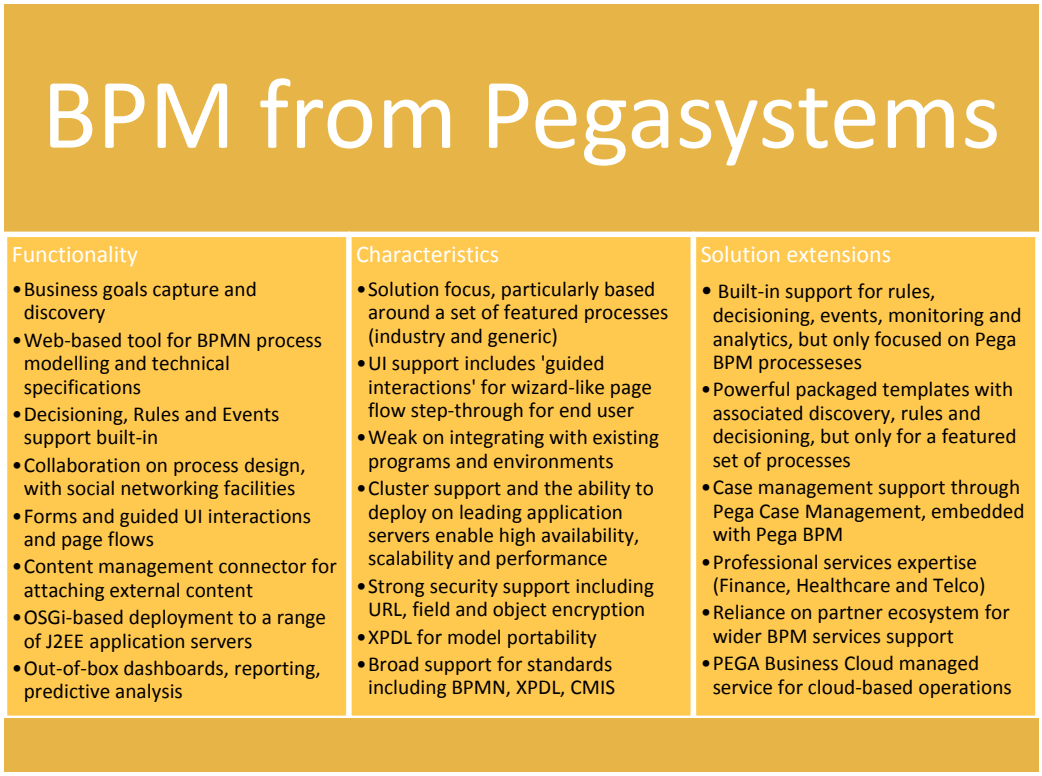

Figure 4: Summary of BPM support from Pegasystems

IBM

IBM has been involved in BPM for a number of years, with its solutions being a natural extension of the underlying webSphere-based SOA platform. IBM has made a number of acquisitions in the area of BPM, with the recent acquisition of Lombardi being the stand-out from a BPM perspective. The new IBM Business Process Manager represents the merging of the previous webSphere Process Server BPM capabilities with the Lombardi technology.

Functionality

Processes are designed within the Process Center environment, which is the IBM Business Process Manager asset repository where all process activity is stored, and from where it is deployed. IBM provides two design

tools, Process Designer and Integration Designer. Process Center and Process Designer will be familiar tools to Lombardi users, while Integration Designer stems from IBM's WebSphere Integration Designer. The idea of the two tools is that Process Designer is the BPMN-based process modelling tool for building long-lived business processes, while Integration Designer is the BPEL-based tool for designing SOA service and back-end orchestration at the application to application level. Process Designer will be used by business users such as business analysts and process designers, while Integration Designer is for technical IT staff. A key form of integration between the two technologies is the expectation that flows designed with the Integration Designer can be plugged into processes created with Process Designer. This decoupling ensures that business users designing processes with Process Designer can hand off any technical integration work needed to the development teams, and then pick up and plug in the resulting artefact that will have been created by the developers with Integration Designer. Integration Designer is also used to define and assemble SOA services, also recorded in Process Center.

Process Designer provides all the functionality expected in a BPM design tool, such as swim lanes, forms creation, BPMN models and drag-and-drop facilities. However, the Process Center component provides a number of other powerful facilities to aid in process design. Various created components like integration flows generated by Integration Designer can be placed in Toolkits which can now be shared with other users across multiple different process design projects. Process Center also allows all the artefacts related to one project to be gathered together in one 'workspace' that can be shared between multiple users. Indeed, this then enables Process Designer to provide a unified authoring environment for process design where multiple participants can collaborate on individual process design. A key point about this collaborative editing facility is that it is based on library merge capabilities rather than check-in/check-out; as a result, all participants can freely edit the process as required without waiting for someone else to put the model back before making changes. Another interesting feature is the ability to produce new versions of a process in the design phase through a 'Snapshot' facility. This enables the designer to take the current process design and all the related artefacts and set it as the new version on which further work can take place. It is also possible to roll backward and forward through the different versions to make comparisons.

The process design tool also supports the authoring and editing of Business Rules that will be actioned in process execution. IBM has used a syntax that is based on ILOG JRules format, and the subsequent rules are stored in the Process Center and run in the Process Server run-time engine. These rules are not formal JRules and cannot be run directly on the IBM ILOG Business Rules Engine, but they can be imported into ILOG and then subsequently reused as part of ILOG Jrules. Business events are also supported.

Forms and user interface specifications are supported in Process Designer, and forms are automatically generated from the process flow so that they can either be used immediately for testing, or can be customized to produce the most suitable format for end users. Widgets can be utilized that can be picked up by the Business Space user client. End user forms and related page flows are handled in Process Portal through the Process Coach capability. This allows a form to be created for the end user together with a wizard-style step-through to help with form usage. In addition, Business Process Manager provides federated task list support that offers visibility across all process participants.

Process replay and simulation are both also supported. The 'replay' function allows a process designer to immediately try the part of the process that has currently been developed to check if it is correct, and then the full process can be simulated with varying degrees of load. Results are available in various reporting displays, allowing such items as cost, time, throughput and utilization to be validated.

Because Process Center holds all the process-related assets, and the same repository is used for both design time and run-time needs, deployment is very easy and very fast. In fact, a new process can be deployed with a single click. IBM uses an OSGi-based deployment model, so the process is deployed in a package together with all related data and rules definitions. Process Center also provides governance facilities, for example the ability to track deployed services across all related systems.

At run-time, BPM processing for both BPMN and BPEL flows is carried out by IBM Process Server, formerly WebSphere Process Server. This BPM engine runs within a WebSphere application server, and handles execution of all the deployed processes. IBM Process Server also provides access to the integration infrastructure, process monitoring, events support and rules support. On the infrastructure front, a version of the IBM WebSphere ESB (Enterprise Service Bus) is included for BPM use to handle connectivity between components making up the process, but use of the ESB is restricted and not available for general use unless purchased separately. The rules support handles the execution of the rules created by the design tools.

On the monitoring front, Process Designer generates the monitoring models necessary for run-time monitoring of BPMN processes together with reporting and analysis facilities, including executive dashboards, bottleneck 'heatmaps' and scoreboards. The Performance Data Warehouse provides a whole range of analysis and reporting tools that can be run against the run-time process execution data.

Characteristics

Usability is benefited by the single Process Centre asset repository for all design time and run-time needs, handling all process and SOA services assets and providing better overall project visibility and opportunities for reuse. Splitting the business-based BPMN process design from the technically-based BPEL service orchestration avoids the different audiences being presented with mismatched tools, but the fact that the assets created are all pooled in the Process Center still allows for collaboration between the two communities, such as the ability for Process Designer to embed an Integration Designer developed flow into the process design, or vice versa. The 'replay' capability is also a valuable addition, allowing the process designer to step through all or part of the process to validate the current design. Also, the collaborative editing capability does not require check-in/check-out but has instead adopted a merge-based approach, which makes the whole activity much more usable for process design participants. At the end-user level, the Process Coaches make process interaction much easier, and the federated task list capability provides much greater visibility over what is happening in the process execution.

Time-to-value also benefits from the single Process Center concept. Reuse is encouraged by the use of toolkits and the sharing of assets, and process replay and simulation enable rapid development techniques to be used. At a lower level, the IBM WebSphere SOA layer where Process Server runs includes a wide range of adapters to different packages and back-end systems, and these can be brought into the flow through the Integration Designer. Having ready-made adapters improves delivery time considerably, since developing these integration interfaces from scratch can take an inordinately long time. Another function that speeds up delivery is the fact that IBM supports the XPDL standard for exchanging BPMN models with other tools, enabling models to be imported or exported easily.

Because IBM Process Server executes the business processes within a WebSphere Application Server environment, process execution is able to benefit from the extensive 'mission critical' characteristics of this environment. For example, WebSphere will handle transactional integrity and security for all process executions. It can be run in high availability clusters, is scalable and provides a range of recovery facilities such as automatic retries, compensating transactions and store-and-forward communications.

Versioning support is all managed and governed from Process Center, which carries out the deployments but also provides tracking across multiple systems. In addition, Business Process Manager processes can be deployed dynamically in a live system, without requiring the system to be quiesced or closed down.

IBM Business Process Manager supports a range of standards, with BPMN being used for process modelling, XPDL for model exchanges and SOA standards like WS-Security for lower-level integrations. Governance is handled through the Process Center. As the single asset repository and the source of all process and service deployments, both for design time and run-time, it is ideally placed to provide process lifecycle management.

Solution extensions

IBM WebSphere ILOG, based on the ILOG acquisition, provides a full function business rules environment that can be used in conjunction with Business Process Manager. It is not required for the built-in rules capability, but if rules are required that cover more than just the one process then an ILOG JRule is the preferred choice. These JRules can be imported into the Business Process Manager as an artefact, and stored in the Process Center where they can be called up as part of a process design. Rules created by the built-in Business Process Manager capability can be exported to WebSphere ILOG too. Similarly, Business Process Manager has built-in events capabilities, but more sophisticated event handling can be provided through IBM's WebSphere Business Events tool, which can pick up and manage events specified through Process Designer.

The picture for BAM and Business Analytics is much the same. IBM Business Process Manager provides monitoring and analytics for processes in the Process Center, through tools such as the Performance Data Warehouse. However these capabilities are focused on the needs of individual processes. More powerful monitoring and analytics services are available through IBM's WebSphere Business Monitor and the IBM COGNOS data analytics tooling, which can pull in the information from Business Process Manager.

The area of process templates is a significant one for IBM. Building on the extensive experience of BPM projects developed by its services arm, IBM offers a wide range of industry specific and generic process templates together with assets such as documentation and guidance. In addition, IBM has its Blueworks Live community which provides an environment where companies can work with others in their industry to develop new process templates. These two areas of expertise enable IBM to offer the most comprehensive set of process templates in the industry, and unless another vendor can establish a similar sort of community with the same commitment this is likely to remain the case.

Blueworks Live deserves more detailed comment, because it is more than just a community where users across the world can collaborate on process discovery and design through forums, bulletin boards, access to template libraries and other social networking facilities. IBM also offers process automation in the Cloud through Blueworks, which is an intriguing concept that may appeal particularly to companies new to the whole idea of BPM. This capability is not targeted at automating heavy-duty commercial processes, but rather at the sort of departmental or lightweight processes common in many companies for handling relatively simple activities such as on-boarding a new employee or booking travel. These processes can be run through Blueworks Live without any need for onsite BPM software. Access is browser-based, with an intuitive interface that flags new work items to users and allows them to act and then pass on the results. Managers can see at a glance where processes are currently waiting, and take any actions necessary. This is an ideal approach for a company new to BPM that is interested in starting to get productivity improvements through process automation without the need for major up-front investment. There is no limit to the number of users of these processes, and monthly costs for process developers are in the $10-50 per user range. On top of this, processes running in Blueworks Live can subsequently be migrated in-house to run in IBM Process Manager, providing an easy path for companies to start small and then grow into a more comprehensive BPM solution.

IBM has an extensive range of professional services offerings related to BPM, covering all aspects from high level modelling of the overall business down to implementation guidance and assistance for individual projects. With thousands of skilled BPM professionals worldwide, IBM is probably the largest global supplier of BPM skills in the world. However IBM also has an active partner ecosystem to extend these services facilities with local and specialist support.

BPM from IBM

Functionality	Characteristics	Solution extensions
• Single asset repository and environment for all design and run-time needs • Eclipse-based tools for BPMN process design and BPEL/Service desgin • Toolkits and workspaces for sharing assets • Team-based process design • Snapshot facility for quick versioning, with roll-forward and roll-back • Rules, events, monitoring and analytics • OSGi-based deployment • SOA infrastructure, ESB embedded • Processes run under WebSphere AS	• Usability measures include the ability to share assets between design tools and projects, replay/simulation and merge vs check in/out for collaborative editing • UI support includes Process Coaches for faster UI design and wizard-like page flow step-through for end user • Infrastructure and adapters for many packages and environments • XPDL for model portability • Performance, scalability, security, HA, transactional integrity and recovery through WebSphere run-time • Broad support for standards including BPMN, XPDL, UML	• WebSphere ILOG for business rules • WebSphere Business Events for complex event processing • WebSphere Business Monitor for advanced monitoring • COGNOS for detailed analytsics • Large range of process templates across all industries • Social BPM networking through Blueworks Live • Cloud-based automation for simple processes with no on-premise requirements • Extensive professional services offerings and skilled resources • Broad partner ecosystem for local support

Figure 5: Summary of IBM's BPM support

Contrasting the different BPM solutions

High level assessment

The three vendors considered in this report are each approaching the BPM market from different perspectives, and these perspectives are likely to be a major influence on buying decisions, dictating what is offered and in what form. In simplistic terms, Pegasystems came from the business side, attacking specific business process-related problems, while TIBCO and IBM came from the technical infrastructure side, although the approaches of these two companies have now diverged significantly.

Pegasystems' starting point is always to think about the business challenge, look for sweet spots where business processes are heavily rules-driven and relatively static in nature and then work to offer solutions for those sweet spot processes that get from the business goals and rules to implementation as quickly and effectively as possible. As a result, Pegasystems delivers high value for its target process scenarios, but as soon as wider solution areas are considered that lie outside its sweet spots it starts to struggle. In addition, its limited size restricts the number of featured processes and applicable industries. However, for the sweet spots that it does support, it offers a full service, making it easy for business users to input requirements and then delivering optimal processes that span human activities, program interactions and case management. It is particularly relevant for Financial Services and Healthcare companies, since it has a lot of expertise and experience in these markets, and through acquisition it has also acquired skill sets in call centre processes and the Telco industry. In essence, as a tactical solution to a specific process need it is an attractive solution provided the process lies within its relatively limited focus set, but it is less appealing as a strategic platform for on-going, broader process improvements, and even modifying the original solutions can be very time-consuming.

TIBCO has remained true to its roots as a technically-based infrastructure company. This is not to say that it does not support business communities, but rather that its whole approach is driven more from the technical than the business side. It has built a new Java-based infrastructure platform, ActiveMatrix, which it positions as an SOA platform, and on which it now bases its new TIBCO ActiveMatrix BPM offering. The reason this is all important in terms of this assessment is that this positioning drives TIBCO to focus on tools for users to build upon this base. If users need to build business process models, then that is what the ActiveMatrix BPM functionality is for, and TIBCO offers interfaces that a business user can use to help achieve this. But this is a true 'bottom-up' approach to solving business needs. When looking from the business community perspective, TIBCO lacks the tools to help businesses decide what they need to do. The TIBCO perspective is still based around staff getting the spec for the business process, using the tools to build it, and then deploying it. Even TIBCO's attempt to drive a business process community echoes this basic premise; offering Business Studio as a download is the classic response of a technically-based company. As such, TIBCO ActiveMatrix BPM is probably best suited as a tool to manually build lightweight, ad hoc processes, rather than a strategic BPM platform for the business.

IBM has taken a different route from the same starting point. True, its technology started from the integration infrastructure design point. But because it has had the benefit of having implemented many projects through its services team, it has been able to feed this expertise back into its offerings, enabling it to provide process templates for a wide range of business needs, drive process design all the way from the corporate business model if desired and increase affinity to the actual business problem. But IBM has also made a major change to its technology base by buying Lombardi, which was a pure-play BPM vendor like Pegasystems and hence very much more in tune with the business community of process designers and analysts. The new IBM Business Process Manager uses the Lombardi product at the business-facing end, which has given IBM a major lift in allying with the business community. The IBM Blueworks Live initiative has enhanced its ties with the business community while also providing even more expert input to be turned into process templates, and it also offers a new cloud-based process automation solution for simple processes that makes it an attractive starting point for companies just getting into BPM-based automation. But IBM's roots, combined with its position as a global

supplier trying to address the widest possible set of global requirements, has led it to concentrate on building up a huge set of process templates that can then be offered to the user as quick routes to value, to be customized as required. IBM stops short of delivering the sort of 'turn-key' business solution Pegasystems strives for with its specialized processes, but it offers value across a far wider range of business scenarios and hence much greater value opportunity.

Summarizing, the high-level differentiation between these three BPM offerings is

- TIBCO ActiveMatrix BPM is a useful tool for quickly building lightweight, ad hoc business process implementations on top of the ActiveMatrix application platform, but less well suited as a solution to more general, business-oriented process optimization needs
- IBM Business Process Manager provides a powerful and flexible base for delivering a wide range of optimized process implementations that are designed to address both industry vertical and cross-industry business needs, with IBM Blueworks Live offering an attractive entry point into process automation for companies just starting out on the BPM journey
- Pega BPM delivers business-oriented, tactical process optimization solutions, but these solutions are somewhat inflexible and only apply to a limited set of specific business scenarios and industries

The buyer's perspective

The previous sections have summarized the BPM offerings from each of the vendors against the same framework of base functionality, characteristics and solution extensions. This has allowed the information to be presented in a normalized fashion. This section will now compare and contrast the different solutions from the prospective buyer's point of view. In order to do this, the products will be reviewed based on a set of buyer criteria; TCO, time-to-value, risk and overall value potential.

In order to consider each offering and more importantly assess the different offerings in terms of capabilities, the perspective needs to switch from the 'level playing-field' of the functional areas and characteristics used to describe the products to a perspective more closely related to the buyer's interests. The four main criteria will be

- Time-to-value: How long will it take to complete a BPM project with this offering? When will the benefits start to flow?
- TCO: How will the total cost of ownership compare across the offerings? How much effort will be required to deliver, modify and maintain BPM projects?
- Risk: What classes of service can be supported? Will the project meet its business goals? How will exceptional situations be handled?
- Value potential: How much can be done with this BPM platform? How wide is the range of scenarios where it could help? Can functionality be extended to drive additional value? Can business value be optimized?

Each of these areas will now be considered in turn, with the three vendors being assessed against each one.

Time-to-value

With the current worldwide economic conditions, companies are under enormous pressures to reduce costs and deliver more value – 'do more with less' is the mantra of today. As a result, all projects need to focus very closely on both time-to-value and the total cost of ownership. This section considers the three vendor offerings being assessed in the light of the former, with the latter being covered in the next section.

In order to get a BPM project deployed, a number of steps need to be carried out. The first is process discovery, where business users think through what they want from the new or modified process and what the goals are. Then there is the process modelling step, including any data modelling. This leads to the process design and definition step where all the artefacts for the process are created including user interface screens,

rules or other decision-making mechanisms and integrations to connect underlying IT components together. After testing and validation, the process can now be instrumented as required, setting up any specific events and associated actions, and then deployed.

The first step will vary considerably depending on whether the BPM project is focused on a process to be developed from scratch, or taking advantage of a vendor-supplied package designed for a 'standard' process implementation. In the case of a project based around a process template offering, a lot of the thinking may have been done and therefore discovery will be about customizing the template to match individual corporate goals. In the general area of process discovery, Pegasystems offers a specific, wizard-driven tool to make it easy for business users to input their requirements into the process design, and to share their ideas with each other to refine the desired process objectives. However, it should be noted that this tool is not included in the Pega BPM price but charges for each developer log-in, making it an expensive option. IBM offers similar opportunities through its Blueworks Live tools, but there is a major difference here; the Pegasystems tooling is focused on the business team within the client, whereas the IBM approach allows companies to leverage the Blueworks Live community to share ideas with others in their industry. While there will always be some situations where a company would be reluctant to share information externally, in many cases the external communities will be happy to work together to develop common thinking, and rely on individual customization and implementation to supply differentiation. This enables IBM to leverage the power of a much wider community of collaborators. TIBCO is well behind in this area. Offering Business Studio as a free download on the Internet has generated 50,000 downloads according to TIBCO, and this has the potential to generate a similar community to IBM's Blueworks, but TIBCO has yet to provide the tools and leadership to make this happen. Even TIBCO's internal discovery tools are rather weak. Overall, this reflects on TIBCO's lack of focus on BPM from the business community side.

This leads to the area of packaged process templates; that is, offerings from the suppliers that provide sample implementations of specific processes, either generic or focused on particular industries. Examples would be Healthcare Claims Repair from Pegasystems for HIPAA-compliant claims handling, TIBCO's Formvine templates for simple departmental applications and IBM's Employee On-boarding process template, one of a veritable host of process templates offered through the Blueworks Live business process template library. These templates and packages make an enormous difference to time to value, with a lot of the work having already been done. Companies simply need to customize the processes for their own environments, hook them up to any existing applications and give them a try.

The three vendors have each chosen different approaches to this area. Pegasystems has chosen a very specialised and detailed approach, but focused on a small set of processes and industries. The package is thorough and detailed, with documentation, process templates, data models and rules all included. This delivers good time to value for companies looking to address precisely the processes addressed by these packages. However, because of the specialization, the applicability of each package will be limited in market terms, and the level of detail of the package contents combined with domain expertise restricts the number Pegasystems can hope to deliver. In addition, because of the detailed approach, when users want to modify these packaged processes this can be very time-consuming. TIBCO has not really embraced the packaged services approach at all, offering very limited process templates that only deal with a small number of situations. Worse still, many of the processes templates TIBCO does offer are based on the older iProcess Suite and have yet to be upgraded to ActiveMatrix BPM. Once again, it seems that TIBCO is more focused on the technically-based challenge of process design and implementation than the business context.

IBM has two significant advantages in this area which it exploits to great effect; it has an army of professional services staff who have worked on thousands of BPM projects across all industry verticals, and it has the IBM Blueworks community which is actively collaborating to generate knowledge and embody its experience. As a result, IBM offers numerous process packages that are either designed for specific industries or particular cross-industry processes. In addition, IBM can leverage its professional services experience to offer a wide range of BPM planning, discovery, design and implementation services. All these factors together result in IBM

being able to offer very broad support for process packages and templates. Having said that, IBM still opts to keep its solutions a little more generic than Pegasystems. For a soup-to-nuts process package, Pegasystems has the edge, but remember that choice is limited and further customization and modification is time-consuming and expensive.

Looking now at the design and development phase, each supplier offers different opportunities to accelerate time to value. Whereas the Pegasystems story is strong in time to value where process packages are concerned, in the more manual design and development area it is a totally different picture. One issue it faces is a direct consequence of its dedication to rules and decisions as the centrepiece of process design and operations. If the process to be developed is decision-heavy, then this can be an efficient way of designing it, but if it is decision-light then the overhead of having to work through the rules definitions required is too heavy-handed and slows the design task. However, the collaboration capabilities offered by Pegasystems are good and make life easier for process owners and authors. The social networking approach makes it quick and easy for each participant to note down questions, flag comments and share insights, ensuring that team consensus is reached quickly based on the best possible range of inputs. In terms of user interface definitions, the guided interactions capability within Pega BPM provides a quick and relatively easy way to build easy to use user interfaces that will require minimal end-user training, since the page flow approach ensures the end-user can be guided through the process. Also, because the business and technical process design participants use the same tool, it is easy to enable them to work together and collaborate which makes them more efficient.

TIBCO does not offer much help on process discovery, but it does have a number of features that promise faster process design and implementation. The organizational structure support makes it quick and easy to allocate tasks to particular roles, departments or people, and also provides a clear picture of escalation chains. The out-of-the-box clients are also very useful for speeding up user interface design and reducing training needs, either through use of the gadget-based approach or the mobile client. The automatically-generated defaults for user interface generation provide a quick route to validating parts of the process as they are built, and the Silver BPM cloud environment offes an easy way for multiple parties across the value chain to interact in the design process. However, the lack of process templates is a major drawback to fast delivery, positioning TIBCO ActiveMatrix BPM very much as a tool for building lightweight, ad hoc processes rather than delivering a solution to a particular process need. In addition, TIBCO offers relatively basic collaboration support on process design compared to the other two vendors being considered.

IBM offers separate tools for business and technical users with Process Designer and Integration Designer respectively. At first glance, it may seem as if this will make the design process more complicated, lengthening project delivery times. However this is not the case; because all assets created by either tool are held in the single asset repository, Design Center, and can be freely shared between the two tools in project-based workspaces, this separation is certainly no drawback to collaboration and in fact makes sure that business users are not confronted with any part of the technical tooling or vice versa. The ability to create Toolkits for sharing encourages reuse to speed delivery, and the collaboration facilities for team-based process design and development are particularly productive, especially since the multi-editing environment is based on library merge technology rather than the single-threaded check-in/check-out approach. At the UI level, Process Coaches speed up UI development and also reduce training needs for end users, offering a guided path through process execution. It is also worth highlighting the Snapshot capability, which enables process designers to quickly create new versions of the design as development progresses. It is a bit like saving progress regularly when writing a document; it keeps everyone on the same page, but also allows roll-back and roll-forward through the versions if problems are found. This Snapshot capability can help to avoid rework and speed up the journey to process design completion.

Part of the design and implementation phase is to put in place the technology to enable the newly designed process flow to map onto existing IT implementations. It is quite likely that processes will involve commercial packages, home-grown applications in more than one environment and web-based assets. Integrations between the various steps are implemented by technical staff through similar interfaces in each of the three

vendor solutions, although in the IBM case this is done with a separate tool from process design. However, interfacing to the other IT components that make up the execution environment can be a definite challenge and can really slow down deployment. Experience has shown over the last ten years or so that writing adapters to interface to particular packages, applications and platform environments can be incredibly time-consuming and costly, and therefore it is important to understand what help is offered by the particular BPM tool. As might be expected, IBM and TIBCO have a strong story here. Both IBM and TIBCO execute their BPM processes on their SOA-based integration platforms, and the lengthy experience of these two companies as integration providers ensures that they offer a comprehensive set of adapters and connectors for many industry packages and platforms. While Pegasystems has developed Pega BPM to run in either its own or other J2EE environments, it has no direct linkage to the underlying adapters, and instead limits itself to offering basic options like JDBC, JCA, JMS and MQ. This can potentially leave the integration developer with a lot of work to do.

Testing a deployment always takes considerable time, but once again the different suppliers provide assistance. All vendors offer the capabilities to execute individual process parts as they are designed for validation purposes, and all also offer simulation environments to experiment with the new process design and see how it affects resources and costs. TIBCO offers Silver BPM as an easy way for processes to be tested in the Cloud without the need for an on-premise test facility.

Finally, there is the question of the professional services and support the vendor can offer to speed delivery. In the marketplace today, BPM maturity is quite low in many companies, and therefore projects can be speeded up substantially by the provision of guidance and skilled resources to help with planning, designing and implementing the new, optimized processes. Both TIBCO and Pegasystems offer professional services to support their offerings, but the skills are primarily product rather than project related. In contrast, IBM offers guidance across the whole range of BPM project activities. For example, IBM's BPM FastPath offering delivers value from BPM projects within 90 days from start to finish, provided the project meets the IBM FastPath criteria.

TCO

An important focus for the buyer is not just the license costs of any one BPM solution, or the cost of delivering the first project, but the other associated costs such as support costs, skills and retraining costs and the cost of maintaining and upgrading the processes.

The first area considered is skills and training costs, and applies both to the teams responsible for designing and developing the processes and the end-users who will be process participants. BPM is a different way of doing things, and as such skills and training must be considered. The objective, of course, is to minimize any end-user training and to avoid the need for high-cost skills in the design and development part of the project. As far as end user training is concerned, all three vendors being assessed provide help in this area by providing different forms of guidance for end-users as part of the process design task. Pegasystems has its 'guided interactions', TIBCO has its page flow support and IBM has its Process Coaches. However on the skills required for process design and development, the vendors differ. IBM and TIBCO have gone for Eclipse-based tooling, which is more familiar to the technical community, whereas Pegasystems has chosen to go with a Visio-like interface that will possibly be a more natural fit for business users. However a big issue for Pegasystems is that since its solutions are so heavily rules-based, a certain familiarity with rules and their implications is required. Although business rules usage is growing, many users still lack maturity in business rules and the related area of decisioning, and this will increase costs for Pegasystems projects by requiring external skills to be brought in or additional training to be done. The gap could be filled by partners, of course, but that still increases costs.

Use of Cloud can also significantly reduce TCO by not requiring new investments until on-premise operations are required. Companies can get started and build the first few BPM projects in the cloud before later bringing them on-site. Pegasystems offers the Pega Business Cloud, while TIBCO Silver is the TIBCO cloud option. IBM

provides this capability through Blueworks Live. All are managed services environments that are available on a usage-charge basis.

The rest of the factors influencing TCO all reflect on how flexible the BPM implementation is, in terms of its receptiveness to change, whether simple maintenance or new features and functionality upgrades. Since all the vendors offer easily accessible and browsable asset repositories, with versioning support and dynamic updates for changes, the mechanics of process updating is more or less equivalent. However Pegasystems benefits from its dedication to rules-based solutions because changing rules is a lot less costly than changing process design. The other two vendors also support rules, and therefore can benefit from the same factor, but the point is Pegasystems places much greater insistence on the use of rules and hence is more likely to be able to benefit. But there is a flip-side to this; because everything in Pega BPM is centred around rules, when a change is required that involves a process which is not rules-heavy, it can be cumbersome and costly. Also worth mentioning is the TIBCO organizational structure support. Once put in place, it provides a level of abstraction between the logical and physical organizations. Changing an organization's personnel and roles will not affect the process design, because the binding between the organizational model and the actual organization in place is made late. This means that organizational changes can be handled more cheaply and easily.

Risk

Part of any product selection process is an evaluation of risk. The main focus is usually operational risk, although some elements of financial and strategic risk to come into the equation, for example when the likely longevity of a supplier is considered. For BPM solutions, the calculation usually consist of elements such as how well the delivered project will fulfil business expectations, whether service levels will meet criteria, what mechanisms are offered to preserve these service levels and the extent of vendor lock-in.

Pegasystems goes to great lengths to ensure the business goals are captured and that the process and related rules and decisions match those goals, which reduces the likelihood of it failing to achieve the desired objectives. In addition, the strong collaboration facilities with the social networking-based ease of use helps to ensure the design is solid, and of course the specialized process package also makes it more likely the process will hit the target. The picture is similar for IBM, with its process templates, community input and inspection and other collaboration facilities. IBM's single asset base makes it easy to share assets across BPM projects too, increasing reuse and hence process quality. In contrast, TIBCO's lack of specialized solution templates and less advanced collaboration tools mark it down in this area.

Making sure service levels are adequately maintained reflects both on the base capabilities of the different BPM solutions and the extent to which they can be monitored to avoid problems. IBM is in a very strong position here. Process execution takes place in the WebSphere Application Server environment, and this has developed extensive support for high availability, predictable performance and response times under load, scalability, transactional integrity and security. On top of this, IBM has a lot of experience in systems monitoring and users can either rely on the monitoring and analysis tools built in to IBM Business Process Manager to monitor and analyse process performance against expectations, or use IBM's WebSphere Business Monitor which enables monitoring to be extended beyond the specific processes and across system performance as a whole. Information can be displayed for executives using gadgets, and in more technical displays for technical systems teams.

Pegasystems has been designed to run on standard J2EE application servers, and as such, although its own platform may not have all the availability, security, integrity and performance characteristics that IBM offers, by deploying Pega BPM on an IBM WebSphere Application Server platform a lot of these benefits can be inherited. Having said that, even in its native environment Pega BPM does offer strong security and HA clustering support. Pega BPM includes powerful built-in monitoring for process performance and SLA tracking combined with a wide range of dashboard and reporting options, all of which contribute to reduced risk in assuring process activities. The one gap for Pega BPM solutions is that the Pegasystems tools are focused on monitoring Pega

BPM processes, and do not have good visibility of other activities elsewhere in the business workload. In larger deployments this can be a major issue.

TIBCO ActiveMatrix BPM runs on the TIBCO Software ActiveMatrix J2EE application platform. TIBCO has extensive experience in building high performing solutions for its financial services heartland, where TIBCO Rendezvous, the messaging product, is heavily used. But ActiveMatrix is a completely new platform which TIBCO claims was developed from scratch. While TIBCO already seems to be achieving good levels of availability, performance, scalability and integrity, the platform has yet to establish itself in the marketplace with the same level of reputation as IBM's WebSphere; however, it is early in its life. TIBCO offers fairly standard monitoring tools for assuring the performance of its processes.

Value potential

All BPM providers claim to solve the basic problem of being able to detail a process flow and then drive operations based on that model. Almost all will also claim to be able to handle program-based, people-based and document-based activities in the flow, although often the document-based support is added as an afterthought and has little functional support. But BPM can be a major investment for a company, and it is important to understand how the BPM solution can be broadened and extended to address new opportunities or provide added value in existing ones. The value delivered in a specific BPM project may be a major driver for purchase, but the overall potential for value creation has even more significance in the longer term.

TIBCO is the most limited of the three vendors being assessed in terms of value potential. It provides extended business rules support through its iProcess Decisions business rules engine, which is a hangover from its acquired Staffware iProcess Suite workflow solution, and it also has a complex events processing component, TIBCO Business Events, for providing wider events support across all operating processes. In addition, TIBCO ActiveMatrix Spotfire, based on the Spotfire acquisition, delivers powerful business intelligence and analysis tools with visual output that makes the results easy to understand. These tools enable process-specific rules, events and analysis to be expanded to encompass more of overall operations. The BPM Silver offering that provides TIBCO BPM support in the cloud is primarily used today for testing, but could in the future enable process to be executed in the cloud, although this is highly dependent on data access and security needs. But beyond this, TIBCO does little to help users drive new value opportunities. In particular, the lack of any significant process templates or packages combined with the relatively narrow focus of its professional services team means that the TIBCO BPM offering is limited to its basic *raison d'etre*; it enables users to manually construct process models, deploy them and manage them. Everything else is left up to the user. It is possible this might change with the TIBCO initiative to make TIBCO Business Studio available as a free download, to be used as a stand-alone process design tool. This has the potential to create an active community which could help TIBCO improve the value potential of its offerings by leveraging the shared community knowledge, but experience shows that free downloads have never been a guaranteed route to an active community.

IBM is a completely different story. The size of the IBM product portfolio, supplemented by some key acquisitions, enables IBM to broaden the BPM solution to drive value in a range of different ways, and its extensive experience with project implementations through its global services arm gives it the expertise to add considerable value through process templates and implementation playbooks across a wide range of industries. The ILOG acquisition provides WebSphere ILOG, a leading business rules engine that can take the IBM Business Process Manager rules capabilities and broaden them to encompass much more than individual processes. WebSphere Business Events does the same for events management, providing complex events processing that extends the process-focused capabilities offered by the BPM tool to a wider set of inputs. WebSphere Business Monitor broadens the monitoring support too, and also interfaces to the IBM enterprise management framework, Tivoli, extending monitoring visibility and insight even further. IBM COGNOS is available for more detailed analytics needs. At the other end of the spectrum, IBM Blueworks Live provides an easy route into process automation for simpler processes by enabling them to be run entirely in the Cloud, with no on-premise BPM products required.

On top of this, IBM already offers many different process templates and packages that have been developed from its own experience with service engagements, and the IBM Blueworks community is greatly enhancing this knowledge base with users all over the world collaborating on the processes that matter to them and their businesses. These add enormous value to BPM projects that fall within this broad and growing set of process examples. However, regardless of the BPM projects being considered, the IBM global services experience enables IBM to offer a more far-reaching value potential to companies by working with executive teams to model the overall business and then drive down from that model to prioritize and deliver the process optimizations and changes to match the overall company goals. This is particularly valuable for companies that are not trying to tackle a single set of processes but that are instead looking to transform the business into a new way of working.

While Pegasystems cannot compete with the enormous wealth of knowledge available from IBM's global services and IBM Blueworks communities, its different approach does enable it to offer value add to a limited set of specific, individual process-based projects to a greater extent than the other two vendors. Pegasystems has always approached BPM from the point of view of a specific, process-based business requirement. As a result, it already had built-in full rules support, events, decisioning, monitoring and analytics. It could be argued that it does not offer the breadth of IBM and TIBCO in these areas, since its offerings are concerned solely with processes under its control, but from the Pegasystems perspective that is unimportant because it is trying to address a specific set of business process needs, such as handling insurance claims. This narrow focus makes it possible for Pegasystems to deliver a lot of value add in its BPM process 'packages', with process and data models being automatically produced from gathering the business rules and goals. Obviously these auto-generated processes will need customizing, but it still offers great value potential. A good example of this business-focused added value is the Pegasystems Case Management support. Case management is a specialized aspect of BPM with specific needs such as handling external documents and written materials as well as IT-based and human interactions, and provides another way of delivering greater value potential.

But there is a down-side for Pegasystems. By focusing narrowly it is able to add a lot of value-add to the specific process, but outside of these narrow areas of focus the Pega BPM offering loses a lot of its shine. When trying to create a new process from scratch, for example, where there is no 'packaged solution' from Pegasystems, the rules-based focus can slow down and confuse the task, and the development tooling is adequate but not special. The same factor shows through when looking at professional services. Pegasystems has had a lot of its success in Healthcare and Financial Services because these have been focus areas, and with the acquisition of Chordiant it has now extended its expertise base to Telcos and call centres. But although it does offer its products outside of these industries, it cannot offer the same level of expertise. And although Pegasystems offers a cloud-based offering with Pega Business Cloud, this is more of a deployment option than any attempt to drive a Blueworks-style community that could help it to expand its focus more rapidly.

Summary

Business process management (BPM) has become a vital technology in the battle to optimize business process efficiency and effectiveness while at the same time improving alignment of IT-based operations with business goals and needs. It can deliver greater agility and accuracy by placing the business community in greater control of process execution, and improved visibility leads to more effective governance and better business outcomes.

Most major software vendors have moved to address these BPM needs, but with varying degrees of success. One 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 across a broader range of industry requirements.

TIBCO, IBM and Pegasystems all offer BPM solutions, each with different characteristics. Buyers will want to know how quickly projects can be delivered, of course, but they will also be sensitive to the broader total cost of ownership, including how easily the solution can flex to address changing business needs, and how the new BPM platform and processes will affect customer service, both internally and externally. In addition, unless the BPM solution is being brought in for a purely tactical need, buyers will be very interested to see to what extent the BPM solution can drive further value by enabling new business solutions and opportunities. The summary table below provides a quick check of the comparative strengths and weaknesses of each offering.

	Time to value -ve +ve	TCO -ve +ve	Risk -ve +ve	Value potential -ve +ve
Pegasystems	■■■■■■■■■□	■■■■□□□□□□	■■■■■■■■□□	■■■■■□□□□□
IBM	■■■■■■■■□□	■■■■■■■■□□	■■■■■■■■■□	■■■■■■■■■□
TIBCO Software	■■■■■■■□□□	■■■■■■■□□□	■■■■■■□□□□	■■■□□□□□□□

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

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 fine as long as it has a solution package for the process you want to improve and if requirements are relatively fixed, IBM is excellent for a more comprehensive and flexible solution that supports both tactical and strategic process improvement needs across the widest range of opportunities and TIBCO Software is a good choice for simple, ad hoc processes for those companies that have invested in the TIBCO ActiveMatrix application platform.

About Lustratus Research

Lustratus Research Limited, founded in 2006, aims to deliver independent and unbiased analysis of global software technology trends for senior IT and business unit management, shedding light on the latest developments and best practices and interpreting them into business value and impact. Lustratus analysts include some of the top thought leaders worldwide in infrastructure software.

Lustratus offers a unique structure of materials, consisting of three categories—Insights, Reports and Research. The Insight offers concise analysis and opinion, while the Report offers more comprehensive breadth and depth. Research documents provide the results of practical investigations and experiences. Lustratus prides itself on bringing the technical and business aspects of technology and best practices together, in order to clearly address the business impacts. Each Lustratus document is graded based on its technical or business orientation, as a guide to readers.

About Lustratus REPAMA

Lustratus REPAMA is the marketing consultancy and competitive marketing intelligence division of the analyst firm Lustratus Research Limited. Whilst Lustratus Research provides detailed technology analysis, reports, insight and advice aimed specifically at end users of technology; Lustratus REPAMA helps technology vendors to better compete in their markets.

The REPAMA research methodology is central to Lustratus' consultancy services and provides a detailed map of the go-to-market strategies of the vendors in a particular market segment. We represent these strategies and tactics graphically as well as textually which makes it simpler to compare vendors' strategies and to identify strengths and weaknesses.

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