



Oracle White Paper
August 2014

Deliver on Intelligent Business Process Management

With Oracle Business Process Management Suite 12c

Executive Summary

Digital businesses embrace technology to optimize business operations, fuel innovation, and ultimately increase profit margins and service levels. They design information systems that empower customers, partners, and employees to interact more efficiently and productively. A big part of this effort entails re-engineering business processes so that workers can avail themselves of current information to increase service levels and become more responsive, while reducing cost and risk. Change is inevitable and nimble organizations use intelligent business process management (BPM) systems to automate operations, make better decisions, exploit opportunities, and react to changes in the marketplace.

With the impact of new business paradigms that leverage mobile, social, and cloud technologies, a new approach is needed to bring enterprise applications into the modern age. This paper explains how to create “intelligent” business processes that automate operations and boost productivity. It describes the key capabilities of an intelligent BPM system and offers examples of how such systems improve business operations. The featured product is Oracle Business Process Management Suite 12c (Oracle BPM Suite 12c), a comprehensive solution for modeling, analyzing, executing, and optimizing business processes across divisions, systems, and applications.

Intelligent BPM systems use dynamic case management technology to analyze business processes, detect events, and guide people to respond accordingly. These systems help close process “gaps” with interconnected, adaptive cases and workflows, and streamline collaboration by facilitating real-time decision management.

Introducing Intelligent Business Process Management

Versatile business processes are key for a digital business and ultimately for automating work. To maximize the value of BPM initiatives, these processes must be able to drive and coordinate activity across many teams, departments, and information systems. They facilitate collaboration by seamlessly combining on-premises and cloud-based information and infusing actionable analytics into process workflows. Innovative companies use intelligent BPM systems to capture insight from people as well as to trigger actions from system events. They can integrate information and insight from other processes and dynamically adjust and optimize those processes. Intelligent BPM systems interface with business-activity-monitoring tools to bolster process intelligence, simplify process monitoring, and alert users to changes in key performance indicators (KPIs) and key risk indicators (KRIs). Users can monitor these processes and subprocesses through real-time dashboards.

Many intelligent business processes are tied to strategic outcomes such as onboarding customers, processing invoices, dispatching field service personnel, and resolving disputes, as well as other types of paperless customer service initiatives. Popular examples include:

- Improving complex, decision-centric processes so that knowledge workers can operate more efficiently
- Orchestrating activities among enterprise applications to facilitate the exchange of information and ideas
- Designing customer experiences that encompass multiple channels to make it easier for customers to connect to valuable products and services
- Enabling mobility for self-service processes to give users more flexibility and control
- Combining automated processes with analytics systems to deliver new types of digital services such as predictive maintenance of equipment and cardiac monitoring of chronic-care patients
- Outsourcing and configuring managed services across public and private clouds to simplify IT operations

Intelligent BPM tools include a process orchestration engine to coordinate human and machine interactions and to create applications that can respond to both human- and system-generated events. The engine manages these processes, coordinates input from social networks, adjusts priorities, gathers content from on-premises and cloud-based systems, and schedules future processes and activities. Most intelligent BPM tools also let users create portals and other types of rich user interfaces. They generally have a graphical workbench that empowers business users to structure processes that include input from tasks, content, and other resources. Intelligent BPM systems often integrate with an enterprise content management system to pull in textual information, documents, videos, phone logs, and other types of structured and unstructured information.

When constructing intelligent business processes it is helpful to consider the three major components of a digital business: people, processes, and information. *People* instigate processes and feed the results to other people involved in those processes. *Processes* are the engine of a digital business—the drivers of

activities, events, and workflows. *Information* is content, ideally received in the context of day-to-day activities. Information arises from on-premises and cloud-based information systems, including information from enterprise systems of record and systems of engagement. Intelligent BPM systems tie these components together to enable people to make dynamic, proactive, and informed decisions.

The Need for Adaptive Business Processes

While traditional BPM projects automate structured process flows, an intelligent BPM system can also automate unstructured, unpredictable, document-intensive process flows that incorporate input from people and information systems throughout the organization. An intelligent BPM system can model flexible processes and subprocesses that can be executed by business events and/or insights. Often called “cases,” the flow of activities in these processes is not predetermined because each case can branch off in unpredictable directions. The activities may be unique from one case to the next and require a combination of knowledge worker decisions, policies captured as rules, and both structured and unstructured data. Thus, the business process must often accommodate lots of variances. Typically, these processes are modeled as a set of milestones and recommended activities. Some of these milestones can come from humans completing designated tasks, such as approving an invoice. Others might come from a predictive analytics engine that models outcomes based on similar cases. An intelligent BPM system lets knowledge workers add documents and tasks to a process at runtime, such as uploading photos, making calendar entries, or messaging an associate in another department.

Case information often comes from documents rather than database fields and forms. These documents must be indexed and managed even after a case is closed, which necessitates tight integration between the case management process and the underlying content management repository. Some cases require an influx of documents on the front end and content management on the back end. This permits caseworkers to check out documents from a document management system or attach various documents and create a document workflow.

Introducing Oracle Business Process Management Suite 12c: from Insight to Action

Oracle has unified its BPM, case management, and content management technologies to empower customers to create intelligent business processes and adaptive case management solutions. Oracle’s innovative middleware environment enables a new approach to modeling, automating, measuring, and optimizing business processes that help workers take decisive action based on current information.

Using Oracle BPM Suite 12c as the unifying fabric enables developers to orchestrate business activities across systems, departments, and channels. For example, an organization can align its marketing, sales, and services groups by creating a BPM workflow with appropriate handoffs from one department to the next. This workflow can accommodate new channels of interaction while seamlessly integrating information with enterprise CRM applications, enabling all workers to access and update the associated systems of record.

Oracle BPM Suite 12c also includes comprehensive case management capabilities that enable caseworkers and case managers to manage unstructured processes. Cases can include a variety of

artifacts such as documents, data, and discussion streams. Oracle makes it easy for business users to create and manage these cases within a BPM workspace. A case user interface lets knowledge workers view all aspects of each case including goals, milestones, activities, stakeholders, data, content, and a detailed audit trail. Users are presented with a list of case activities driven by a combination of case policies (business rules) defined at design time, case events (system generated as well as user-defined), and case milestones. They can determine the order in which these events should be executed and also create new activities (human tasks, e-mail messages, or launching other processes). They can upload content, change milestones, and modify case outcomes. All these steps and interactions are recorded in a detailed case audit trail.

Service-Oriented Architecture

Oracle BPM Suite 12c works with Oracle SOA Suite to create end-to-end business processes that can be triggered, executed, and monitored using browser-based tools. Execution of these processes is centrally coordinated, allowing for real-time insight into exceptions and bottlenecks as well as on-the-fly intervention and improvements within the process flow. The combination of Oracle BPM Suite 12c, Oracle SOA Suite, Oracle Business Activity Monitoring, and Oracle Business Intelligence solutions provides everything organizations need to implement, execute, and monitor end-to-end business processes as well as individual subprocesses and tasks.

For example, a manufacturing company might use an intelligent BPM platform to handle machine-to-machine (M2M) communication, triggering complex workflows when shop-floor equipment needs attention. If a piece of machinery reports a malfunction, the BPM system can log a service request, order a new part, or gather diagnostic data for additional analysis. The system can automatically orchestrate these various services and integrate data with the company's enterprise systems of records. Built-in monitoring tools help people resolve problems quickly and comply with service-level agreements (SLAs).

Comprehensive Modeling and Monitoring with Key Performance Indicators and Key Risk Indicators

One of the biggest advancements with Oracle BPM Suite 12c is the degree of control it affords over the product lifecycle. The suite includes a library of prebuilt processes that can automatically be executed based on specific events or circumstances. The Business Process Composer feature in Oracle BPM Suite 12c lets business users control all aspects of a project as they define processes, forms, and business rules. Broad modeling capabilities make it easy to catalog and categorize these processes. Using an enterprise process map, users can drill down into hierarchical value chains and link those value chains to operational business process flows.

Users can also define KPIs as low-level operational process flows, then roll them up and link them to high-level KPIs to create value chains. This makes it easy for business users to measure goals, objectives, strategies, and business process flows. Users can also define and monitor KRIs to indicate the probability of KPI violations, and visualize both KPIs and KRIs via a red/yellow/green traffic light metaphor that helps workers know when to take action.

For example, a business process that monitors sales activity might include KPIs related to regional sales volume. A KRI could be triggered if a particular region has not reached 80 percent of the expected volume by the 80th day of the quarter, motivating a sales manager to intervene and take proactive action to help close pending sales. Other KPIs can monitor service-level agreements such as making sure that invoices are paid on time. When certain events occur or predefined thresholds are reached, an intelligent process might reallocate the A/P workload or recommend management to ensure that invoices are paid on time and penalties are not incurred. A sample sales dashboard is shown below.



Visibility into Real-Time Activities

Many organizations want real-time visibility into business events. In an intelligent BPM system, that visibility is delivered via dashboards and alerts. Analytics capabilities enable workers to monitor the health and performance of business processes and take corrective action if something goes amiss. For example, a manufacturing company could monitor shop-floor equipment to predict and circumvent the downtime of equipment on an assembly line.

Oracle BPM Suite 12c enables business users to analyze all aspects of these business processes. Dashboards and reports display real-time business measures, with the option to drill down into the details. This makes it easy to spot bottlenecks, inefficiencies, and the root cause of problems. Users can drill down into these instances to see how processes are performing compared to historical averages and then take corrective action.

When certain events occur or predefined thresholds are reached, an intelligent process can recommend designated activities—such as discounting a popular product based on click-stream analysis on an e-commerce site. A dashboard that monitors customer service requests might also trigger proactive activities, such as queuing up a call from a customer service rep, along with explicit guidance from the knowledgebase about how to solve the customer's problem. This is another example of an adaptive business process since intelligence within the process helps caseworkers arrive at the right decisions.

Embedded Business Intelligence and Predictive Processes

Oracle's intelligent BPM foundation rests on four analytics pillars:

- Operational analytics that predict trends through advanced pattern matching
- Event processing that utilizes the notion of KRIs to supplement KPIs
- Strategic analysis via integration with business intelligence (BI)
- Predictive analytics in conjunction with statistical analysis

Consider a complaint scenario in which a customer has expressed dissatisfaction with a product or disputes a charge on a bill. A predictive model can offer guidance to the customer service rep or caseworker, recommend a likely course of action, and make some decisions automatically. An intelligent system might suggest a year of free maintenance or inclusion in a premium customer loyalty program, based on that customer's history, purchase patterns, and the system's knowledge of similar customers in similar circumstances.

Oracle BPM Suite 12c integrates with Oracle R Enterprise, a feature of Oracle Advanced Analytics that brings powerful statistical capabilities to problems involving big data. Oracle R Enterprise enables developers to create predictive analytics models that detect trends and patterns in the process data. Predictive models created within Oracle R Enterprise use real-time data from Oracle BPM 12c process analytics. Infusing this insight into processes enables people to guide a business process or case flow. As a result, knowledge workers can receive recommendations that lead to better business outcomes.

For example, predictive information can be fed into a dashboard to calculate churn probability based on a particular customer's history, as compared to similar customers in similar situations. Customer churn is a major problem for many businesses, especially in highly competitive markets such as telecommunications. A cellular service provider might use such a model to predict the likelihood of customers defecting to a competitor based on changes to that competitor's service plans. They can view the data in aggregate or apply that model to each customer's history. The BPM system could then make recommendations by examining payment records, calling plans, and service histories to detect trends within the customer base and suggest optimal service plans for each type of customer, increasing loyalty.

Process Accelerators

Oracle offers process accelerators to help customers get started quickly with intelligent BPM projects. Oracle Process Accelerators include predefined process models and business rules to simplify the implementation of BPM solutions. Customers can configure and extend these packaged solutions to match unique business requirements, as well as leverage predefined metrics and KPIs to add process monitoring and improvement facilities. This makes it easier to automate document routing and approval processes, from initial submission to final approval and notification. Built using Oracle BPM Suite 12c, Oracle Process Accelerators enforce standard routing patterns for many types of documents, with automated notification of review, visibility into the state of each process, and postapproval

auditability. Having standardized processes for document routing and approval helps organizations meet compliance requirements and streamline audits.

Support for Mobile and Social

Oracle BPM Suite 12c includes Oracle Mobile Application Framework for building mobile apps. This framework empowers developers to create consistent, model-driven customer experiences that span multiple Oracle Applications as well as add social and mobile technologies to enhance the user experience. For example, developers can build custom apps using REST APIs that utilize native mobile apps such as calendars and contact lists. These mobile apps can also take advantage of location-based services to dynamically modify a business process based on the context.

Oracle Mobile Application Framework includes a native task approval application for the Apple iPad that can be downloaded from the Apple iTunes store. These technologies give developers a raft of convenient new capabilities for adding mobility to adaptive business processes. They can use native iOS application services to organize and manage tasks, enabling mobile users to approve tasks in a workflow, upload documents and photos as attachments, and reassign tasks to associates—all from their cell phones and tablets. Tasks that are performed while disconnected from the network will be automatically synchronized once a worker reconnects.

Integrated social capabilities are also important to intelligent BPM systems. In many instances, being able to confer with an expert can help resolve a case quickly. This might involve interacting with a product manager to answer a technical question or ping a sales manager to approve a discount or resolve a dispute. An intelligent BPM system facilitates these interactions, whether it's obtaining an approval, delegating a subtask, or reassigning the case to somebody with targeted experience in a particular domain.

For example, when onboarding a new customer, an HR professional might need to collaborate with a domain expert to verify the latest 401(k) benefits. Financial services companies face similar issues when investigating fraudulent transactions. Each case is a little different depending on the type of transaction, region, customer history, and other variables. An adaptive case management process supplies the necessary variability to manage these cases efficiently.

Conclusion

Flexible business processes are a key component of becoming a digital business. They enable agility by allowing an organization to leverage both on-premises and cloud applications. They allow developers to embed actionable analytics into business processes. And they permit users to interact intelligently with enterprise applications and systems of record.

Oracle's intelligent BPM technology makes it easy to create end-to-end business processes on top of existing applications. These business processes can be triggered, executed, and monitored from browser-based web interfaces, while also interacting with social and mobile channels. Enterprise applications become more efficient by automating processes that span multiple systems and modules.

Oracle's other middleware tools connect and synchronize these intelligent business processes, even as they deliver insights, link applications, and extend workflows to transform common business activities. Oracle's unified BPM platform can support conventional BPM as well as intelligent BPM and case management activities, with support for event-triggered behaviors, business rules, tasks, notifications, and milestones.

Oracle's intelligent BPM technology delivers unique and important capabilities to today's businesses. Analysts at Ovum describe Oracle's BPM technology as "a functionally rich, well-integrated suite with a strong heritage." Ovum analysts laud Oracle for providing a "well-crafted environment for process developers, business analysts, and business users," as well as for its "mature and high-quality training, education, and certification services," which it rates "among the best in the industry."¹

¹ "Ovum Decision Matrix: Selecting a Business Process Management Solution, 2014"; (EI024-000001); February 12, 2014.



Intelligent BPM
August 2014

Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:
Phone: +1.650.506.7000
Fax: +1.650.506.7200

oracle.com



Oracle is committed to developing practices and products that help protect the environment

Copyright © 2014, Oracle and/or its affiliates. All rights reserved. This document is provided for information purposes only and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group. 0814

Hardware and Software, Engineered to Work Together