

An Oracle White Paper
February 2015

Cloud Integration Use Cases

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Executive Summary

Today's organizations are facing a rapid transition from on-premises-only application integration to a more diverse integration landscape that involves combining on-premises with public and private cloud applications and services. For both real-time and batch-level interfaces, developers often set up point-to-point interfaces to initiate inter-application workflows and exchange data. Unfortunately, as the number of cloud providers in the IT ecosystem expands, the protocols, file formats and data types differ widely from one cloud vendor to another. Complexity increases exponentially, forcing most organizations to find a standard way to create and maintain interfaces among applications and data sources. Rather than manually coding for these connections among cloud and on-premises information systems, they realize that it is much easier to use a general-purpose integration platform.

Oracle has the answers. Oracle Integration Cloud Service and Oracle SOA Suite integrate cloud and on-premises assets with a cohesive set of services. Customers can connect cloud applications to cloud and on-premises applications via adapters that manage the technical differences between applications and data models.

This white paper presents examples of how four organizations (Engineers Australia, BMC Software, JDSU, and Advanstar) use Oracle integration technologies to simplify IT operations, enhance business processes, and reduce costs. As we will see, Oracle offers a comprehensive cloud integration solution that goes above and beyond basic connectivity to facilitate process orchestration, analytics, and service virtualization. This proven middleware solution simplifies development, activation, and management with a standards-based infrastructure that ensures interoperability among all types of applications.



Real Time Synchronization

Today's organizations often need to interface cloud with on-premises applications to enable real-time, event-driven business process. For example, in order to complete a repair, a field service rep might need to order parts from a legacy inventory-control application that interfaces to a cloud-based CRM system, and then update the customer record in an on-premises billing system.

Case in Point: Advanstar

Consider Advanstar, an event and marketing services company that must integrate business professionals and consumers in the fashion, licensing, life sciences, and power sports industries with its portfolio of 54 trade shows, 100 conferences, 30 publications, and almost 200 electronic products and Web sites, as well as educational and direct marketing products and services.

Until recently, Advanstar used a batch process based on Informatica Cloud Data Replication Services to exchange data between a legacy on-premises billing solution and a cloud-based Salesforce CRM system. The legacy solution included a Microsoft .Net application that handles order management, invoicing, and receipt functions for exhibitor customers, with data stored on premises in a Microsoft SQL Server database.

Due to the need to immediately update CRM information in the billing system to support accurate invoicing, the cloud

replication needed to be performed quickly. Thus the batch process was architected to exchange data between the local and cloud worlds every fifteen minutes. However, issues with the Informatica replication service sometimes caused delays, which proved to be problematic. The integration cycle should have been automatic but the IT department had to frequently intervene to oversee the batch replication process. It took too much time and effort to maintain the system.

As presented in an [Oracle Customer Insights Webcast](#), “whenever a tradeshow draws near, the volume of CRM updates increases substantially,” explains Larry Shapiro, PMO Supervisor at Advanstar. “Invoices need to be sent out throughout the day. However, because replication jobs could only be cycled every 15 minutes, there were delays in getting the updated CRM information into the billing system. The consequent delays in invoicing were detrimental to the business.”

The Importance of Instant Visibility

Advanstar wanted an enterprise-class order management system to better manage orders and cash flow. They selected Oracle E-Business Suite to replace the legacy billing system. The IT department

Challenges Prior to Overhaul

- **Batch integration solution**
 - Informatica's Cloud replication service to copy Salesforce data to local SQL Server database not acceptable
- **Lack of real-time integration**
 - With Salesforce.com and Billing system
- **Legacy, homegrown .Net Billing system**
 - For order management, invoicing and receipt functions for exhibitor customers
- **Data replication jobs run into each other causing conflicts**
 - Every 15 minutes not frequent enough.
- **Increased problems as events draw near**
 - Due to high volume

★ ADVANSTAR

had several key goals as they implemented this new order management system. For example, they wanted sales reps to have immediate access to all information pertaining to their customers and orders. When an order was invoiced and a receipt applied against it in Oracle E-Business Suite, they wanted the rep to have immediate visibility of that event in Salesforce.

Advanstar also wanted to ensure that CRM updates to customer records, such as a name or address change, were immediately visible in the Oracle E-Business Suite applications. That way invoicing would always be accurate and there would be no costly delays. Finally, they wanted a real-time interface between Oracle and Salesforce that would be easy to maintain. Ideally this type of interface could be easily applied to other applications that would be integrated with Oracle E-Business Suite in the future.

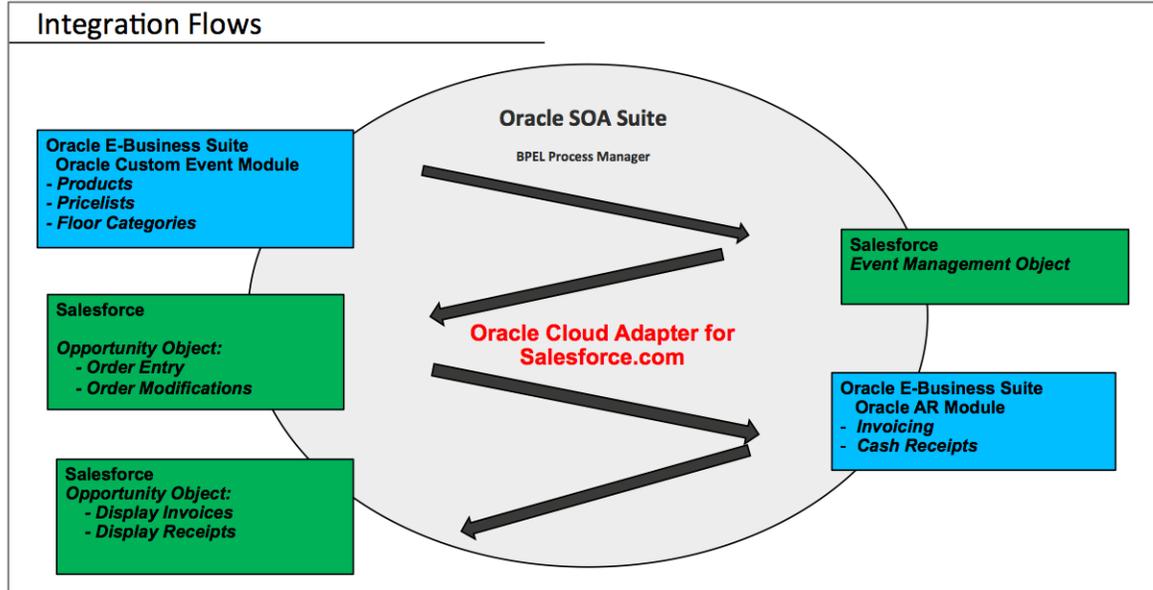
In order to achieve these goals, Advanstar selected Oracle Cloud Adapters to replace the legacy integration solution. The goal was to simplify IT and provide real-time synchronization between cloud and on-premises applications.

Establishing Bi-directional Integration

Shapiro and his colleagues decided to maintain master data about trade shows and events in an Oracle database. Oracle E-Business Suite would handle all the Accounts Receivable functions, such as invoicing and receipt management. Meanwhile, details about how exhibitors order floor space, packages, sponsorships, and various other products would be implemented in Salesforce. They used Oracle integration and the Oracle Cloud Adapter for Salesforce to synchronize the data.

Today, all of these integrations run through Oracle SOA Suite. Once a sales rep enters an opportunity record in Salesforce it is immediately submitted to the Oracle ERP system and included in the current invoicing run. Receipts can be immediately applied against this invoice as they come in. If the sales rep modifies an order in Salesforce, those changes are immediately integrated with the ERP system. Conversely, whenever an invoice or receipt is created against an order, that data is immediately integrated back to Salesforce, where it can be viewed through the same opportunity that the sales rep originally created.

This real-time integration solution gives sales reps a current view of all of the activities taking place with each customer, both on the sales and financial sides of the business. Sales reps have a broad, up to the minute view of all pertinent data relating to each opportunity and sale. This architecture is illustrated in the image (created by Advanstar) below.



Advanstar plans to base future integrations on this same architecture, such as the ancillary systems that formerly exchanged data with the legacy billing system. Now they can integrate these systems with Oracle E-Business Suite in a way that is consistent with the interfaces that they created for the Salesforce integration. Oracle SOA Suite gives them a general-purpose architecture that reduces complexity and simplifies development by enforcing reusability for all integration work going forward.

Advanstar Snapshot

Challenges

- Lack of real-time integration stalled billing cycle
- Data replication jobs ran into each other, causing extra work for IT pros
- High sales volume caused delays at critical business junctures

Solution

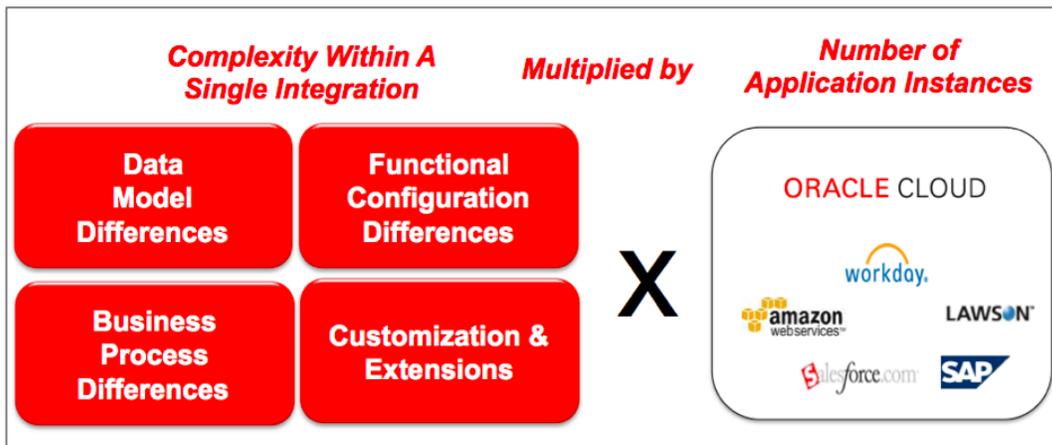
- Deployed Oracle Cloud Adapter for Salesforce
- Replaced Informatica with Oracle SOA Suite
- Integrated on-premises accounts receivable data with cloud-based customer data

Results

- Sales reps have an accurate, up to the minute view of all pertinent customer information
- The IT department has a solution for real time synchronization of cloud and on-premises applications
- Standards-based Oracle Cloud Adapters streamline future integration initiatives

Hybrid Integration—Cloud and On-Premises

As companies expand from on-premises applications into a hybrid on-premise/cloud infrastructure, there is a pressing need to implement a unified service integration platform. Without such a platform, these organizations face increasing IT complexity and mounting costs managing a growing patchwork of niche integration toolsets as well as the disparate standards mandated by each SaaS vendor. Each vendor has different cloud integration requirements and dictates the format of its individual interfaces using a wide variety of standards and protocols such as SOAP, REST, Socket, HTTP/POX, and SFTP. In addition, every vendor has its own methods for security, mobile, cloud, and social interfaces, as shown below.



Case in Point: BMC Software

Consider BMC Software, a technology company that provides enterprise management solutions that span information systems, applications, databases, and service management. As an independent software vendor (ISV), BMC has lots of experience with developing, deploying, and integrating applications.

Internally, BMC uses a wide variety of SaaS applications to automate its business. Business processes span multiple SaaS and on premises applications, with approximately 70 percent of IT activity taking place in the cloud.

Leveraging Established IT Policies and Constructs

IT leaders at BMC wanted to ensure that SaaS apps were “good citizens” of the enterprise application ecosystem so these apps could benefit from corporate IT standards and policies. SaaS apps need to be integrated with other apps and databases in a manner that yields acceptable performance. BMC also wanted to enable its SaaS apps to leverage the company’s on-premises security architecture.

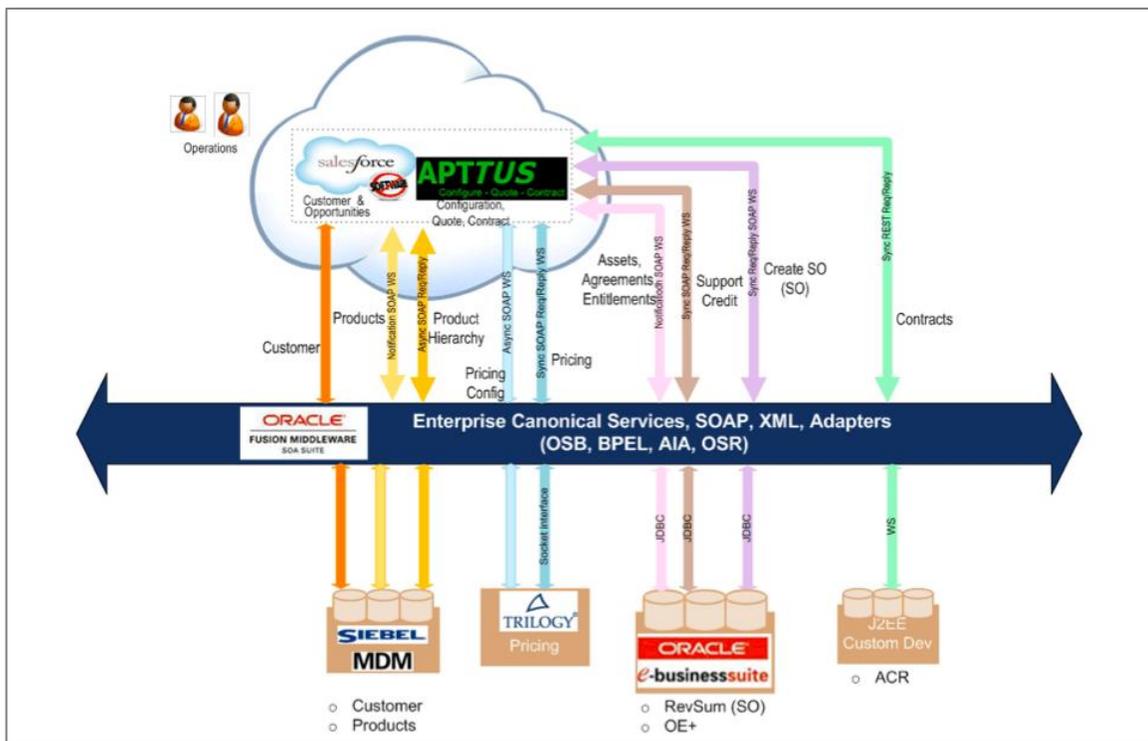
Previously BMC’s integration architecture was based on an integration vendor’s solution that required too much custom code to add new SaaS apps to the ecosystem.

Creating Standard Integrations for Myriad Needs

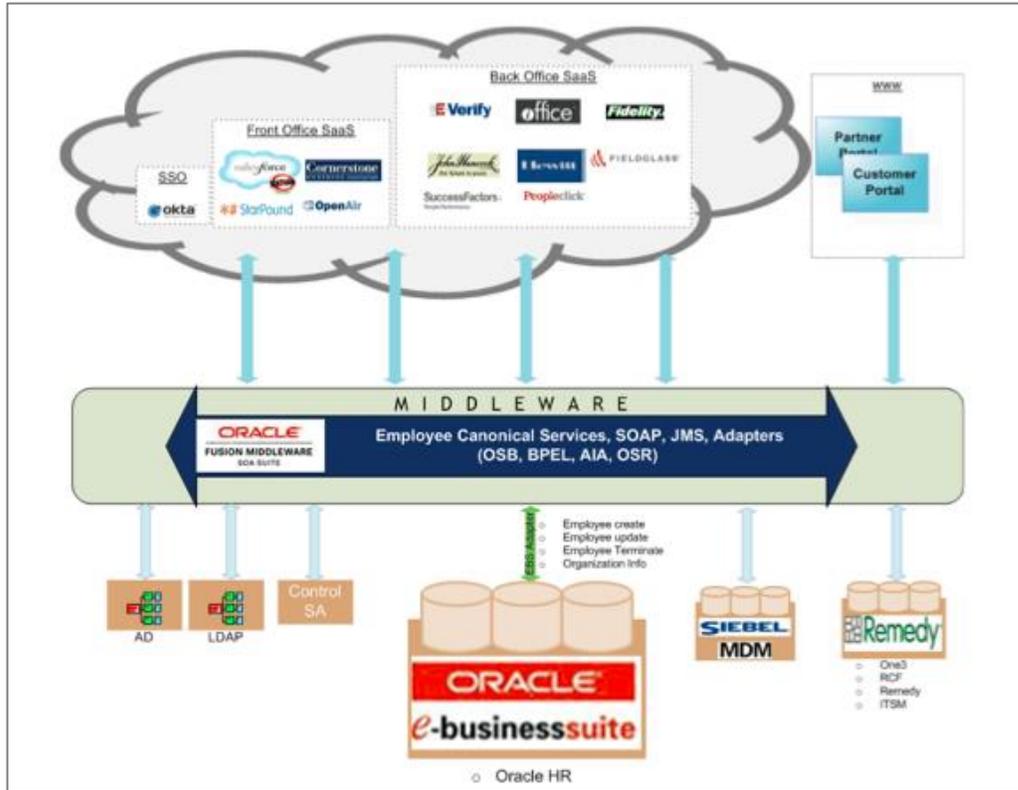
To simplify this architecture, BMC selected Oracle Fusion Middleware based on the strength of Oracle SOA Suite to construct reusable services. Developers created RESTful services among the on-premises and cloud applications. To date they have created 50 integrations with Oracle SOA Suite. They are in the process of integrating data and business functions from these applications to automate essential business processes such as:

- Configure, Price, Quote (which relies on Apttus and Salesforce)
- Office space management (iOffice)
- Employee Onboarding (including auto provisioning)
- Marketing Automation (Eloqua and Salesforce for marketing, campaign, lead, and contact Management)
- Learning Management (Cornerstone integrated with Success Factors)

For example, to automate the *configuration, pricing and quoting* process and enable up-sell/cross-sell activities, they used Oracle SOA Suite to interface key application functions between Salesforce and Apttus, as shown below:



To deliver real time employee information from Oracle E-Business Suite to Salesforce for employee onboarding, they used Oracle Fusion Middleware to connect Salesforce, Oracle E-Business Suite, Siebel, and Remedy, as shown below:



The flexibility of Oracle Service Bus and Oracle SOA Suite have enabled BMC to support a wide variation of functional requirements, as mandated by their SaaS vendors. BMC’s long-term goal is to retire its legacy integration solution and conduct 80 to 90 percent of its software integrations through Oracle SOA Suite with managed file transfer (MFT) protocols and RESTful services. They also wish to establish a standard service catalog for registering SOA interfaces to encourage reusability.

In contrast to the “patchwork approach” of overlapping SaaS toolkits, BMC now has a unified platform to support the disparate requirements of SaaS vendors, on-premises apps, and legacy apps. The company has progressed beyond simple point-to-point interfaces by crafting a service-based integration strategy based on Oracle SOA Suite. This comprehensive integration platform automates service virtualization, management, event processing and more—with the flexibility to handle all future SaaS applications as well.

BMC Snapshot

Challenges

- Every integration implementation was unique

- Salesforce placed limitations on the number of requests per second and number of concurrent sessions
- Each SaaS vendor dictated the interface standards (SOAP, REST, HTTP/POX, etc.)
- Every vendor handled security differently

Solution

- Oracle SOA Suite enables developers to create discoverable, reusable services that enforce reusability and speed time to market
- This flexible infrastructure enables easy swapping of SaaS apps and service providers

Results

- Simplified IT architecture
- Lower total cost of ownership
- Increased business agility for rapidly turning up new SaaS apps
- Greater integration with corporate IT standards and policies

Streamlining Business Processes: Linking Integration and Processes

Service-based integration has become a popular method for linking disparate applications across many different business lines and functions. But how can you extend this popular deployment model to accommodate human intervention and introspection at key junctures within a business process? That's where Business Process Management (BPM) technology comes in.

BPM technology empowers business analysts to optimize a process, improve its visibility, check statistics, perform activity monitoring, combine elements of social collaboration, and a host of other tasks. It improves all types of organizational activities, from structuring simple business processes like travel approvals to automating more complex business processes that require domain expertise such as incident reporting. These processes often span multiple IT systems, departments, channels, and touch-points. Some activities are automated and performed by machines; others are manual and performed by people, both inside and outside of the company.

Case in Point: Engineers Australia

Engineers Australia has created a national forum for the advancement of engineering and professional development for member engineers. With over 100,000 professionals embracing all disciplines of engineering, it is the largest and most diverse organization of its kind in Australia. To establish a more versatile IT architecture and improve the services it



provides to engineers, Engineers Australia decided to replace its aging legacy IT infrastructure, redefine its business processes, and implement cloud-based customer relationship management (CRM) functions.

Engineers Australia organizes thousands of events each year. They use Salesforce to market these events to customers and Oracle E-Business Suite applications to automate internal operations and financial functions. A desire to source the data for marketing campaigns from the corporate database led them to Oracle SOA Suite and the Oracle Adaptor for Salesforce as described in the [Oracle Media Network Video](#)

Creating Self-Service Business Processes

In addition to Oracle E-Business Suite and Salesforce, which automate sales processes and case management functions for the organization, Engineers Australia installed Oracle BPM Suite, Oracle SOA Suite, and Oracle WebLogic Suite as a foundation for its eChartered system—a self-service environment for “chartering” or certifying engineers. They use Oracle BPM Studio in conjunction with Oracle SOA Suite to create end-to-end business processes that can be triggered, executed, and monitored from browser-based Web interfaces. Execution of process instances is centrally coordinated and monitored—allowing for real-time insight into exceptions and bottlenecks, as well as on-the-fly intervention and improvements within process flows.

Engineers Australia’s chartering function used to be a manual, paper based process. Now they have an online system that allows engineers around the world to enroll in the eChartered process, submit their experiences online, and gain certification by Engineers Australia’s assessors. If there are regulatory or policy changes, adjustments can be made quickly.

Using Adapters to Replace Traditional APIs

Initially, Engineers Australia’s in house developers integrated Salesforce using traditional APIs, which was complex and costly. In order to more fully integrate its enterprise applications with Salesforce.com, Engineers Australia is using the Oracle Cloud Adaptor for Salesforce to minimize the time it takes to create new interfaces by 60 percent. “Using the Oracle Cloud Adaptor for Salesforce, our recent experience has shown that this is a much, much simpler product to use,” says Richard Holmes, a Program Manager at Engineers Australia. “Instead of taking three months, [one recent project] took three weeks. The work was straightforward and simple—a drag and drop type of exercise.”

Engineers Australia uses the Oracle middleware infrastructure to integrate on-premises apps with Salesforce. Oracle SOA Suite has become the preferred environment for integrating many different systems and applications including ERP, content management, and business intelligence.

Engineers Australia is also using Oracle Fusion Middleware to integrate Oracle E-Business Suite with the eChartered website, saving engineers and accounting staff significant time when processing credit card payments for enrollment, assessment, and professional interview fees, while minimizing the risk of human error. Previously, an engineer would call, e-mail, or submit card details on paper forms for processing. A staff member would manually enter the data into the legacy system. Now engineers

submit approvals through a payment gateway. Invoices and receipts are integrated straight into Oracle Financials, without manual intervention.

“Engineers Australia relies on IT to be more relevant to its customer base,” says Richard Holmes, a program manager at the company. “Our information systems allow our customers to engage with us and to have a personal experience with us, wherever they are in the world.”

Holmes says this direct integration approach is faster and more secure than their previous manual processing methods. By using SOA to integrate application functions and data between Oracle E-Business Suite and Salesforce, Engineers Australia has ensured that its online credit card payment function will remain active even if there is a problem. Additional benefits include better security, guaranteed delivery, and error reporting.

Based on the success of this initiative, Engineers Australia has begun its second project, eRenewals, where it will use Oracle BPM Suite and Oracle SOA Suite to develop new processes for its membership such as skills assessment services.

“Oracle SOA Suite’s loosely coupled architecture ensures that we can continue to provide efficient services to our engineers and members by enabling the website credit card payment system to remain active even if there is a problem with the back-end applications,” Holmes sums up. “We can be confident that as Salesforce.com moves on, as it surely will do, our interfaces will continue to run reliably.”

Engineers Australia Snapshot

Challenges

- Reduce the time and cost of developing, enhancing, and maintaining cloud to on-premises interfaces
- Improve services to engineers and existing members by redefining business processes
- Enhance visibility into membership services for administration and call center staff

Solution

- A loosely coupled service oriented architecture to integrate with Oracle E-Business Suite and Salesforce

Results

- Reduces time required for enrollment from 30 minutes to less than 5 minutes
- Saves administration staff up to 20 minutes to process each engineer’s enrollment by eliminating human error and the need for manual intervention

Enriching Cloud Applications with Back Office Data

Forward-looking businesses see the cloud as an extension of their on-premises IT environments. Instead of creating simplistic “one off,” point-to-point interfaces, they devise a comprehensive integration strategy that considers governance, change control, and error handling. They also figure out

how to accommodate both browser-centric applications and mobile applications in a cohesive way. Mobility brings tremendous business value to the enterprise, but mobile apps should be able to utilize existing information systems, IT assets, and the expertise of those who develop and manage these systems.

Oracle SOA Suite has offerings for mobile-enablement and API management that address many customer strategies. An integral part of Oracle Mobile Platform, Oracle SOA Suite helps organizations address all types of mobile integration challenges for applications that reside on premises or in the cloud.

Case in Point: JDSU

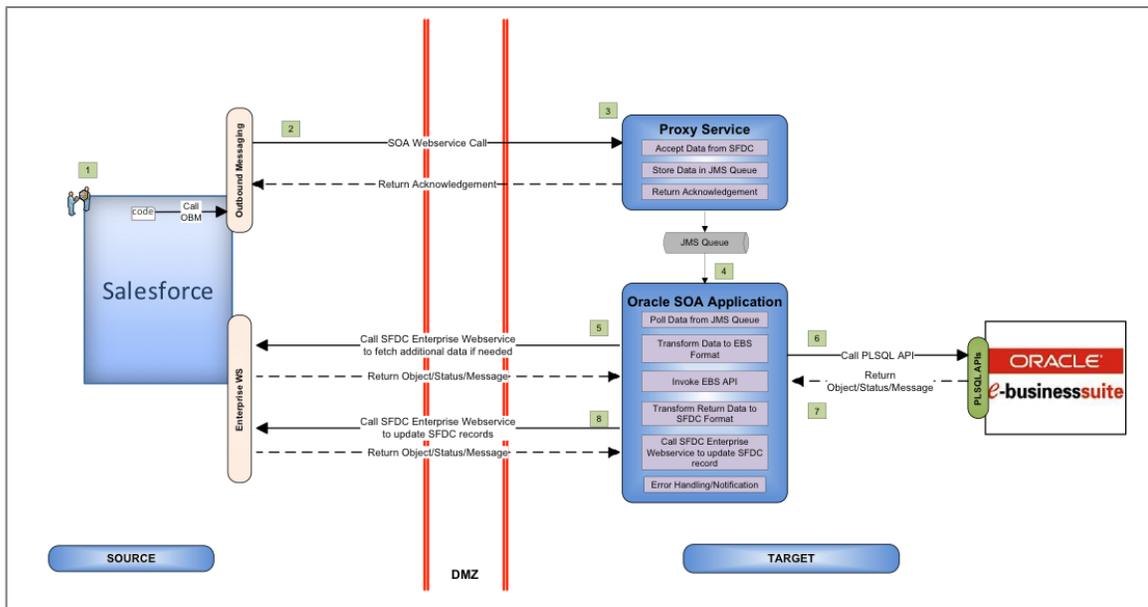
Consider JDSU, a manufacturer of products for optical communications networks, test and measurement equipment, lasers, optical solutions for authentication and decorative applications, and other custom optics. This well-known manufacturing company relies on a cloud-based CRM system from Salesforce. However, until recently, this CRM system was not integrated with JDSU's on-premises Oracle E-Business Suite applications. This meant that the sales team spent an inordinate amount of time gathering information about customers and opportunities from Salesforce, while critical data about orders, purchase orders, and financial policies had to be manually extracted from Oracle E-Business Suite. This lack of integration made it difficult for sales reps to create accurate quotes and provide them to customers in an efficient way.

JDSU connected its Salesforce application with key modules from Oracle E-Business Suite. Rajeev Sethi, senior director of IT applications at JDSU, calls it a “seamless transition” for the field sales force. “We use Oracle SOA Suite to bring valuable back-office data to our sales team,” he notes.



Accelerating Quotes and Orders

The project was carried out in two phases. During phase 1 they integrated Salesforce with Oracle E-Business Suite accounts, contacts, opportunities, and quotes. During phase 2 they integrated “item” and “order” information into Salesforce. They also connected a Service-Now app to Salesforce and Oracle E-Business Suite to simplify user onboarding, as shown below:



Now, when a user performs specific operations in Salesforce, an outbound messaging process invokes a web service to sync-up with Oracle E-Business Suite. Oracle SOA Suite accepts the data from Salesforce and synchronizes data between Salesforce and Oracle E-Business Suite.

Similarly, when a user performs specific operations in Oracle E-Business Suite, the business events process pushes the manipulated data to Oracle Advanced Queuing, which is continually polled by a SOA service. A set of SOA processes picks up the data from Oracle, transforms it to the correct Salesforce format, and invokes the Salesforce Web service for data manipulation operations.

JDSU also established an application-refresh schedule that recognizes the dependencies among the entire IT ecosystem including Salesforce, the Oracle ERP system, a corporate data warehouse, and many third party IT assets. As a result, the field organization can now obtain quotes quickly and easily, improving operational efficiency by more than 20 percent while streamlining order delivery and minimizing errors in purchase orders. They have also increased the number of sales that include a services component by 40 percent. Quote approval cycles involving Salesforce and Oracle E-Business Suite have been reduced from an average of 48 hours to about 6 hours.

Support for Mobile Interfaces

Thanks to the mobile-enablement capabilities of Oracle SOA Suite, these integrated functions are available anywhere, anytime, and on any device. Oracle Service Bus, part of Oracle SOA Suite, allows JDSU developers to easily expose enterprise applications and data as virtual services and enable Web services and RESTful API connections with them. This makes it easy to create a new set of mobile applications that can communicate with JDSU's cloud and on-premises applications through standard Web services.

“The journey continues as we leverage Oracle SOA Suite to integrate critical parts of our business—not just field sales, but also externally with customers and contract manufacturers,” Sethi says.

JDSU Snapshot

Challenges

- Eliminate data discrepancies between systems
- Reduce inaccurate sales and operational forecasts
- Efficiently manage sales processes from initial lead to final product delivery
- Eliminate duplicate data entry

Solution

- A single system for the field sales force that is available anywhere, anytime, and on any device
- Oracle SOA Suite with Oracle Advanced Queuing

Results

- Improves sales and operational forecasting by 20 percent
- Reduces Days Sales Outstanding by two percent
- Eliminates duplicate data entry
- Enables field sales to be more self-sufficient

Conclusion

Oracle provides a comprehensive solution for integrating cloud and on-premises applications. It leverages Oracle Cloud services as well as components from Oracle’s SOA, BPM, and data integration technologies such as Oracle Fusion Applications, Salesforce.com, Workday, and RightNow. In addition to the Oracle Cloud Adapters available from Oracle, the Cloud Adapter Software Development Kit (SDK) enables customers and partners to extend their IT environments to incorporate any cloud application.

Oracle Integration Cloud Service and Oracle SOA Suite provide a unified platform that accommodates all types of information systems and deployment models, supported by a cohesive set of tools for development, management, security, and governance.

Advanstar, BMC Software, Engineers Australia, JDSU, and thousands of other customers rely on Oracle’s advanced integration technology to simplify application development initiatives and lower the cost of cloud integration projects.



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