Magic Quadrant for Intelligent Business Process Management Suites

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This iBPMS Magic Quadrant positions 14 vendors that are focused on the maturing iBPMS market, where process participants, including people and systems, are supported by greater intelligence to ensure improved process outcomes.

Market Definition/Description

An intelligent business process management suite (iBPMS) is an advanced category of BPM-enabling technologies. It is the natural evolution of the earlier BPMS market, adding more emphasis on support for greater system and human intelligence within business processes. Capabilities such as simulation, optimization and the ability to gain insight into process performance have been included in many (but not all) BPMS offerings for several years. Modern iBPMSs have added enhanced support for human collaboration, integration with social media, mobile access to processes, more analytics and real-time decision management.

The iBPMS is one of many technologies (see Note 1) that support business process management (BPM) — a management discipline that treats processes as assets that directly contribute to enterprise performance by driving operational excellence and agility. An iBPMS is a type of BPM platform — the category of BPM technologies that also includes simpler model-driven tools that enable the development of process applications, as well as BPMS and iBPMS product categories. Any of these technologies can be delivered as a platform as a service (that is, a "cloud" deployment) or as an on-premises product.

iBPMSs address the increasing need of business managers to react quickly to events that impact their business, and to gain better insight into business operations so that they can take the right corrective actions. Business change is inevitable, and leading organizations will require the ability to dynamically make changes to business processes to maintain competitive advantage. Such dynamic process change might be enabled automatically by allowing technology to change the process based on rules and parameters, or by using deeper analytics and information about events to provide real-time situation awareness (see "Case Study: Learn Some Lessons From TXU Energy's Operational Intelligence System"). These capabilities can enable the people who are involved in the process (and business process owners who are responsible for process performance) to enact process change, tailoring their responses appropriately to emerging business threats and opportunities.

The wider BPMS/iBPMS market includes some vendors that don't yet offer a full iBPMS, just as the wider BPM technology market includes vendors that offer simpler workflow engines that don't address the full life cycle of ongoing process improvement. After years of double-digit growth, the BPMS/iBPMS market's size declined slightly in 2012, with the worldwide market estimated at $2.3 billion.[1] We identified several drivers for this change in "Market Snapshot: Business Process Management Suites, Worldwide, 2013." Vendors that grew in the flat market tended to be those that offered iBPMS products, as well as those that were addressing the drivers for quicker project starts by delivering on cloud infrastructure. Some two-thirds of BPMS/iBPMS software spending in 2012 was directed at vendors that offer iBPMS products, indicating that the market is already well on the way to transitioning to iBPMS, with a minority of spending overall going to those offering narrower BPMS products.

All of today's iBPMSs support traditional process management needs — covering a range of scenarios discussed in "Market Update: Match BPMS Vendors to Your Usage Scenarios" — supplemented by the requirement to support intelligent business operations (IBO; see Note 2). When an organization is involved in a continuous process improvement initiative, an iBPMS can help support process optimization by providing insight from both inside and outside the process, supporting process owners and process participants.

An iBPMS can also:

- Provide added intelligence to many industry or company-specific processes (see Note 3).

- Provide support for a business transformation initiative — supporting process participants and adding intelligence by encouraging broader adoption through the organization and helping people collaborate within individual process instances (or cases).

- Support a process-based, service-oriented architecture (SOA) redesign (see Note 4).

Businesses in a variety of industries have an increasing need for process intelligence to gain insight into what needs to be done to meet the desired process outcome. Although not all organizations are ready to take advantage of the full capabilities that an iBPMS provides, all BPM technology buyers should consider the impact of the need for greater intelligence in and around their business processes. Large companies will need to invest in more than one iBPMS to meet the requirements of diverse projects.

The more advanced technologies should be considered in planning road maps, even if near-term requirements are for simpler capabilities. It is also important to consider the enterprise's process styles when making any technology selection, along with organizational maturity, as not all solutions on the market support all process styles equally well (see "Analyze Your Process Styles to Ensure Technology Choices Lead to Improved Business Outcomes").

iBPMS Capabilities

To support faster time-to-solution and subsequent rapid changes to business processes, an iBPMS uses a metadata- and model-driven approach. A graphical business process and rule modeling capability is used to model the behavior of the solution. Some iBPMSs execute this model at runtime (they are interpretive), while others generate code that is compiled at development time (see

"Systems of Differentiation and Innovation Require Different Types of Model-Driven Application Platforms").

An iBPMS has *all* of the following elements:

- **Process Orchestration Engine —** This coordinates the interactions of all types of actors (people, devices and computer systems) for structured and unstructured flows, and also supports case management and dynamic processes — for example, by having a rule-driven workflow that can include predetermined process snippets, but also supporting ad hoc (unplanned or unstructured) process flows, and responses to both human- and system-initiated events. It manages short-term and long-running processes; logs changes to the state of the coordinated resources; adjusts priorities and the order of execution of process instances; terminates, updates or suspends in-flight processes; and schedules future work (processes and activities).

- **Graphical Model-Driven Composition Environment —** This provides authoring/development tools and runtime support for heterogeneous composite applications. Process flow (and, optionally, rules) must be explicit objects in the models. This supports user interface (UI) composition for building portlets, portal pages, and rich-client and mobile UIs. This covers process model validation, such as domain checks, completion checks and warnings on inconsistent patterns.

- **Content Handling —** This capability natively manages or integrates with other enterprise content management (ECM) tools to manage documents and (optionally) other types of content (such as graphical images, audio or video). It creates, reads, routes and updates content managed by third-party content repositories.

- **Human Interactions —** This supports personalized workbenches for participants (based on role, preferences, access rights and so on), and provides interactive access to tasks, content and other resources. User experience can be tailored to organization unit, role, skills and/or the individual. There is Web and multichannel support with forms, portlets and rich UIs, leveraging personalization. There is native or HTML5-based support for one or more mobile devices, collaboration capabilities to help people exchange data, and ideas about a process in a flexible, user-controlled manner.

- **Process Intelligence and Business Activity Monitoring (BAM) —** This provides active analytics via process intelligence and BAM to facilitate all of the following:

  - Continuous intelligence (including monitoring, alerting and maintaining context awareness).

  - Monitoring metrics related to processes (interactions and resources) coordinated by the tool's orchestration engine.

  - Interactive monitoring dashboards, detecting threats, opportunities and other anomalies, which raise alerts for at-risk process instances and activities.

  - Automatic trigger responses to threat and opportunity situations through messages, service calls or other interfaces.
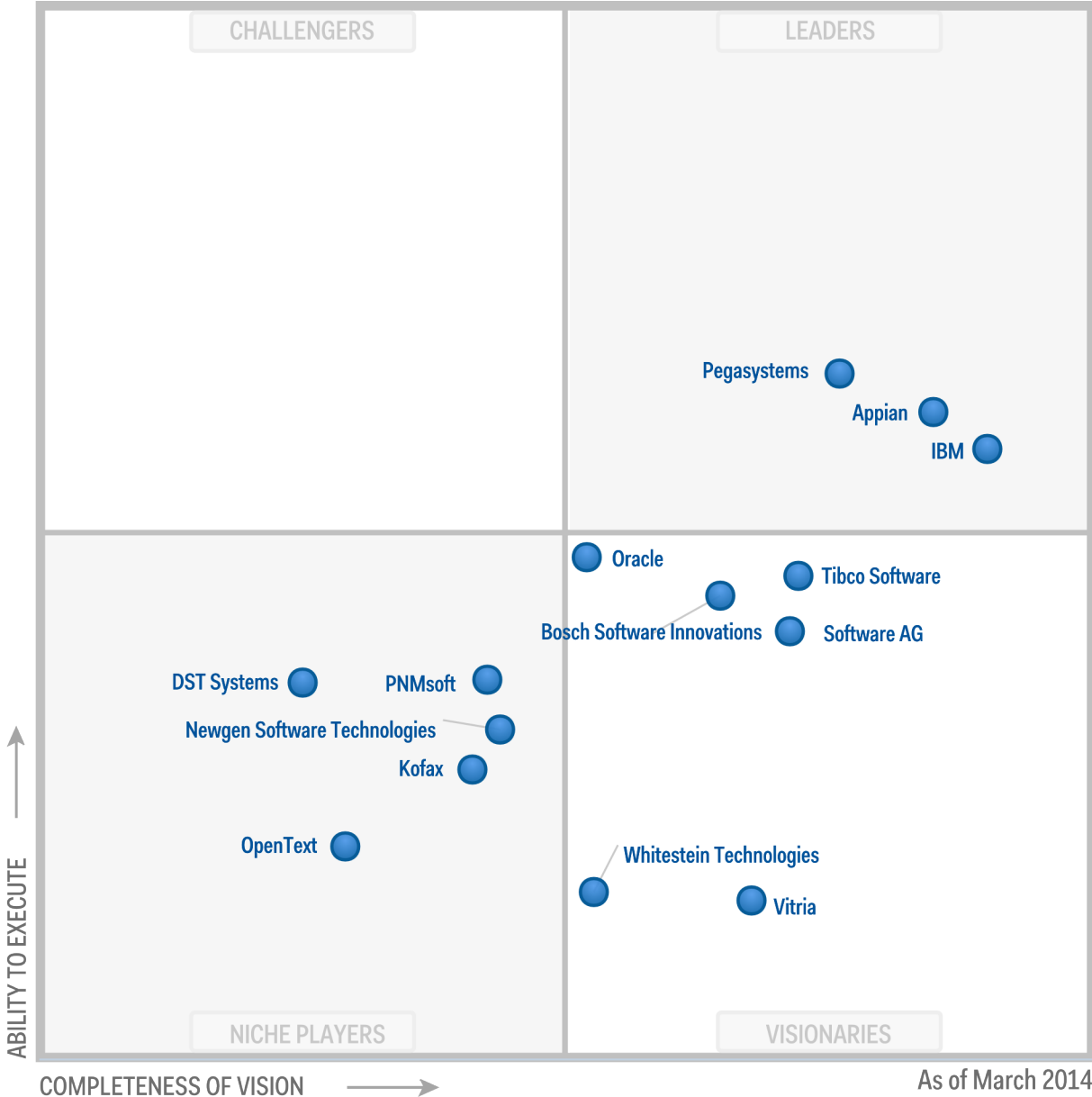
- Ability to log process and/or other events into a process performance warehouse/audit trail or event log.

- Data intelligence BAM, including adapters to capture events from *outside* of the iBPMS process orchestration engine. In addition, continuous analytics are also required to display key performance indicators (KPIs) and other metrics on business dashboards, and also to send alerts and trigger responses.

- On-demand analytic capabilities (that is, services that run on request to help a person, application or device make an informed decision), as well as offline tools to simulate processes, and improve process design and how the process is executed.

- **Business Rule Processing —** Software-based reasoning that infers logical consequences from a set of facts or axioms. It manages and executes rules that represent business policies. At a minimum, it must support forward chaining/deductive reasoning.

- **Connectivity —** There is support for HTTP, REST, SOAP, WSDL, and ODBC or JDBC, and usually the ability to connect to mainstream commercial off-the-shelf (COTS) applications.

- **Management and Administration —** This includes:

  - **Configuration and Management —** This includes configuring, deploying and administering the iBPMS platform and application artifacts, as well as version control in conjunction with the registry/repository, and security by application, user, role, group, department and function.

  - **Management and Monitoring —** This includes the capability to start, stop and manage the performance of processes and their associated components, as well as logging and managing audit trails.

- **Registry/Repository —** This stores and manages process-related runtime and design time metadata and artifacts. There are reporting and query (browse and search) capabilities, as well as version control (often working in conjunction with administrative tools). A holistic information model covers all essential aspects of the process but is also extensible. There are security controls on the registry/repository.

A leading-edge iBPMS frequently may have more features and functions — the feature list above is the minimal requirement. "Selection Criteria Details for intelligent Business Process Management Suites" has more insight into the essential and optional advanced capabilities of an iBPMS. It is important to focus on the capabilities your organization is likely to need. For example, is your organization ready to take advantage of greater collaboration around knowledge-centric processes? How vital is mobile access to processes today and in the near future? (See "BPM Reinvents Mobile Work.") How "real time" does your process awareness need to be? (In many instances, near-real-time BAM is good enough — sometimes even daily updates are fine.) The BAM, rule-processing and analytics capabilities of an iBPMS can be used to provide a substantial amount of operational intelligence to a business operation. However, an iBPMS is different from an operational intelligence platform product because the primary mission of an iBPMS is to support new processes or extensively changed processes (see "Commercial Operational Intelligence Platforms Are Coming to Market"). An iBPMS does not necessarily have to be a single product, but the various components

should work together easily, and require minimal integration. The cloud is likely to become increasingly necessary to handle some of the more aggressive analytic workloads.

Magic Quadrant

Figure 1. Magic Quadrant for Intelligent Business Process Management Suites

CHALLENGERS — LEADERS
Pegasystems
Appian
IBM
Oracle
Tibco Software
Bosch Software Innovations — Software AG
DST Systems — PNMsoft
Newgen Software Technologies
Kofax
OpenText
Whitestein Technologies
Vitria
ABILITY TO EXECUTE
NICHE PLAYERS — VISIONARIES
COMPLETENESS OF VISION
As of March 2014

Source: Gartner (March 2014)

Vendor Strengths and Cautions

Appian

Appian (www.appian.com) is one of the dwindling number of pure-play BPM vendors left in the iBPMS/BPMS market. It focuses on delivering a platform that makes it easier for businesses to construct and evolve new-generation applications that natively incorporate cloud, social, mobile and analytics. The following analysis refers to Appian v7.2.

Strengths

- Appian is one of the most business-user-friendly products in the iBPMS market. Trained business users can compose and create processes and manipulate virtually any of the interactions and resources associated with structured, ad hoc and "smart process" styles. An in-memory data store provides rapid access to process-centric information and facilitates active and on-demand analytics.

- Appian leads the BPM platform as a service (bpmPaaS) market (see "What IT Leaders Need to Know About bpmPaas and Cloud-Enabled BPM Platforms"), and the cloud represents a significant portion of the company's revenue. Unlike other iBPMS vendors that offer bpmPaaS, the majority of clients that deploy Appian Cloud use it for production rather than development and testing.

- A social computing interface that is natively supported on each of the popular mobile platforms promotes engagement among process participants, customers and value chain partners. An intuitive ad hoc data-integration capability, which is accessible from this social interface, drives process discovery and collaboration.

- Appian leads in the number of implementations that combine social, mobile and cloud, and has a reputation for requiring fewer consulting resources and less time to deploy compared with other offerings in the iBPMS market.

Cautions

- The native mobile platform currently requires the use of iOS, Android or BlackBerry devices.

- Appian is growing so quickly that it will have to work hard to build sufficient skills and partnerships, and to maintain quality and consistency across internal and partner resources to meet demand.

- Appian faces the challenges that any moderately sized private company does when competing with large publicly funded vendors that offer iBPMS.

- Although the Appian iBPMS leads in intelligent collaboration, it does not have full complex-event processing (CEP) and analytics capabilities to drive high-volume predictive analytics where complicated pattern matching is a requirement.

Bosch Software Innovations

Having acquired both BPMS and business rule technologies, Bosch Software Innovations (www.bosch-si.com) now focuses firmly on the iBPMS market, with an emphasis on support for business processes that involve the orchestration of devices, as well as people and systems. The Bosch iBPMS product reviewed here is inubit Suite 6.1 (including Visual Rules 5.4).

Strengths

- The inubit Suite supports dynamic event-driven processes well (particularly when those processes need to react to external triggers — for example, from sensors or devices).

- The support for complex process design is clever, incorporating advanced visual business rule management. Bosch Software Innovations has experience in credit risk rating and processing, and provides integration with a range of analytics into the way rules are used around process flow.

- As might be expected from a vendor whose parent company focuses on engineering products, this iBPMS has excellent integration with devices and the Internet of Things, allowing processes to be developed that can take input from sensors and trigger actions on actuators or other devices as part of a business process.

Cautions

- Although a number of reports are available out of the box, they are likely to require configuration to be most useful, and it is not easy to see the status of a process visually on a graphical process model within a BAM dashboard. Improved reporting is available via the add-on inubit Process Monitor module, at additional cost.

- Support for CEP (that is, streams of events where only some may be relevant to the process) is simplistic, although the current road map indicates improvement in the near future.

- Although process participants can collaborate around processes and share information about a case, there is limited native social collaboration, which might slow adoption across an organization.

DST Systems

DST Systems (www.dstsystems.com) provides services and solutions, primarily to financial services and healthcare payer organizations. Its iBPMS, called AWD, provides the foundation for its business process outsourcing and managed solution businesses. AWD, known for its record-keeping-oriented case management capabilities, is also available as a stand-alone product. This analysis pertains to AWD10 service pack 7's.

Strengths

- AWD is a mature product with a very intuitive authoring environment — based on configuration models — that supports technical and business roles working together on different aspects of

the solution. DST's extensive domain expertise in financial services and healthcare payer processes is evident in its many prebuilt features, such as parsing of Twitter feeds, quality control selection algorithms, data transformation, prebuilt rules and various workflow routing patterns for separation of duties. This makes solution development easier and faster for business roles and IT professionals.

- DST has offices around the world and prides itself on its relationships with its customers. Customers with whom we spoke have a long history of work with DST and are very satisfied with their partnerships.

- Buyers using solution frameworks based on AWD or developing a custom solution on AWD can take advantage of DST's extensive professional services if they are looking for implementation services, as well as ongoing solution support and evolution.

- DST's Value Management Practice helps financial services, insurance, and healthcare payer clients develop process prioritization road maps, governance policies, metrics continuums and business process competency centers to sustain their BPM programs.

Cautions

- AWD has weaker capabilities in social interaction, collaboration, CEP and advanced analytics. Adapters for Twitter, Facebook and a few other social media sites constitute its "social" support.

- AWD's configuration-model-driven authoring environment passes values to tables that drive its Java and Java Platform, Enterprise Edition (Java EE) architecture. This architecture limits dynamic behavior. Dynamism is limited to options that are planned in at design time to be exposed in runtime. The authoring environment's primitives can be extended using its software development kit or by invoking an external component via a Web services call.

- The authoring environment uses a unique notation, which consists of a subset of BPMN plus unique metadata extensions to support runtime model execution. This authoring environment does not include swim lanes, and the organizational model is supported in a separate environment.

IBM

IBM's acquisition of Lombardi Software in 2009 was the key factor in its move into the top tier of the iBPMS market. Lombardi's model-based Teamworks product, now integrated with numerous other IBM (www.ibm.com) products, brought the ease of development and agility that was missing in previous IBM BPM offerings. IBM's Smarter Process initiative, a combination of product and marketing improvements first introduced in 2013, helped push IBM to the forefront of the Visionaries axis in Gartner's Magic Quadrant chart. This review applies to IBM Business Process Manager v8.5, Blueworks Live, Operational Decision Manager (ODM) v8.5, Business Monitor, FileNet Content Manager, Analytical Decision Management, Cognos Real-time Monitoring and Integration Bus.

Strengths

- Customers can implement a wide range of applications using the same product family. IBM is the only iBPMS vendor that supports a choice between a pure-play, model-based approach (Business Process Manager Standard Edition) and a middleware-centric, integration "stack" approach (Business Process Manager Advanced Edition).

- Blueworks Live and Business Process Manager's design, development, governance and administrative features are broad and deep. Process Designer supports integrated analysis, simulation and testing. Process Center provides extensive version control with collaboration and dependency management. Unique "Process Coach" UIs guide end users through unfamiliar or complex runtime tasks.

- ODM combines a first-rate business rule facility, obtained as part of IBM's Ilog acquisition, with CEP features from IBM's WebSphere Business Events. IBM Business Process Manager also leverages an array of IBM Business Activity Monitoring (BAM) and analytic products, some provided by the IBM Cognos Business Intelligence and the IBM SPSS teams.

- IBM products are fairly open, which enables developers to mix and match IBM products with software from other vendors. IBM supports most industry standards relevant to BPM, including BPMN 2.0, CMIS, PMML, WS-*, JSR-286, JMS and JAX-WS.

Cautions

- IBM BPM solutions are relatively hard to configure because most applications require combining many different products. Migrations from older products, such as Lombardi Teamworks, WebSphere Lombardi Edition and WebSphere Process Server, have typically not been easy.

- IBM products overlap in many areas, adding complexity and cost to user infrastructures. Multiple products provide content management, business rule processing, BAM, portal, workflow/orchestration, alerting and other capabilities.

- IBM does not have an automated business process discovery (ABPD) tool for discovering processes in deployed applications. Developers use Blueworks Live or Process Designer to manually develop process models or import externally developed models.

- IBM Business Process Manager is not competitive in most low-end to midsize projects because its license and maintenance prices are typically higher than average.

Kofax

Kofax (www.kofax.com) entered the iBPMS market via the acquisition of Singularity in 2011, and added further intelligence to the product via the acquisitions of Altosoft and Kapow Technologies during 2013.[2][3] Our rating of Kofax is based on TotalAgility v6.2. TotalAgility v7 was released on 9 October 2013.

Strengths

- TotalAgility is a .NET-centric product, available on-premises and via bpmPaaS. It also has integration with SharePoint 2013 online, allowing tighter integration to other online Microsoft applications.

- An unusual differentiator for TotalAgility is the concept of "process skins" — a way of making a common process appear customized to an individual audience, supporting specific requirements yet based on the same underlying process.

- Recognizing that many clients will have more than one content management system (CMS), Kofax provides connectors to a large number of well-known CMSs, and is neutral with regard to which content repository can be used.

Cautions

- Customers find that TotalAgility performs well in stand-alone process situations, but that integration (particularly with legacy systems) can sometimes be complex and require professional services support. Although Kofax now offers support and services around the world, skills are not equally mature in all regions.

- Although TotalAgility includes basic simulation, its optimization capability is limited to predicting when a process will be completed, rather than providing suggestions for alternative paths for process completion.

- Customers find that, although Kofax offers flexible licensing, this can make it hard to understand and predict what the product will cost.

Newgen Software Technologies

Newgen Software Technologies (www.newgensoft.com) has a strong focus on document-centric processes, but has recently evolved to add iBPMS capabilities. Newgen iBPS (with v10 launched in April 2013) is composed of OmniDocs, OmniFlow and its mobile capture offering, ZapIn. The suite uses some third-party components such as EsperTech's CEP engine, Jaspersoft for advanced analytics, and the Drools open-source rule engine as its business rule management system (BRMS).

Strengths

- Newgen's iBPS provides BPMN 2.0-compliant XML metadata that is interpreted at runtime. This can support the full range of process styles from straight-through processes to unstructured ones.

- Newgen is doing a good job of addressing newer requirements regarding mobile interactions with processes, allowing both process initiation and process participation from mobile devices (native iOS and Android apps are available). The UI is also available via an HTML5 responsive Web interface, and there is also a voice-enabled mobile application.

- Newgen's very scalable solution has seen several large deployments. It offers tight integration with the company's own ECM and customer communication management suites, as well as adapters for Microsoft SharePoint and other mainstream ECM offerings.

- Newgen supports the rapid creation of a master process with multiple variants (for example, in departmental approval workflows, multiple types of approvals use the same main process).

Cautions

- Most customers are using Newgen's products in content- and document-centric processes, such as new client onboarding and simple case-style processes. Examples of their use in more-advanced scenarios that require CEP or sophisticated use of rules are infrequent.

- Newgen's products are still somewhat less business-user-friendly than other offerings, and customers often need to rely on professional services from Newgen or its partners. Where partners are used, the depth of knowledge and expertise is not always consistent.

- Newgen is only gradually moving out of its core markets into other countries, which could prove a challenge in the short term as it grows its partner base.

OpenText

OpenText (www.opentext.com) focuses on the ECM, BPM and B2B markets. The following analysis is based on Cordys Business Operations Platform (BOP) 4.3, which OpenText acquired in August 2013,[4] and now calls OpenText Cordys.

Strengths

- OpenText Cordys is one of the few cloud-native iBPMS offerings, and can also be deployed on-premises. OpenText has declared that Cordys is its strategic platform for cloud, BPM and case management.

- OpenText Cordys helps developers construct heavy-duty process applications via a high-level programming model. Combined with its multitenant cloud and HTML5 capabilities, this makes the platform suitable for application composition by IT organizations and OEM partners.

- The integrated ABPD tool (the open-source ProM tool) makes it easy to understand existing processes using graphical outputs and interactive animations, such as bottleneck analysis to help users identify potential areas of improvement.

- "Responsive UX" is a separately available HTML5/CSS user interface that unifies the Inbox and work item lists across OpenText's three BPMS products (OpenText Cordys, MBPM and G360).

Cautions

- OpenText's vision and capabilities for OpenText Cordys are focused on helping developers accelerate time to solution, and are less appropriate for line-of-business managers who are

looking to dynamically optimize business outcomes and adjust strategic objectives in response to unexpected, volatile business triggers.

- Although OpenText says it intends to build new and port its existing portfolios of 100 Smart Process Applications to OpenText Cordys, at present these applications are built on different BPM platforms (OpenText Cordys, G360 and MBPM), adding complexity to building and maintaining process-centric solutions.

- OpenText Cordys has basic BAM and BI capabilities, but enhanced process intelligence and analytics capabilities for iBPMS require the purchase of a separate, add-on product called OpenText Process Intelligence.

- Cordys is the third BPMS/iBPMS acquired by OpenText since 2011, and lukewarm postacquisition growth from its two prior BPMS-related acquisitions raises similar concerns about OpenText's ability to reinvigorate its growth in BPMS and iBPMS with Cordys.[5]

Oracle

The Oracle Business Process Management (BPM) Suite is a core component of the Oracle Fusion Middleware (OFM) stack. Oracle (www.oracle.com) addresses multiple usage scenarios with Oracle BPM Suite, including the development of process-centric applications, application modernization, continuous process improvement, business transformation, guided procedures, collaborative decisioning, multichannel customer experience management, and case and content management. This analysis pertains to Oracle BPM Suite 11g.

Strengths

- Oracle has delivered an integrated and agile iBPMS and process accelerators that serve well as a process platform for Oracle Fusion Applications, as well as for BPM projects involving structured, ad hoc, "smart" processes and adaptive case management.

- Oracle BPM Suite 11g includes social and native mobile capabilities. It also supports BAM, complex events, business rules, social analytics and real-time optimization capabilities to support intelligent processes.

- Mobile, social and collaborative interactions orchestrated by the BPM engine are stored as instance data that is available through common metadata services for other commercial operational intelligence applications and big data initiatives.

- Two developments suggest that Oracle's BPM strategy may be directed at a broader audience outside of its packaged applications than it used to be. With the restructuring of Oracle's middleware product organization, the BPM group and the BI group now report to the same manager, suggesting a renewed emphasis on IBO. A combined BI/BPM team is now focusing on selling BPM to business buyers for business process improvement and transformation.

Cautions

- Clients that Gartner has spoken with are currently only making limited use of the intelligence capabilities (for example, simple simulation). They are not using the full set of iBPMS features.

- The Oracle BPM Suite is not available as bpmPaaS.

- Although Oracle has made great strides in establishing alliances with more than 200 consulting and system integration (C&SI) providers, customers still report difficulty in finding consultants with in-depth expertise to configure and tune complex iBPMS deployments.

Pegasystems

Pegasystems (www.pega.com) is the largest, best-known and fastest-growing major pure-play iBPMS vendor. Its offerings are optimized for high-end iBPMS projects. It emphasized business rule processing, direct model-driven development and predictive analytics well before most of its competitors, although other iBPMS vendors now also focus on these capabilities. Pegasystems continues to differentiate by its emphasis on customer process management, including contact centers and other aspects of customer engagement. This analysis is based on Pega v7.

Strengths

- Pegasystems' primary strength is its unified architecture. It combines process flow definitions, rule processing, data handling, cross-platform UIs (including mobile), predictive analytics, BAM, content management, case management, application integration and other functions in one model-based development and runtime architecture.

- Pegasystems pioneered a unique, business-centric design and development approach. Its Directly Capture Objectives methodology baked into its software does much to ensure collaboration between business and IT people, and establish governance rights over solution adaptability.

- Pegasystems has increased its pace of product enhancements, recently addressing predictive analytics, CEP, cloud, case management, and social and mobile computing.

- Pega supports large-scale deployments through efficient execution (compiled Java code), 24/7 product support, and enterprise-level availability, manageability and security.

Cautions

- Its methodology and programming model is powerful but unique. Customers must learn a new development paradigm, which involves educating, as well as changing the roles of business people, analysts and IT staff. It is sometimes difficult to find people with Pega skills.

- Pega's social support lags behind some competitors.

- Clients are discouraged from trying to integrate software tools from other vendors with Pega because that approach undermines the value of Pega's unified architecture. Pegasystems does

offer standard interfaces that enable it to coexist with third-party tools that overlap Pega functionality in areas such as rule processing, content management, portal and predictive analytics. However, configurations that have duplicate functionality in these areas don't leverage the investments in applications and training for the third-party tools because new applications leverage the corresponding Pega functions through its model-driven development paradigm. Pegasystems also has many off-the-shelf integration adapters for third-party business applications.

- Pegasystems is not competitive in most low-end and midsize projects because of its high prices, high-end functionality and a corporate strategy aimed primarily at large accounts.

PNMsoft

The iBPMS offering by PNMsoft (www.pnmsoft.com) is PNMsoft Sequence Kinetics, which is offered frequently via SaaS licensing and cloud deployment.

Strengths

- The declarative architecture and HotChange capability within Sequence enables rapid yet audited changes to be made to in-flight processes, which can enable flexibility in long-running processes.

- The underlying process engine has recently been enhanced, and uses in-memory processing to enable good performance.

- PNMsoft offers a wide range of pricing and licensing options (including per-process, per-user and enterprise licensing options), although subscription-based pricing is now the most prevalent.

- PNMsoft is a Microsoft partner, and is in the Business-Critical SharePoint program. Good integration with offerings such as Microsoft CRM helps drive adoption in customer-centric processes.

Cautions

- Although Sequence has matured well in recent years, capabilities such as goal orientation and more advanced business rules are missing.

- PNMsoft is growing from a relatively small base, and will depend on partners developing good skills to support this growth.

- The approach to mobile devices is currently limited to online use, making it of limited use in a disconnected environment, with no direct use of native mobile features such as a device's camera.

Software AG

Software AG (www.softwareag.com) is a "stack" (integration middleware) vendor with a longtime emphasis on BPM. This analysis applies to webMethods BPMS v.9, Aris Suite v.9.1, Process Intelligence v.9, AgileApps Live v.9 and JackBe Presto v.3.6.

Strengths

- Software AG offers first-rate middleware and active analytics technology, derived from its established webMethods integration products and its recent acquisitions of Terracotta (in-memory data grid), Apama (CEP), my-Channels (MOM), Metismo (mobile computing), JackBe (visual analytics), LongJump (cloud computing), and others.

- webMethods BPMS is based on a scalable and efficient, event-driven architecture. Virtually all runtime components are connected to a common message bus, and the BPMS supports OSGI. Adapters are available to a wide range of third-party platforms and packaged applications, and BPMS supports most industry connectivity standards.

- It offers high-quality enterprise architecture (Alfabet and Aris Suite), process discovery and optimization (PPM), and BAM tools (Optimize and Presto).

- Software AG has low business risk. It has more than 1,500 BPMS customers (and more than 8,000 total customers), is profitable, and had about $1.44 billion in 2012 revenue (more than many competitors in the iBPMS market).

Cautions

- Software AG acquired numerous software companies during 2012 and 2013. It is only part of the way through an immense set of integration projects, and will need to carefully manage the assimilation of these companies.

- webMethods BPMS projects tend to have long development cycles because of their emphasis on systematic development. Most tools are primarily oriented toward IT buyers and developers.

- Software AG's track record for systematic integration projects is strong, but it has relatively little experience in lightweight, opportunistic applications.

- Although it has numerous relationships with third-party service providers, the commitment from many of these partners is not particularly deep.

Tibco Software

Tibco Software (www.tibco.com) addresses the iBPMS market from its position as a leading middleware "stack" vendor. The workflow and process orchestration capabilities of its iBPMS originally came from its acquisition of Staffware in 2004. This analysis refers to Tibco ActiveMatrix (AMX) BPM 2.1, AMX BPM Spotfire 5.5, BusinessEvents 5.1, AMX BusinessWorks 5.11, tibbr 4.1 and Nimbus 9.1.

Strengths

- Tibco offers first-rate real-time decision management and analytics, including process intelligence BAM (in AMX BPM), data discovery and predictive analytics (Spotfire and R), data intelligence BAM (via BusinessEvents Viewer and Spotfire), business rule processing (BusinessEvents), two CEP platforms (BusinessEvents and StreamBase), social-computing-based notification (tibbr), and other features.

- Tibco is a leader in application integration, enterprise service bus (ESB) technology and other middleware. AMX BusinessWorks, Enterprise Message Service and related products support all important styles of application integration and provide SOA and integration capabilities for AMX BPM. Tibco offers adapters to numerous packaged applications and all important industry connectivity standards.

- Tibco's separation of the organization model from the workflow and UI models is a competitive differentiator that enhances work and resource management. For example, this enables analysis of workloads across processes, not just within one process.

- It offers alternative ways to implement sophisticated forms of event-driven BPM, leveraging combinations of business rules, CEP and AMX BPM process orchestration.

Cautions

- The authoring (development) environment is best suited for systematic, IT-centric development projects. Business people are typically involved in AMX BPM projects less directly than in pure-play BPM projects (however, projects that leverage Tibco Nimbus tend to have considerable business participation).

- AMX BPM is newer and has fewer customers than many other parts of the Tibco portfolio. Some customers of Tibco's older BPMS (iProcess) are happy and have not migrated to AMX BPM.

- Tibco sells a high functionality product set at premium prices. It is generally not a great fit for small, one-shot projects or routine BPM applications that do not require analytics or substantial event processing.

- Tibco does not have an ABPD tool for discovering processes in deployed applications. Developers can use Spotfire or build shadow process models in Business Studio to monitor established processes.

Vitria

Vitria (www.vitria.com) has a long record of innovation. It offers a blend of pure-play BPM, middleware stack and analytics capabilities focused directly on the concept of IBO. This report applies to Vitria Operational Intelligence (OI) v.4.0.

Strengths

- Vitria enables a wide range of monitoring, alerting and adaptive decision-making applications that use a mix of BAM, CEP, process orchestration, business rules and predictive analytics. It has prebuilt operational intelligence applications and a process tracking component for real-time process monitoring. It also offers a process discovery tool and a unique KPI Builder tool that generates BAM queries and dashboards.

- OI's powerful model-driven architecture enables the rapid development of simple or highly sophisticated applications. Business analysts and power users can participate in solution development because the authoring tools are easy to use.

- The product is capable of very high-volume applications because of its scalable, grid-based architecture that leverages parallel processing principles, similar to MapReduce.

- Vitria tools support process discovery for processes that are already in operation, regardless of whether they are orchestrated by a software tool. OI also provides its own workflow and process orchestration for problem resolution processes and for standard business processes.

Cautions

- Vitria is a small vendor with limited resources. Its investments in advanced technology consume much of its energy, with relatively few resources devoted to marketing and sales.

- Vitria supports all of the feature categories of an iBPMS, but its cloud and social computing capabilities are somewhat limited.

- Vitria has a small field technical support and consulting staff outside the U.S., China, Japan, Spain, the U.K. and Brazil. It also has relatively limited support from third-party service partners trained on Vitria OI.

- Projects that require extensive content management, folder-based case management or organizational modeling should acquire them from another vendor and integrate them with OI, because Vitria does not supply them.

Whitestein Technologies

The Whitestein Technologies (www.whitestein.com) iBPMS, known as the Living Systems Process Suite (LSPS), specializes in handling self-adapting goal-directed processes. This analysis is based on Whitestein LSPS v.2.6.

Strengths

- LSPS uses a unique extended BPMN modeling methodology, with "goals" as the central semantic construct. Situational information (for example, "given knowledge K and event E, select best action A to attain goal G") is defined in the process model and may be altered dynamically during process execution. The runtime engine uses this information to determine the flow to execute. The approach is meant for processes that need a high degree of agility and

intelligence (such as case management). It also supports BPMN modeling for processes that don't need much agility or intelligence.

- LSPS uses multilevel modeling, separating data, activity flow and organization models. This allows models to be easily reused and associated across domains. Similarly, goal models can be linked into a hierarchy, recognizing that processes don't live in isolation.

- BAM data collection, KPI creation and visualization are strong and extensible, enabling in-flight impact analysis to locate process bottlenecks and inefficiencies, and determine how a process can be improved. Reporting, although basic in functionality, is easy to configure out of the box.

- LSPS is designed to be embedded into process applications, both in its architectural modularity and in its licensing and pricing. Partners use LSPS to power their solutions as an OEM.

Cautions

- Under the modeling layers, LSPS is a Java EE, Eclipse-based environment that is most appropriate for programmers. Its expression language is very technically oriented. Business role participation is appropriate only for goal modeling and BPMN modeling.

- LSPS is still a new product, and has less out-of-the-box functionality in the following areas than other iBPMS products analyzed in this report: reporting (based on BIRT), registry/repository and social interactions/social media.

- Whitestein is a small company that is growing rapidly, predominantly by embedding LSPS into the applications offered by application and C&SI partners. Organizations that want to purchase LSPS directly from Whitestein for custom application development may find that Whitestein's support resources are limited at present.

- Whitestein has a shortage of best-practice documentation to guide customers in designing and implementing advanced, case-centric solutions in LSPS.

Vendors Added and Dropped

We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or MarketScope may change over time. A vendor's appearance in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. It may be a reflection of a change in the market and, therefore, changed evaluation criteria, or of a change of focus by that vendor.

Added

- Kofax

- Newgen Software Technologies

Dropped

- Cordys is no longer an independent vendor; it was acquired by OpenText in August 2013. OpenText now promotes the Cordys offering as its iBPMS candidate. (See the OpenText section for our analysis.)

Inclusion and Exclusion Criteria

To be included in this Magic Quadrant, we used these criteria:

Market Participation — The vendor sells an iBPMS, which can be used to address buyers' needs for intelligent business operations (see "The Trend Toward Intelligent Business Operations" and "Use Intelligent Business Operations to Create Business Advantage"), as well as to address the four main usage scenarios (see "Market Update: Match BPMS Vendors to Your Usage Scenarios") that drive buyers to invest in BPM platforms rather than alternative forms of platform infrastructure. These scenarios cover continuous process improvement, implementation of a company- or industry-specific process solution, support for a process transformation initiative, or support for a process-based SOA redesign. The vendor's iBPMS offering is a general-purpose application infrastructure platform, and is marketed as a software product or a BPM platform as a service (bpmPaaS) that supports business process improvement (see "MarketScope for Business Process Management Platform as a Service" and "Use the BPM Sweet Spot Framework to Identify the BPM Technology You Need"). It is not a specialized solution for horizontal processes (such as call center operations), and is not specialized for a single vertical industry (such as insurance).

The product is offered to end-user buyers as a standard commercial software product — not as private intellectual property (IP) that comes out of a consultant's or system integrators' private IP library — and is delivered in a professional services engagement. This Magic Quadrant covers the worldwide iBPMS market — if a vendor only supports one or more regional market but is not worldwide, we highlight where they are currently focused to help with the decision-making process.

Market Traction and Momentum — The vendor is one of the largest 14 providers in the iBPMS/ BPMS market based on Gartner's estimates of 2012 vendor revenue (Gartner's data for this market combines BPMS and iBPMS products). The product must regularly compete against offerings from other vendors represented in this Magic Quadrant.

Business Capabilities Relevant to Gartner Clients — The vendor has at least 10 paying customers from distinctly different companies. The vendor is also able to provide at least three references that have deployed a recent version (one that became generally available after 1 January 2012) of its iBPMS product to support intelligent business operations. The referenced deployments should highlight how the organization is taking significant advantage of the major capabilities of the suite.

Technical Capabilities Relevant to Gartner Clients — The iBPMS supports the 10 main capabilities of an iBPMS: (1) process orchestration engine, (2) process component registry/ repository, (3) model-driven composition environment, (4) content interaction management, (5)

human interaction management, (6) system and data connectivity, (7) active analytics, (8) on-demand analytics, (9) business rule management, and (10) overall system management and administration — as described in "Selection Criteria Details for Intelligent Business Process Management Suites" and discussed in the iBPMS Capabilities section of this research.

Some functionality can be sourced from partners, although the iBPMS vendor must be the single point of contact for customer support and maintenance. We evaluated the product versions that were available for purchase or subscription by customers as of 31 July 2013.

Many other BPMS and iBPMS vendors exist beyond those included in this Magic Quadrant. However, most do not meet all of the above criteria; therefore, we have not included them in our detailed analysis. Market trends indicate that the size of a vendor is a consideration when selecting technologies (although size in itself is not a guarantee of technology survival, as recent merger and acquisition activity has shown). Some vendors meet all the criteria but are relatively new to the market and have limited revenue and few production customers.

The following vendors are not included in this research because they are small or do not meet other inclusion criteria. However, they are appropriate for certain situations and sometimes compete against the vendors that are covered in this Magic Quadrant:

- **AgilePoint** (www.agilepoint.com) is a privately owned vendor that provides an .NET-based iBPMS.

- **Appway** (www.appway.com) offers a vertically focused solution around client onboarding that is based on an iBPMS.

- **Fujitsu** (www.fujitsu.com) provides an iBPMS based on its OEM offering of Cordys BOP.

- **MatsSoft** (www.matssoft.co.uk) is a bpmPaaS that demonstrates many iBPMS capabilities.

- **Rage Frameworks** (www.rageframeworks.com) offers its LiveBPA platform that provides semantic intelligence around process automation. It is used mostly in embedded intelligent BPM scenarios.[6]

- **Red Hat** (www.redhat.com/solutions/it/business-process-management) offers an extensive set of open-source BPM, middleware, rule processing and CEP technologies.

- **SAP** (www.sap.com) offers SAP NetWeaver Process Orchestration, which can be regarded as an iBPMS suitable for deployment in and around SAP-centric environments.

- **XMPro** (www.xmpro.com) offers a comprehensive iBPMS that also delivers value in simpler scenarios.

Evaluation Criteria

Ability to Execute

Gartner analysts evaluate technology providers on the quality and effectiveness of their processes, systems and methods that enable their performance to be competitive, efficient and effective in the market; their capacity to positively affect their revenue, retention and reputation; and their capacity to deliver solutions to clients that create vendor-client win-win relationships.

We evaluate an vendor's Ability to Execute in the iBPMS market by using these criteria:

Product or Service — Core functionality required to meet the needs of intelligent business operations. The product should be responsive to changing conditions, not only reacting to changes, but to be predictive and context-aware, automating system responses and anticipating both system and human needs. This includes current product/service capabilities, quality, feature sets and the skills required, whether offered natively or through OEM agreements/partnerships as defined in the market definition. An iBPMS should be geared toward "citizen developers" allowing business users to be involved in frequent or ad hoc process change. It will have an emphasis on providing real-time insights supporting process improvement — not just one-time automation. The concept of a process should be a primary metadata object and unifying construct. The iBPMS must support all the high-level capabilities discussed in "Selection Criteria Details for Intelligent Business Process Management Suites" — in particular, enabling all process participants to benefit from added intelligence.

Overall Viability — Viability includes an assessment of the likely continuation of the product as an effective participant in the market and to support its installed base within the context of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood of the individual business unit to continue to invest in the product, as well as to continue offering the product and advance the state of the art within the organization's portfolio of products. This also includes analysis of the extent of the vendor's partner ecosystem (solutions, cloud services or system integrators).

Sales Execution/Pricing — The vendor's capabilities in all presales activities and the structure that supports them in the iBPMS market. This includes deal management, pricing and negotiation, presales support, proof of concepts, and the overall effectiveness of the sales channel.

Market Responsiveness/Record — The ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. We assess the vendor's track record in delivering new functions when the market needs them, and how the vendor differentiates itself from its competitors.

Marketing Execution — The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message in order to influence the iBPMS market, promote the brand and the business, increase awareness of the product, and establish a positive identification with the product/brand and the organization in the minds of buyers. This mind share can be driven by a combination of publicity, promotions, thought leadership, word of mouth, and sales activities. We

examine if the vendor targets the right buyer audience with the right messages, including case studies.

Customer Experience — We review the degree to which the product enables business and IT role collaboration and delivers a consistent and unified user experience throughout the process improvement life cycle and across all technologies contained within the suite. We focus particularly on the support for intelligence and innovation within business processes, not merely automation — the iBPMS must support a broad range of customer requirements. Visibility of the impact of activities, interactions and even external changes on a business process will be vital, as will be the ability to change the process rapidly. We examine the relationships, products and services/ programs that enable clients to be successful with the products evaluated, including the ways customers receive technical support, account support and process improvement support. We assess this criterion through qualitative interviews with vendor-provided reference customers, as well as feedback from Gartner clients.

Operations — The ability of the vendor to meet its goals and commitments. Factors include the quality of the organizational structure, including skills, experiences, programs, systems and other vehicles that enable the vendor to operate effectively and efficiently on an ongoing basis.

Table 1. Ability to Execute Evaluation Criteria

Criteria	Weight
Product or Service	High
Overall Viability	Medium
Sales Execution/Pricing	Medium
Market Responsiveness/Record	Medium
Marketing Execution	Medium
Customer Experience	High
Operations	Medium

Source: Gartner (March 2014)

Completeness of Vision

Gartner analysts evaluate technology providers on their ability to convincingly articulate logical statements about current and future market direction, innovation, customer needs, and competitive forces, as well as how they map to Gartner's analysis of market requirements. Ultimately, technology providers are assessed on their understanding of the ways that market forces can be exploited to create opportunities for vendors and clients.

We assess vendors' Completeness of Vision for the iBPMS market using these criteria:

Market Understanding — The ability of the technology provider to understand buyers' needs and translate these needs into iBPMS products and services. In particular, vendors must demonstrate an understanding of how business analysts and business users participate in intelligent business operations. Vendors that show the highest degree of vision listen to and understand buyers' wants and needs, and can shape or enhance those wants with their added vision (see "Use Intelligent Business Operations to Create Business Advantage" and "Selection Criteria Details for Intelligent Business Process Management Suites").

Marketing Strategy — A clear, differentiated set of messages consistently communicated throughout the organization and externalized through all media, including the website, advertising, customer councils and similar programs, positioning statements and collateral, conferences, and press interviews. As a growing requirement, vendors must highlight IBO and explain what they do differently in IBO scenarios, as well as how they support mainstream business process improvement.

Sales Strategy — The strategy for selling the product using the appropriate network of direct and indirect sales, marketing, service, and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy — A vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to current and future requirements. The vendor's product strategy must include all current iBPMS capabilities and future enhancements. Moreover, the vendor's road map should aim to improve how business users consume the product, including process/business agility and time to insight.

Business Model — The soundness and logic of a technology provider's underlying business proposition as a commercial entity. This is about providing an iBPMS product rather than delivering capability via a professional services engagement, which ensures that the product is commercially viable. The vendor must provide an iBPMS product platform, either as an on-premises commercial platform product and/or via a platform as a service (PaaS) delivery model.

Vertical/Industry Strategy — The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual vertical market segments. The vendor should be particularly focused on industries where iBPMS can deliver real value. The vendor may be investing and building solution assets (process accelerators) in such verticals. In addition, the vendor should be growing an ecosystem of solution partners with vertical industry expertise.

Innovation — Consideration of unique approaches and innovations such as innovative marketing, partnering, licensing, pricing, product enhancements, standards development and community development.

Geographic Strategy — The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries, as appropriate for that geography and market.

Table 2. Completeness of Vision Evaluation Criteria

Evaluation Criteria	Weighting
Market Understanding	High
Marketing Strategy	High
Sales Strategy	Medium
Offering (Product) Strategy	High
Business Model	Medium
Vertical/Industry Strategy	Low
Innovation	High
Geographic Strategy	Low

Source: Gartner (March 2014)

Quadrant Descriptions

Leaders

Leaders demonstrate strong capability concerning the use of "intelligence" in a process context with customers that have shown innovative and successful processes in their organizations. Some of the Leaders' customers demonstrate combined usage of social, mobile, rule-based and event-based capabilities of an iBPMS. Customers' usage of cloud for production solutions is also indicative of Leaders. Their offerings demonstrate features that support business professionals, allowing them to participate more fully, and to collaborate in developing differentiating processes to rapidly take advantage of information in context that may have previously been difficult to reach. The flexible processes that have been developed allow customers to take advantage of changing business conditions, and respond to threats and regulatory changes quickly. Such changes may even be made "in-flight" during the running of an operating process, recognizing the occurrence of events that indicate evolving patterns that imply a change in process is needed. Leaders tend to be successful companies, and may have either developed their own iBPMS offering or successfully absorbed acquisitions to focus significantly on this market. Leaders sometimes provide highly sophisticated product sets that may require specific methodologies and in-depth professional services, or may be priced at the top end of the spectrum, making them hard to justify when the benefits of BPM are not well-understood.

Challengers

There are still no challengers in this market.

Visionaries

Visionaries demonstrate innovation from a business and/or technology perspective. They tend to have strategies that focus on a particularly demanding aspect of BPM, such as responsiveness to complex events, emphasis on specific types of business process, or goal orientation. Their offerings are generally less well-rounded than those of Leaders. Some Visionaries have made targeted acquisitions to bring in relevant technology, but have not yet fully integrated those capabilities to deliver a well-tuned iBPMS. Visionaries may be a good choice when you have a strong need for a particular scenario, or to cover processes that emphasis integration of devices into a business process. Vendors that rely on the heavy involvement of IT staff may be visionary in some respects, but fall short of being Leaders because of their limited support for the direct involvement of business people. On the downside, the smaller Visionary vendors have a fairly limited installed base, or their products and services are not widely used in more critical business processes. Visionaries may not always excel at getting their message across in a crowded market, and small private Visionaries are sometimes acquisition targets.

Niche Players

Niche Players tend to provide perfectly good technologies, but may have not yet seen significant traction across this market, or they may focus well in one or two vertical industry or geographic segments. These vendors may be specialists in their areas, and thus they may represent the optimum choice for some projects, as the vendors often offer specialized expertise, focused support practices, flexible terms and conditions, and a greater dedication to a particular market segment and its customers. We also regard vendors as Niche Players when they find it hard to enunciate their future plans, or have a muted marketing message that might emphasize simpler process automation rather than pushing at the boundaries of intelligent business operations. Acquisitions that support IBO may be very recent and yet to deliver proven value; and vendors' advanced iBPMS capabilities may be less strong, even though technically their offerings meet our inclusion criteria.

Context

Managing business processes effectively is a difficult challenge for today's business leaders, because many of the systems that are used within processes are rigid and difficult to change rapidly. It is even more important today for systems to be flexible and responsive, allowing process participants to intelligently respond to events (even those that are happening outside the process). The ability to provide more "joined up" insight around business processes by use of both greater analytics capabilities, combined with support for the people involved in processes allowing them to take advantage of this insight, is what differentiates today's iBPMS market from earlier BPMS technology markets. Today's business managers need to seek out new opportunities, model them ahead of time, and then quickly adapt processes in order to innovate and deliver dynamic and responsive experiences to process participants, regardless of whether those participants are inside or outside the organization.

The iBPMS market is the evolution of the BPMS market, but — as with previous evolutions — there are still a large number of other kinds of BPM products that address less comprehensive market needs. When an organization faces relatively slow rates of change, has very low BPM maturity, or is focusing mostly on document-centric process automation, an iBPMS product may be overly complex for the task.

An iBPMS supports business responsiveness — often at the "moment of truth" in a customer interaction. The need to change which task is performed can happen at the individual work-item level, at the aggregate level of groups of work items, and also at the global process design level. Parameterized models can enable dynamic adjustment to the process itself, so that any new work items go through a new execution path due to that parameter change. An example here might be a threshold that determines if a secondary approval for a work item is needed or not. Such changes may be predetermined at design time as a choice of runtime options that permit dynamic execution of alternatives depending of the parameter setting. However, ad hoc changes to processes may need to occur when the runtime behavior (often of a person) has not been planned at design time, and the most intelligent processes can also support this ad hoc dynamism. Analytics can help guide the process toward desired outcomes.

Gartner recommends that clients looking for an iBPMS consider their requirements carefully, and establish how intelligent their desired solution needs to be. Review "Selection Criteria Details for Intelligent Business Process Management Suites" to understand some of the leading capabilities and use those in conjunction with this document to work out the detailed requirements for your project. Use the Gartner research on IBO to gain greater understanding of the more detailed technical requirements needed for highly intelligent situations (see "Intelligent Business Operations to Create Business Advantage" and "The Trend Toward Intelligent Business Operations").

Market Overview

Vendors in this market have originated from several different sources, with "infrastructure stack" vendors adding relevant BPM functionality (often by acquisition), document- and content-centric vendors moving into the market by extending content workflows to include system integration and human workflows into processes, and newer innovators focusing more on developing solutions from business-oriented modeling techniques.

The most significant change in the 2014 Magic Quadrant is the maturity of iBPMS products compared with the previous edition of the Magic Quadrant published in 2012. The mobile, social, cloud and analytics features in iBPMSs are more capable and better integrated than they were in 2012. More companies are using iBPMSs to implement aspects of intelligent operations (also called "digital business") than in 2012. Forward-looking process owners also need to investigate the Internet of Things (see "Hype Cycle for the Internet of Things, 2013"), where various physical devices provide many data points (events) in near real time. Examples of "things" may include household and business premises lights, smart electric meters, smoke alarms, security cameras, mobile devices, tools, toys, remote patient monitoring nodes, vending machines, parking meters and hotel door locks. These may be integrated into a business process in order to ensure that the process can adjust to changing conditions as necessary. Process innovation can happen more

easily when such devices are orchestrated together with all other process participants. Several iBPMS vendors are starting to include this additional orchestration capability, but it is currently still a leading-edge scenario. The iBPMS market is attracting significant hyperbole, and has moved up to the peak of Gartner's BPM Hype Cycle in 2013.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"How Gartner Evaluates Vendors and Markets in Magic Quadrants and MarketScopes"

"BPM Reinvents Mobile Work"

"BPM Hype Cycle for Business Process Management, 2013"

"Hype Cycle for the Internet of Things, 2013"

"Analyze Your Process Styles to Ensure Technology Choices Lead to Improved Business Outcomes"

"The Case for Case Management Solutions"

"Market Update: Match BPMS Vendors to Your Usage Scenarios"

Acronym Key and Glossary Terms

ABPD	automated business process discovery
BAM	business activity monitoring
BIRT	Business Intelligence Reporting Tools
BPM	business process management
BPMN	Business Process Model and Notation
BPMS	BPM suite
BRMS	business rule management system
CEP	complex-event processing
CMIS	content management interoperability services
CMS	content management system
COTS	commercial off-the-shelf
CSS	Cascading Style Sheets
ECM	enterprise content management
IBO	intelligent business operations
iBPMS	intelligent BPMS
JDBC	Java Database Connectivity
JMS	Java Message Service
MOM	message-oriented middleware
ODBC	Open Database Connectivity
OSGI	Open Services Gateway Initiative
PMML	Predictive Model Markup Language
UI	user interface
WSDL	Web Services Description Language

Evidence

[1] See "Market Share: All Software Markets, Worldwide, 2012."

[2] "Kofax Acquires Altosoft, a Leading Developer of Business Development and Analytics Software," Kofax, 1 March 2013.

[3] "Kofax Acquires Kapow Technologies, A Leading Data Integration Software Provider," Kofax, 31 July 2013.

[4] See "Cordys Deal Further Complicates OpenText's BPM Vision and Product Plans."

[5] Between 2011 and 2012, Gartner estimates that OpenText's combined BPMS/iBPMS revenue for Metastorm and Global 360 (OpenText's prior BPMS acquisitions) declined by 15%. See "Market Share: All Software Markets, Worldwide, 2012."

[6] See "Cool Vendors in Business Process Management, 2013."

Note 1 BPM-Enabling Technologies

These technologies range from simple process mapping tools, workflow engines, and business rule management systems (BRMSs) all the way through to BPM platforms such as bpmPaaS, BPMS and iBPMS. There are several BPMS products have not as yet added the extra "intelligence"-oriented features of an iBPMS. There are also BPM platforms that are not as complete as BPMSs that are suitable for simpler workflow and process orchestration applications. (We address these offerings in other Gartner research; they are not included in this report (see "MarketScope for Business Process Management Platform as a Service" and "Market Snapshot: Business Process Management Suites, Worldwide, 2013").

Note 2 IBO

Any business operation that employs any kind of BPM flow management technology (workflow, process orchestration, case management or other "state management and orchestration" engine) to coordinate the sequence of activities in one or more of its processes at runtime can be regarded as an "intelligent" business operation.

However, such flow management is not necessarily *required* for intelligent business operations. A business operation might be intelligent because it employs rules or analytics at runtime (such as rule engine, BAM, CEP, predictive analytics, spreadsheet, BI reporting tool and prescriptive analytics) without any flow management. However, a very intelligent process uses a combination of flow management and rules and analytics.

Intelligent business operations is a style of work in which one or more kinds of technologies for intelligence are integrated into the transactional systems and physical activities that run the business. Operational intelligence includes monitoring and alerting tools that enhance situation awareness, decision management and prescriptive analytics tools that enable better decisions, and workflow and process orchestration engines that coordinate more flexible and efficient processes.

Note 3 Case Study Example — Adding Intelligence to an Industry-Specific Process

A large bank uses an iBPMS to help automate and monitor key retail and corporate banking processes, including account opening, loan processing and trade processes. Together with the use of BAM dashboards that provide insight into the various processes, the solution uses predictive analytics to assist with capacity planning and forecasting in its branch operations, highlighting current processing load (including information from external systems) and mapping that to the anticipated incoming loads. Reports are then generated together with alerts to help maintain desired SLAs and highlight bottlenecks and inefficient use of resources.

Note 4 Case Study Example — Supporting a Process-Based SOA Design

An industrial company used an iBPMS to build a services platform with multiple components, including machine-to-machine (M2M) communication, service management, reporting and analytics, and complex workflows that are triggered when various events happen. For example, if a piece of machinery overheats, it might be necessary to send an engineer to the site, order new components or collect additional data. The company orchestrates these various services, together with integration to a wide range of back-end systems, continually monitoring SLAs to ensure problem resolution. This helps the industrial company to move from selling a basic product to selling a full service solution around the product, thus enabling business transformation based on the iBPMS-based SOA redesign.

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor for the defined market. This includes current product/service capabilities, quality, feature sets, skills and so on, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability: Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue investing in the product, will continue offering the product and will advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all presales activities and the structure that supports them. This includes deal management, pricing and negotiation, presales support, and the overall effectiveness of the sales channel.

Market Responsiveness/Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional initiatives, thought leadership, word of mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements and so on.

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure, including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen to and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling products that uses the appropriate network of direct and indirect sales, marketing, service, and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.

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