



# Vendor Insight

## Vendor Capability Assessment

### BPM technology: Oracle

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This report assesses the capabilities of Oracle's BPM product offering (*Oracle BPM Suite 11gR1*), along with other complementary Oracle products, and also examines the partners, professional services, advice and other intellectual property that Oracle can offer customers exploring Business Process Management (BPM) implementations.

This Vendor Capability Assessment (VCA) report forms part of a series of reports from MWD which assess vendor offerings in the area of BPM technology – that is, technology-related capabilities which support organisations adopting BPM to design, develop, deploy, monitor and optimise partially- or wholly-automated business processes. For background on the analysis contained in this report, please refer to the accompanying Explanatory Notes document which is freely available on [www.mwdadvisors.com](http://www.mwdadvisors.com).

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#### Review this research in context

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## Summary

Although it was not often called out, one of the strongest technology elements that Oracle brought on board when it acquired BEA Systems in 2008 was BEA's BPM technology offering. In the release of *Oracle BPM Suite 11gR1*, the company has taken this former BPM jewel and combined it with a number of its existing BPM-related technologies to deliver an integrated suite which plays a strategic role in Oracle's continued Oracle Fusion Middleware market push, and also forms a keystone of the Oracle Fusion Applications development roadmap.

There are many ways in which the integration of the former BEA BPM technology (itself acquired when BEA bought BPMS specialist Fuego) with the rest of the existing Oracle technology stack could have gone wrong – but our assessment is that it's not too strong to say that in putting *Oracle BPM Suite 11gR1* together, Oracle has made a lot of smart decisions to take the best of its new and existing assets and combine them. The *Oracle BPM Suite* now represents a very strong proposition indeed.

Technologically, there are three advances at the core of this release:

- Support for the new BPMN 2.0 modelling standard (wisely, Oracle allows customers to decide themselves how much of the complexity of BPMN 2.0 will be accessible to different groups of users).
- Delivery of a unified runtime platform for execution of BPMN 2.0 processes, BPEL processes, human task implementations and business rules.
- The addition of a web-based process design and customisation environment called *Process Composer*, aimed at helping non-technical analysts and business managers participate in the improvement of processes once they're implemented using Oracle's technology.
- The ability for business administrators and end users to create their own dashboards, and the delivery of collaborative process work capabilities that integrate collaboration, social networking, portal and content management with core workflow functionality.

The company bundles a broad range of complementary technologies with the core of the BPM offering – including Business Rules, Business Activity Monitoring (BAM) and Enterprise Content Management (ECM), together with *WebCenter Suite* (which underpins the *BPM Suite*'s human facing interface and also provides collaboration facilities for analysts, process participants and administrators). It continues to provide strong functionality more or less throughout the entire BPM activity cycle – and where it isn't so strong (in process discovery and analysis), Oracle offers its *Business Process Analysis Suite* (or *BPA Suite* – which is based on a licensed version of IDS-Scheer's *ARIS Business Architect* product) as an option that customers can license.

*Studio*, the main design tool within *Oracle BPM Suite*, is also well-integrated with the design tools for the *Oracle SOA Suite* – bridging the gap between BPM and SOA in Oracle's technology portfolio, and providing a sophisticated integration environment for customers needing to carry out integration between business processes and external applications, systems and data sources. The end result is a highly capable BPM technology offering that also provides sophisticated integration options.

Beyond considering the *Oracle BPM Suite* and *BPA Suite* offerings, it's important to note that as a company with well over \$20 billion in annual revenues, Oracle offers an advanced BPM technology suite (primarily associated with specialist BPM vendors) whilst providing the supporting corporate infrastructure and muscle power of a large enterprise software company. It has a truly global footprint, with offices and staff in every region of the world. It has strong partnerships with a range of consulting providers large and small, and also offers its own proven and well-regarded consulting services and methodologies.

## Overview of offering

Oracle's BPM technology offering is centred on its *Oracle BPM Suite* product bundle. In the current *11gR1* release, this revolves primarily around technology re-engineered from a combination of technologies acquired from BEA (formerly known as *AquaLogic BPM*) and Oracle's *BPEL Process Manager* (acquired when Oracle bought Collaxa in 2005). To provide the broadest possible range of BPM-related functionality, the company also bundles its existing *Oracle Business Activity Monitoring* and *Oracle Business Rules*, *Oracle Universal Content Management (UCM) Suite*, and *Oracle WebCenter Suite* products into the *BPM Suite* offering.

In addition, Oracle offers the *Business Process Analysis (BPA) Suite*, which is an Oracle-badged version of IDS-Scheer's *ARIS Business Architect* toolset, designed primarily to aid customers with process discovery and requirements analysis. Oracle also offers a strong set of BPM training, planning and implementation services.

## Products and capabilities

### Key products

The bulk of this assessment focuses on the capabilities of *Oracle BPM Suite 11gR1*. This combines, in a single product:

- **Studio.** This is an integrated Oracle JDeveloper-based process design and development environment which offers process, organisation, and information model and user interface design and simulation functionality along with *Oracle Business Rules* definition.
- **Process Composer.** This is a web-based process design environment that's aimed at non-technical stakeholders (for example business analysts). Its role is to provide an environment that helps non-technical specialists participate in process improvement and collaboration with IT directly without having to use developer tools. *Process Composer* enables processes to be explored, changed and deployed – as long as changes to the underlying implementation are limited to implementation artefacts available in the process catalogue.
- **Unified Runtime.** New in *11g*, this platform utilises the Service Component Architecture (SCA) standard to provide a "pluggable" set of specialised runtime engines that are designed to execute BPMN processes, BPEL processes, human tasks, and business rules. The BPMN and BPEL execution engines share a common "process core" that provides one deployment and administration environment. The runtime can be deployed on the *Oracle WebLogic Server* or IBM's *WebSphere Application Server*, and also integrates with *Oracle Service Bus* for integration with back-end systems and applications.
- **Process Spaces.** Built on the *Oracle WebCenter Spaces* technology, this piece of the suite provides the foundation for three distinct types of 'spaces' that deliver the user experience for individual process participants, business analysts and administrators at runtime:
  - 'Modelling space' (designed as the 'home page' for analysts to quickly explore and tailor processes).
  - 'Process space' (which hosts worklists, task forms, controls to kick off process instances and delegate tasks, as well as real-time process monitoring graphs and charts). Process space is a role-based environment that supports the needs of supervisors and business administrators in addition to process participants.
  - 'Instance-specific space' (which groups together additional collaboration and content management tools which can be used in the context of a particular process instance).

The BPM widgets used in the Spaces are also available as WSRP-compliant portlets for customers using a different portal.

- **Enterprise Manager.** *Oracle BPM Suite 11gR1*, just like all other Oracle technologies, uses *Oracle Enterprise Manager (EM)* as its technical administration and monitoring tool. From within *EM*, administrators can monitor and manage the BPM engine and its components, together with deployed projects. *Enterprise Manager* can show administrators graphical views of instance metrics and aggregate metrics, and can help with runtime tracing.
- **Process Analytics.** This is an analytics *environment* based on a BPM-specific database star schema (set of OLAP cubes) that can be used as a target for collecting standard process metrics as well as process specific business indicators (modelled as part of process definition). *Process Analytics* also enables process participants to create their own dashboards on top of these cubes. *Process Analytics* is integrated with *Oracle Business Activity Monitoring (BAM)* for real-time event based dashboarding.

By purchasing Oracle's *BPM Suite*, customers will also gain access to the following:

- **Oracle Business Activity Monitoring (BAM).** This builds on the functionality delivered within the *Process Workspace* to provide a graphical environment for administrators and analysts to use to explore real-time process performance.
- **Oracle Business Rules.** This is a business rules definition tool, repository and runtime execution engine. With *Oracle Business Rules* in place alongside *Oracle BPM*, customers can design a clear separation between business rules and business processes, and drive independent change cycles for each. As of *BPM 11gR1*, the design environment for *Oracle Business Rules* is now an integrated part of *Studio*.
- **Oracle WebCenter Suite.** A limited-use license of *Oracle WebCenter Suite* is provided in *Oracle BPM Suite* for use as an underpinning for the *Process Spaces*. *Oracle WebCenter Suite* provides a core portal framework and a set of plug-in portal services that deliver collaborative workspace and content management functionality.
- **Oracle Universal Content Management Suite.** A limited-use license of the *Universal Content Management Suite*, bought into Oracle through its acquisition of *Stellent* in 2006. The *Oracle UCM Suite's* end-user functionality for Web content management, document management, digital asset management and records and retention management can be easily exposed through the *BPM Process Spaces* (see above) to enable documents managed within the *Oracle UCM Suite* to be associated with process instances and cases.

Lastly, customers can license other Oracle products to gain the broadest set of capabilities:

- **Oracle Business Process Analysis Suite.** Within *Oracle BPA Suite*, the *Business Process Architect* component enables process specialists to model high-level business context, strategies and requirements; create abstract BPMN-compliant process models and UML-compliant organisational and information models; and link all these together to provide multiple analytical and architecture perspectives. *Business Process Architect* also provides a degree of process simulation functionality. *Oracle BPA Suite's Business Process Publisher* enables you to render your models as HTML documents, and publish them to corporate intranet sites.
- **Oracle SOA Suite.** Oracle's *Enterprise Service Bus (ESB)* product is found here, which provides JDeveloper-based tooling to enable you to expose, manage and co-ordinate communications between existing systems, databases and applications exposed as services. With *Oracle BPM Suite 11g*, SOA assets (existing SOA services, bus instances, and so on) are easily discoverable and usable within Oracle BPM tools. Additionally, Oracle BPM processes can be published easily to *Oracle SOA Suite* with automatically-generated service interfaces.

### Coverage of the BPM activity cycle

Capability	Oracle BPA Suite	Studio	Unified Runtime	Workspace	Process Spaces	Oracle BAM	Oracle Business Rules	Oracle SOA Suite	Universal Content Mgmt. Suite	WebCenter Suite
Discovery & analysis	●	○			○					
Design & development		●					●			
Simulation		●								
Rules		●					●			
Integration & execution			●	●	●		●	●	●	●
Monitoring & optimisation					●	●				

**Key**

○ Product has partial coverage of this capability

● Product has full coverage of this capability

### Using the product(s)

#### Discovery and analysis

For organisations wanting to carry out in-depth process discovery, requirements analysis and business architecture exercises, Oracle advocates use of *Business Process Architect* and *Publisher* within the *BPA Suite*. This is licensed separately from the *Oracle BPM Suite*. These tools enable you to create a variety of analytical models to help you explore business process problems and transformation opportunities, and you can create abstract process models that you can export (and then import into the *BPM Studio*).

There are also limited process discovery and requirements analysis facilities provided within *Studio's* business analyst profile and also within *Process Composer*. The business analyst profile of *Studio* restricts the available functionality in *Studio* to abstract process modelling; users assigned this profile can view, create and edit models at a high level, but they can't edit implementation details or write code. *Process Composer* delivers this same level of functionality, but within a web-based editing and browsing environment.

#### Design and development

The business architect and developer profiles of *Studio* provide design and development capabilities. In the *Process Designer* perspective of *Studio*, you can model all the usual process element types – swimlanes, activities, gateways, timers, events, exceptions, and so on. In version *11gR1*, the *Process Designer* perspective supports BPMN 2.0 – and, very usefully, allows designers and developers to see only as much of the very extensive BPMN 2.0 symbol set as they want.

As before, in *Studio* it's straightforward for designers to declaratively specify KPIs for processes ('business indicators') and pinpoint 'measurement marks' within process models that act as data capture points – and have these drive performance data collection for use in the *Process Workspace*, *Oracle BAM* or *Process Analytics* environment (see *Monitoring and optimisation* below). You can define an arbitrary number of measurement marks in a process model, and they can be nested.

Organisational models are 'first class citizens' in *Oracle BPM Suite 11gR1*. That is to say, designers or business analysts can use *Studio*'s tools to define models based on external databases (LDAP directories or HR applications) that lay out relationships between roles and groups, skill levels present in groups, and so on – and, unusually, those models can actually be used to determine runtime processing. The runtime engine can refer to an organisational model to resolve work routing questions. Access to functionality and information through portals and spaces can be automatically determined by recourse to the same model.

In this version of *Oracle BPM Suite*, the 'plumbing' that formerly underpinned the tools (plumbing that was initially built by Fuego) has been replaced. Whereas user interfaces for tasks used to be bound up with business logic in 'BPM objects', a more standards-based approach that ties in with Oracle's general approach to software development is now employed – namely, use of the Oracle Application Development Framework (ADF), a technology layered on top industry standard Java Server Faces (JSF) – with definition of rich JSP-based task forms and other interfaces possible through easy-to-use graphical design tools.

A further important addition is the concept of Business Process Guides, which can also be specified in *Studio* without programming. Using point-and-click tools, you specify guided documentation that acts as a 'helper' for process participants at runtime as they work with tasks – highlighting what information needs to be gathered, the current state of progress through the process, and so on.

### Simulation

Simulation capabilities are currently provided both within *Studio* and from within *Business Process Architect* – though for customers using the *BPM Suite*, Oracle advocates that you use Oracle BPM's simulation tool (which, in any case, is more sophisticated than that provided by *Business Process Architect*). Within *Studio*, you can switch at any time from a design view to the simulation view, and set up and execute simulations of various types using easy-to-use configuration tools. You can select multiple processes within the current Project to simulate – if you do this, the simulation takes potential resource contention into account as it executes. Output of simulations can be viewed in HTML reports or exported to *Excel* for further analysis. Real data from production processes can be imported for simulations as well.

### Rules

Another change in *11gR1* is the retirement of Oracle BPM's inbuilt *Dynamic Business Rules* capability which is replaced by Oracle's more full-featured 'standalone' business rules engine, *Oracle Business Rules*, and is integrated much closer to the heart of the *Oracle BPM Suite*. Designers can now specify rulesets directly from within *Studio*, either using decision tables or the 'traditional' if-then-else format – and, importantly, those rules can be used pervasively through process applications (not just to determine process flow). For example, rules can be enlisted to validate data entry in task forms and other user interface elements; drive work assignment; define process and participant calendars; and bind processes to particular web services for back-end integration work dynamically at runtime to maximise system flexibility, reliability and availability. Business rules can also be authored from the web-based *Process Composer*.

### Integration

You have a choice of using the bundled *Oracle BPEL Process Manager* or *Oracle Service Bus (OSB)* for managing integration of Oracle BPM processes with existing resources.

This integration is principally provided by an automated importer for OSB services, which allows you to browse OSB instances and the services managed by those instances, then select services you want to use as External Components in a Business Catalog. OSB's support for a variety of communication protocols and message formats means that it can be responsible for technology-level integration of existing assets as homogeneous services; however semantic integration (making sure that message data types match those expected by BPM processes) is something you will have to deal with using specialised transformation tools in OSB. These tools allow you to specify XSLT transformations on XML messages, or call out to specialised transformation services for more complex requirements.

### Deployment and execution

Before deploying a new or changed process, there's a process tracing (debugging) facility in Oracle *Enterprise Manager* that works down to the level of individual activities and functions, and there's also a unit test automation capability (based on the open-source JUnit testing project). Multiple options are supported for deploying processes and moving them from development to test to production – the two most likely are Ant-based scripting, and use of *Oracle Enterprise Manager*. *Enterprise Manager* provides sophisticated deployment capabilities, especially in a clustered environment.

We've already highlighted the major change to Oracle's BPM runtime environment (the transition to a 'service oriented' model with plug-in engines for interpreting particular model types). On top of this, though, there are some other noteworthy features.

The first is that in the *11gR1* release, Oracle has integrated its process runtime with its event processing engine (*Oracle CEP*). Processes can act as both event sources (publishing events when certain thresholds are passed or states reached) and sinks (consuming events to kick off or progress process instances). Using this capability, you can build and deploy event-driven networks of processes which cater for highly dynamic business situations which require fast, sophisticated responses.

The second is that as well as being integrated with *Oracle WebCenter Suite's* collaboration capabilities, the *11gR1* BPM runtime environment is now integrated with the *Oracle Universal Content Management (UCM) Suite* – which means that case management scenarios which require tight linkages between document stores and process behaviours are straightforward to support. Creation or editing of content/documents can fire events which initiate processes or change the state of running processes, participants can retrieve and display UCM-managed documents in the context of process instances, and process tasks can generate documents for storage in the UCM environment.

### Monitoring and optimisation

In version *11gR1*, process administration (such as role mapping) capabilities are part of the Workspace interface (which is available either stand-alone or part of *Process Spaces*, where they're surfaced alongside process participant interfaces). Business administrators and end users can create their own dashboards from within the Workspace. Oracle BAM can also be launched from within the Workspace. Technical administration capabilities are delivered within *Oracle Enterprise Manager*. Under the covers, process monitoring data can be fed from the unified runtime environment to either or both of two separate databases: a *BAM* database (responsible for holding information for tracking individual instances in real-time) and a *Process Analytics* cube (responsible for holding information used in analysing historical activity).

### Supporting and managing change

In this new version of its BPM technology offering, Oracle has made a number of architectural changes that enable it to bring more complementary technologies into its picture – but at the same time create a very stable foundation. The result is an environment which goes a very long way to helping you minimise the costs associated with designing, deploying and changing processes deployed to its platform.

This version of the offering has leveraged the former *AquaLogic BPM Suite's* strong separation of concerns and heavy use of model-driven design, and built on that. This helps to make development (and change) simple and predictable. By and large, technical implementation details, information models, process models, task user interface definitions and business rules are kept clearly separated in the *Studio*. Moreover the key design model containers in *Oracle BPM Suite 11gR1* – the Project and the Business Catalog – help to ensure that model elements are specified in one and only one place.

There are solid capabilities which relate to change management too. Firstly, although version control (through any standard SCCS) works at the file level, the way that Oracle stores design artefacts means that most of the design artefacts in your process applications can be versioned independently of each other. Secondly, you can specify that only certain users or roles can deploy new processes or changed processes. You can also define publishing control workflows, which ensure that process publication always follows the same rules and includes the same reviews. Thirdly, the splitting of process provisioning into two tasks – publication and deployment – means that it's comparatively straightforward to stage rollout of new processes, and deploy them consistently in multiple locations in highly distributed organisations (or even across organisations). Lastly, there's support for versioning of deployed process models with the ability to "hot-deploy" revised process versions, so that any currently executing instances of the previous process version continue to run while new instances start with the new process version.

The manageability of the technology is also likely to be very good in large and/or complex deployment environments: there are a number of features to help minimise the cost and complexity of administration while also minimising downtime.

## Partners, templates and practices

### Partners

Oracle has a well-established partner programme that encompasses consulting providers and systems integrators, resellers and technology partners.

Oracle has a worldwide network of over 35,000 third-party system integrator consultants in 50 countries and 175 cities who specialise in Oracle Fusion Middleware. Oracle also manages a network of 5,000 Fusion Middleware ISV partners. In the context of its BPM technology offering, the company partners with Accenture, BearingPoint, Capgemini, CSC, Deloitte, EDS (its Agile Enterprise practice), HP (its SOA Practice) and Satyam.

### Specialised templates and practices

Through its Application Integration Architecture (AIA) initiative, Oracle provides a number of "Foundation Packs" which include pre-built integration code components and process templates. However today, these are built on top of Oracle's SOA Suite – they don't leverage OBPM. In addition, the company offers industry-specific training courses that include material on industry-specific best practices worldwide – in financial services, telecommunications and the public sector.

### Services

Oracle offers a range of consulting, education and support services that are specific to the Oracle BPM Suite and customers' BPM initiatives. Oracle Consulting assists customers with BPM Centers of Excellence, Discovery Workshops, Rapid Deployment Workshops, Upgrade, and product implementations.

Oracle University (Oracle's educational arm) has in-depth BPM training offerings for different types of users. These have expanded along with the enhancement of the application infrastructure platform to include a wide range of online courses and instructor-led courses. Oracle states that around 6,000 students per quarter are trained through instructor-led courses. Oracle also provides a dedicated training curriculum for its partners through its Partner Training group.

Oracle doesn't offer process outsourcing services, and doesn't currently offer hosted versions of its BPM tools or of BPM implementations built with the Oracle BPM Suite.

## Platforms and standards

### Platforms

The *Oracle BPM* runtime environments are all available on HP-UX, AIX, Windows Server 2003/2008, SuSE Linux, Red Hat Linux, Oracle Enterprise Linux, and Solaris. Oracle, DB2, Microsoft SQL Server and Sybase DBMSs are supported as runtime databases for the *BPM Server*.

The *Studio* is available on Windows XP, SuSE Linux, Red Hat Linux, and Oracle Enterprise Linux.

### Standards

Oracle's design philosophy in delivering its Fusion Middleware portfolio is based around three tenets: "open", "standards-based" and "hot-pluggable". BEA, from where much of the *Oracle BPM Suite* originates, was an equally ardent supporter of industry standards, and therefore it should be no surprise that the implementation of the Oracle BPM technology offering utilises many industry technology standards.

*Studio's* process design mode supports the BPMN 2.0 modelling notation, and it can import, export, deploy and integrate with BPEL-compliant process descriptions. The models themselves can be imported and exported via XPD 2.0.

The Oracle *BAM* and *Process Analytics* capabilities provided are both based on published SQL DBMS schemas, and run on industry-standard database servers. This means that using third-party analysis tools with runtime process performance data is quite straightforward.

User interfaces are implemented using JSP, HTML, XML and CSS.

Using *Oracle Service Bus (OSB)* for integration of existing applications, systems and data sources with *Oracle BPM* processes, you are encouraged to use common industry SOA standards for connecting existing resources with *Oracle BPM*. *OSB* promotes the use of XML for service-to-service message formats (and can execute translations using XSL and XSLT); SOAP and WSDL for service communication and interface publication; WS-Security; WS-ReliableMessaging and WS-Addressing.

The *BPM* unified runtime supports both JMX and SNMP systems monitoring standards, allowing you to plug popular third-party systems management suites into the *Oracle BPM* runtime platform.

Beyond the use of *Oracle Business Rules*, third-party rules engines supporting either Java or Web services APIs can be integrated into *Oracle BPM* process models.

## Pricing options

Oracle licenses the *BPM Suite* on a per-server (CPU) basis or a named-user basis; *BPA Suite* is licensed on a named-user basis. The company offers free full-functionality downloads of all its Oracle Fusion Middleware products and suites – including all elements of the *BPM* and *BPA Suites* – for evaluation purposes.

## Localisation

The *Oracle BPM Studio* design and development environment is available in English, Spanish and Chinese (both traditional and simplified).

Most visible aspects of *Oracle BPM* projects can be localised; 10 languages are supported out-of-the-box (including English, French, Spanish, German, Japanese, simplified Chinese and Korean). Localising the user interface elements of processes is carried out through *Studio's* main design environment: you don't have to resort to low-level configuration or manual coding.