CHAPTER 11

Being Future-Ready
Business complexity is ever increasing and with it, so is a strong reliance on software applications to help execute efficient business operations and enhance competitive advantage through information insights. As data volumes explode, it's up to software applications to do something meaningful with the inflow. Indeed, it's been recorded that managers waste about two hours a day looking for information, and half of what they find has no value at all.

Because of this, the traditional model of Enterprise Resource Planning (ERP) is becoming outdated, incomplete, and somewhat redundant. Businesses are now in need of enterprise applications that contain the very latest capabilities and support today’s dynamic business models. These capabilities include being able to do the following:

- Intuitively capture all required business data at its source. The days of manual data input are long gone, along with the latency in accessing real-time information.
- Process transactions automatically, based on flexible business rules.
- Visually display business performance trends and patterns through powerful yet easy-to-use analytics.
- Raise alerts upon unexpected business activities, supported by a choice of ready-made remedial flows, including options for collaboration.

This short chapter guides you through some features and options to help you make sure your E-Business Suite deployment supports this type of next-generation evolution.

Usability Drives Productivity

Many years ago Oracle formed a User Experience team to look at improving the ease-of-use for all of their products. With the acquisition of application companies such as PeopleSoft and Siebel and the inception of Project Fusion, this team built a great store of knowledge and went on to lead the way in ensuring the next generation’s solutions were as engaging as possible. This work was so instantly successful that it was clear that existing product lines could also benefit.

In 2007, Oracle looked at how to improve the user experience in E-Business Suite, with a goal to boost productivity. Initially there were concerns that radically changing the technology or architecture of Oracle Applications Framework might introduce instabilities or backward incompatibilities, which would be unacceptable to the huge user base and a threat to the otherwise stable platform.

What resulted was a clever combination of new features that safely extends existing features, plus a method to embed radically advanced user interface components, such as analytics and ADF regions. The first set of obvious improvements was in Release 12.1.3 and included items like type-ahead (or look-ahead) search, inline lists of values, drop-down navigation options, and as shown in Figure 11-1, the ADFX function that can point to a region of an ADF page. These initial improvements were measured as delivering up to three-fold productivity improvements and were well received by enthusiastic customers. As such, more usability improvements are on their way, and now all new E-Business Suite features are designed, built, and tested against user experience design patterns. More details on Oracle’s User Experience team and design patterns can be found at www.oracle.com/usablenapps.

Another way of improving usability and productivity of your E-Business Suite is by integrating it with products that already have these capabilities built-in. I’ve mentioned a couple of times the options for using Endeca solutions embedded into EBS. Endeca’s powerful in-memory database
offers super-fast browsing and searching over massive structured and unstructured datasets, with the benefit of an intuitive, rich, and visual user interface.

This extension improves productivity and information insight while also simplifying IT because the need for separate Online Transaction Processing (OLTP) databases and a data warehousing infrastructure for analytics is removed—the in-memory database pulls live data from the base transactions. The beauty of this solution is that it inherits many E-Business Suite standards, such as security, because it runs inside a standard container.

Endeca already covers some significant areas where complex data and lack of visibility regularly leads to inefficiencies. Example processes where Endeca solutions already exist are in order management (shown in Figure 11-2), procurement and inventory, asset and project management, and CRM field service.

Almost all companies running E-Business Suite tailor its features to better fit their own business needs, from customizing workflows, changing the user interfaces, to making it work with various extensions. While tools that do all this have existed for a long time, such as Oracle Forms and Reports Developer, AD Utility features, Workflow Builder, and the Oracle Applications Framework plug-in for JDeveloper, the custom solutions tended to be strictly either inside E-Business Suite or integrated with one of the standard mechanisms like Interface Tables or XML Gateway.
With the continued adoption of middleware technologies, this has been further extended by the E-Business Suite SDK for Java. This is the latest evolution of what started out as a single custom PL/SQL package (CUSTOM.pll), then, with Release 11.5.10, evolved into a new Personalization framework, and now has this additional capability. The SDK offers Java developers the options to access both E-Business Suite data and stored procedures (via AppsDataSource) and the active E-Business Suite user sessions (via Java Authentication and Authorization Services). This means additional functionality can be more seamlessly integrated with the standard features, ultimately delivering better usability and a more productive workforce. More details on the SDK are available in My Oracle Support Note 974949.1.

Adopting New Technologies

Moving forward with your business means moving forward with your enterprise applications, and there are already a number of opportunities to include the latest technologies with the existing releases of E-Business Suite. Examples include Oracle Applications Express (APEX) for rapid database application development, Oracle Data Integrator (ODI) for sharing large sets of data, and Oracle WebCenter for managing collaboration, dashboard portals, and file attachment features. In addition, we’ll discuss two more features particularly worth highlighting, as they illustrate options that deliver business value as well as prepare the business operations and IT teams for running enterprise applications on the most modern technology.
First, Oracle's BI Applications leverages Oracle Business Intelligence Enterprise Edition (OBIEE) to deliver the very latest in analytical, dashboard, and reporting solutions with native out-of-the-box support for an E-Business Suite back-end. As illustrated in Figure 11-3, empowering users by delivering business data and metrics in a readily consumable way significantly improves the opportunity for better management and deeper insights. Unlocking this kind of information from within the enterprise application is a longstanding dream of many business managers, and with BI Applications this is readymade.

Second, while E-Business Suite has a long and productive history of supporting business process management and execution through Oracle Workflow, this technology has now evolved into a nonproprietary industry standard platform that delivers many more advanced capabilities, namely BPEL and the other components of Service Oriented Architecture (SOA). While reengineering all the existing workflow processes in E-Business Suite into these new technologies is pointless, there is a method of deploying and leveraging these technologies for extensions. There are currently two main options.

The first option is to set up the E-Business Suite product called Integrated SOA Gateway. This installs the Oracle BPEL Process Manager technology and integrates it with E-Business Suite's own internal tool previously known as the Oracle Integration Repository (iRep). As shown in Figure 11-4, the clear information means the end result is integration that is modernized and simplified, as touch-points are wrapped by standard web service containers, allowing them to be easily invoked by external systems.
The second option is to set up the Fusion Middleware option called the SOA Adapter for Oracle Applications. This delivers much the same improved integration solutions but from the other end, by making the external middleware able to communicate with the standard E-Business Suite integrations, as defined in iRep and shown in Figure 11-5. This then allows for the creation of custom solutions for E-Business Suite in JDeveloper or SOA Suite.

To illustrate the power of these types of improvements, in Release 12.1.3, iRep details the following wide selection of integration options available within E-Business Suite:

- 1200 PL/SQL APIs
- 1400 Business Events
- 147 Interface Tables
- 214 Concurrent Programs
- 140 XML Gateway integrations and another 24 in eCommerce Gateway for EDI

To add a little realism into this discussion, there are a few areas where these latest integration tools need some consideration. First, the information on E-Business Suite’s internal workings has, like the product, evolved over time. While the newest sources like iRep have the most up-to-date content, they can be well supported by some of the more in-depth but older documentation. My advice is to look for useful content wherever you can find it.
Second, where integration requires that you go beyond the standard APIs available, there is a tendency to attempt to meet the requirement using whatever methods possible. This results in low-level customizations to objects that may change over time, causing failure in the dependent code. Sometimes the cost of this outweighs the feature benefits that it added.

Oracle E-Business Suite Evolution

As is made clear by the Applications Unlimited commitment made by Oracle several years ago, all the applications product lines, including E-Business Suite, will continue to be developed and enhanced for years to come. This means that new releases will not only include bug fixes, but will also add new features, new products, and the adoption of new technologies.

E-Business Suite Releases 12.1.3 and 12.2 are prime examples of this, where the product has evolved significantly both functionally and technically. While on initial inspection it might seem odd to be continuing to compete with sister product lines like JD Edwards, PeopleSoft, and Siebel, the truth is that these products are not going away anytime soon, and the more advanced they become the shorter the jump over to Fusion Applications will be when that time comes. To illustrate this point, here are a few examples of new features in E-Business Suite Release 12.2 that also exist in Fusion Applications:

- Release 12.2 includes Fusion Middleware components, such as SOA Suite and WebCenter.
- Release 12.2 moves the Java Application Server architecture from OC4J to the more advanced capabilities of WebLogic.
- Release 12.2 moves from the extended Apache HTTP Server to the standard Oracle server.
Release 12.2 offers better technology control and management through the inclusion of Enterprise Manager Fusion Middleware Control and the WebLogic Administration Console.

Release 12.2 adopts the 11g Release 2 of the Oracle Database, leveraging its advanced capabilities such as edition-based redefinitions to support online patching.

With Fusion Applications now released, it’s clear that, while it lacks the functional breadth of E-Business Suite, it is evolving at a rapid pace and closing the gaps where the need is most obvious. Ultimately, there will be a convergence of sorts, where Fusion grows to be functionally equivalent to E-Business Suite, and E-Business Suite runs on similar technologies. That said, the E-Business Suite pages and forms are not going to be rewritten in ADF, and the stable base code of E-Business Suite will remain that way. It’s the extensions and new features that will be the focus when considering taking up and benefiting from these new Fusion-related technologies.

Interestingly, there were some precursor niche products written using an early Fusion techstack, commonly referred to as Fusion Edge products. These modern features run alongside the traditional E-Business Suite products, and have already proven the benefits and opportunities available by reengineering enterprise features using the latest technologies.

In addition to technology, Fusion Applications seized upon the opportunity to redesign many of the standard business functional processes, especially those that evolved somewhat organically in E-Business Suite. This resulted in many simplifications and optimization opportunities, as advanced features added later to the E-Business Suite product are native in the design, plus it includes more effective implementations used by other equivalent applications product lines. Fusion is therefore a most appropriate name.

The differences in Fusion Applications range from increasing task completion efficiency, thanks to a simpler and more intuitive interface, to reducing the complexity of many of the back-end processes. For example, compared to E-Business Suite, Fusion Procurement takes fewer steps for a user to raise a requisition, and the back-end processes (and related setup) to automatically create it into a purchase order are also greatly simplified.

The Fusion Applications Roadmap

Since its initial release in 2011, much has been written about Fusion Applications that directly and indirectly recognizes some of the benefits it has over the existing Oracle Applications product lines. The outpouring of writing has also begun to include advice and experiences about using the different adoption options, as the uptake gains momentum. When and how to successfully move to Fusion Applications remains somewhat open to interpretation; the right approach depends on a number of organization-specific factors. We’ll discuss building a strategy shortly, but here are a few points to consider:

- Making the most of consolidation opportunities, including hardware and existing application
- Improving the alignment of business strategy with the applications portfolio
- Modernizing the IT infrastructure, including more options for mobile and social capability, plus ensuring the continuation on fully certified and supported platforms
- Adopting new technical capabilities offered by the latest technologies
- Adopting new business capabilities offered by the functional products
- Simplifying and standardizing opportunities, such as using open-standards technologies and eliminating high-overhead customizations
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- Creating better budget visibility by leveraging service and subscription models
- Starting small and cherry-picking the features worth having, such as getting ROI quickly
- Cleaning the business system using Master Data Management solutions, so when the move happens it has quality information going in

I hear often a lot about the “upgrade” process and having to reset some expectations. There is currently no upgrade process to move from any Applications Unlimited products to the Fusion Applications equivalent. This is because Fusion Applications is a new product line with a new technology stack and different applications code. As such, moving to Fusion Applications requires a fresh implementation, although there is some support for migrating (importing) legacy data. Obviously, the effort and resources required to do this kind of reimplementation are significant, and already the Software-as-a-Service or cloud-based options are popular alternatives that offer revolutionary alternatives.

Oracle has in fact recommended six potential Fusion Application strategies to consider, ranging from no immediate adoption to full suite deployment, with several flavors in between. These strategies are not mutually exclusive, and some products might fit with one model whereas others will fit with a different one. Here are the key points in more detail:

- **No change**
  - Don’t adopt Fusion Applications but keep your existing applications on the latest releases. This helps protect the current investment and allows you to continue to realize value without having to forget about the future since it will inevitably incorporate Fusion technologies.

- **Standalone Fusion**
  - Adopt Fusion products but without any integration to existing applications. The use of discrete standalone Fusion Application products is possible and can suit many business needs.
  - Adopt Fusion Applications and retire existing equivalent application products. Here data is migrated into the new system. This is sometimes called a rip-and-replace strategy, although most products can be deployed incrementally.
  - Adopt Fusion Applications where there were no existing application products. This would be suited for a rapidly growing company requiring the latest Enterprise Application suite.

- **Coexist**
  - Adopt Fusion Applications with some loose integration. An example might be data that is initially imported during setup into the Fusion Application and periodically refreshed. Master Data Management is an example, and this method can add new functionality without the overhead of creating and maintaining full integration.
  - Adopt Fusion Applications with tight integration. Here the real-time sharing of data between systems is implemented. Examples are products like Fusion Distributed Order Orchestration which analyzes, decomposes, and routes orders from a capture system like Siebel, to the appropriate downstream fulfillment system like E-Business Suite Order Management.
Fusion Applications Coexistence

Due to the modular nature of Fusion Applications, specific products and features can be adopted on an ad hoc basis and integrated with existing Oracle Applications like E-Business Suite. This includes support for on-premise, on-demand (private cloud), and SaaS (cloud) based adoption. In simple terms, it presents a simplified opportunity for an incremental migration path and the ability to leverage the advanced capabilities of Fusion Applications, all without large up-front implementation costs.

In principle, there are essentially two types of coexistence, although in reality there is some intermingling during deployment. The first is a packaged coexistence scenario, where both ends of the integration are already instrumented with code that will communicate with each other when the appropriate setup is completed. The second is a coexistence-enabled scenario, which requires the implementer to build some of the integration, although it is based on published outlines and APIs as hooks into and out of Fusion Applications. We'll look at both of these in more detail, but first, let's preface this section with a short mention of the main catalog tool for understanding how you might be able to integrate your existing E-Business Suite application with Fusion Applications.

Oracle Enterprise Repository (OER)

The Oracle Enterprise Repository (OER) tool is basically like the aforementioned Integration Repository (iRep) from E-Business Suite, but it's supercharged with both more depth and breadth of content from Fusion Applications. It also includes many useful features to help you find what you need. Currently, it contains over one thousand integration assets, consisting of many asset types such as Web Services, Schema Definitions, SOA composites, business events, and interface tables. It also contains a wealth of electronic Technical Reference Manual (eTRM) information, such as information on database tables and views, flexfields, profile options, and reports.

A public instance of OER, shown in Figure 11-6, is currently available from https://fusionappsoer.oracle.com.

The content in OER is specific to the integration asset type, but common details are items such as message definitions, methods and operations, security privileges, dependencies, and detailed implementation documentation, all of which make this a very valuable resource.

Packaged Scenarios

Completing only some limited configuration to get a complex system-to-system application integration working is a huge cost and time savings when compared with traditional methods that also involved extensive coding. In addition in these scenarios the integration process that runs is fully tested and is supported by Oracle.

At a basic high-level, E-Business Suite requires the implementation of an integration capability, to which linking with Fusion Applications is done using standard mechanisms such as Oracle Data Integrator and SOAP-based Web Services. An example for E-Business Suite is Application Integration Architecture (AIA), which benefits from being a well-proven solution and uses the same common business object definitions as Fusion Applications (such as the structure and data attributes of a purchase order), as well as the same technologies for both ends of the integration, reducing the general likelihood of problems.

Let's look at the example of integrating with Fusion Talent and Compensation Management with Applications Unlimited HRMS. This is sometimes referred to as HR2HR coexistence, however, this name is being retired in preference for expansion of a universal file-based loader approach. In this solution, E-Business Suite (or PeopleSoft) always retains the system-of-record
(or source of truth) for the core HR data, but an initial extract and data load is done into the Fusion database, consisting of people, jobs, organizations, and compensation details. Once complete, ongoing synchronization is performed with fresh profile information coming into Fusion and any changes in compensation shared between both systems. The Fusion system is then used for its advanced capabilities under talent review, goal and performance management, and analytics. It then becomes the system-of-record for the talent data, synchronizing back to E-Business Suite any changes to compensation such as bonuses and promotions. As illustrated in Figure 11-7, it now becomes a rich new business tool for detailed compensation analysis, planning, and allocation.

This coexistence solution works through a combination of data mapping (processed via ODI) and loader programs fed by secure file transfer, and therefore supports both on-premise and cloud deployments.

Each packaged integration works in its own way, some using pure Web Service invocations, many through file-based export and import and others focusing more on ODI data transformation and movement. In addition to the HCM integration mentioned above, the following prepackaged integrations are available:

- Fusion Accounting Hub to E-Business Suite, PeopleSoft, and JD Edwards Financials
- Fusion Project Portfolio Management to Primavera P6
- Fusion Distributed Order Orchestration to Siebel Order Capture, E-Business Suite Order Management, JD Edwards Order Entry

As mentioned before, OER contains details on hundreds of published integration options, so while the packaged scenario list will continue to grow over time, integration is part of the Fusion
Applications DNA thanks to its implementation of open standards architectures like SOA and Web Services.

Enabled Scenarios
In addition to pre-prepared integrations, there are other popular functional business processes where complete integration solutions are almost packaged. This exposes more features of Fusion Applications for use, again without the requirement for a complete system migration or implementation. These scenarios are all supported by a set of APIs for the tasks involved, detailed out in OER as illustrated in Figure 11-8, and require some implementation effort to enable the flow. Some examples include the following:

- Fusion Territory Management to E-Business Suite, Siebel, and PeopleSoft CRM
- Fusion Incentive Compensation to E-Business Suite and PeopleSoft HCM, and to E-Business Suite, PeopleSoft and Siebel CRM
- Fusion Spend Analysis, Sourcing, and Contracts to E-Business Suite and PeopleSoft Requisitioning
I've already mentioned some of the options that allow you to get started building a roadmap from E-Business Suite to Fusion Applications, but there are several well-recognized steps that can be taken right away to begin any of these journeys.

However, I am not suggesting you rush into moving to Fusion Applications if your existing application features support your current operation satisfactorily. The term disruption might have become fashionable in the technology industry, but it remains high-risk and unpopular in more traditional business circles, especially where not necessary. Nevertheless, moving forward with your Application Management Plan is an essential part of the optimization toolbox from Chapter 8.

The following sections include actions that are worth considering to help get you started.

**Take Stock**

It is often hard to make a good application management plan when you do not have a solid grasp of where you are right now. The sheer magnitude of the components, their complex dependencies, and often, their outdated business expectations make it tough to understand what might be appropriate system changes. As such, the first step is to review your enterprise application’s footprint, along with its related technologies. It is common that expensive niche solutions and old inactive requirements are the low-hanging fruit ripe for the picking. Often it is helpful for the resulting inventory to include related items like security solutions and the most critical business data and processes. From a clear starting position all subsequent changes are more likely to be progressive improvements.

Another part of this process is ensuring that your applications and enterprise IT department remains correctly aligned with your business operation. This is an ideal opportunity to undertake this substantial yet critical review task, and stakeholders must analyze and verify that the tools
they have remain optimized for task completion in the various job roles to which they are intended for use. Going further, the strategies and plans of Enterprise IT must remain parallel to those for the overall business, reducing any divergence, assumptions, and bad prioritization.

**Get Up to Date**
Constantly moving to the latest applications releases is an overhead, but the benefits are also well documented. Especially related to this discussion is the fact that there is no current software upgrade from E-Business Suite to Fusion Applications. It is an entirely new application and as such requires a new implementation. The saving grace is that your data can be migrated, but only when the current data model is compatible for Fusion Applications, something that’s only available in the latest releases.

**Understand the Fusion Technology**
Get familiar with the Fusion Applications technology by starting to use it now. Apart from those components introduced in the latest E-Business Suite releases, additional Fusion Technology options exist to satisfy your business needs, as illustrated in general in Figure 11-9. Some of the options for E-Business Suite include the following:

- Optimizing user productivity by including Oracle WebCenter portlets and information mash-ups
- Delivering more reporting and analytics using OBIEE, OBIA, and BI Publisher tools

**FIGURE 11-9.** Broad categories of the Fusion Middleware components
Managing attachments and documents using Enterprise Content Management (ECM)
- Incorporating the Google-like search of Secure Enterprise Search
- Embracing SOA-based and modern message-based integration capabilities
- Enhancing security through implementing single sign-on and Oracle Identity Management

You might also consider the benefits of the advanced application management features of the Fusion platform, something we’ll discuss at the end of this chapter. One example we’ve mentioned throughout this book that has an equivalent in Fusion Applications is centralizing your Applications Lifecycle Management with Enterprise Manager’s plug-in for E-Business Suite.

Consolidate
Generally speaking, fewer components usually means a lower cost. These might be legacy Enterprise Applications yet to be retired, specialist systems that are no longer required, or multiple instances of E-Business Suite deployed regionally that could be centralized into a single global instance.

Another important item to consider is your customization portfolio. These tend to grow over time, and reviewing them fully often leads to retirement, or some replacement with less costly equivalents. In addition to simple rationalization of customizations, it’s also an opportunity to rethink the past strategy of when and how to use customization because the need to support a key business requirement may be different now.

One more suggestion around consolidation is to look at your application data. This also grows over time and, while purging and archiving can clean up processing records and basic transactions, there is often obsolete data in a system, especially around functional setups. With data migration and reimplementation potentially on the horizon, leveraging some of the Master Data Management techniques and solutions in E-Business Suite (or Fusion Applications) can improve data quality and prepare you for better information management in the future.

One final word on consolidation. When planning the evolution of your Enterprise Applications, leveraging outsourcing of system administration and cloud-based deployment models will inevitably come up. Obviously, calculating the ROI from moving an on-premise application to the cloud is very tough to do beyond procuring hardware and software licenses, but those organizations that have introduced service-based subscription seem to be reporting positive results. As this segment of the industry evolves, it seems logical to expect the catalog of options to expand, the implementation and integration processes to simplify, and other positive benefits of increased competition.

Understand the Fusion Functionality
Just as taking stock of your current situation helps plan its evolution, you also need to understand the options available to you in enough detail to make informed decisions. A simple example is how there is no point for a consumer-packaged goods organization in considering the earlier releases of Fusion Applications when the manufacturing functionality was not released.

As such, it’s important to spend some time understanding the features of Fusion Applications and to look for opportunities through either improved or brand new business functionality. You’ll probably want to do this before your competitors do! There are many methods to do this, and a simple start is to review the Oracle website and look for the product data sheets, whitepapers, online demos, and of course the detailed documentation.
In addition, the most popular choice today is to use just a few products from the Fusion Applications suite either loosely integrated or as standalones available through the Oracle Cloud. This lowers costs and is a careful way to instantly get business benefits without significant risk and disruption to your existing IT infrastructure. Visit http://cloud.oracle.com for more detail on the features available.

Share and Learn

Over the last few years, the Oracle community has become more vibrant than ever, and with social networks helping drive more collaboration, there has never been a greater opportunity to benefit from the experience of others, or to contribute yourself.

When considering a bold move like evolving your Enterprise Application, it’s unlikely that anyone wants to make the same mistakes others already have, or to run into known issues that could have been avoided. Therefore, taking time to understand the experience of others is strongly recommended. There are multiple resources you can use to do this:

- Many Oracle Conference papers are based on real-world implementation experiences. Look at past and upcoming Oracle OpenWorld content catalog for examples.
- Work with your Oracle sales team to get customer references and follow them up.
- Engage with system integrators, partners, and Oracle consulting services who have worked on similar projects in the past.
- Engage with a local, regional, or international groups to find out about other members who might be willing to share their experiences.

Fusion Applications Manageability

Since this book is about managing E-Business Suite, it makes sense to conclude with a brief discussion about how application management has evolved in Fusion Applications and what there is to look forward to. If and when you decide to take this to the next level of understanding, please consider reading the equivalent book to this one, entitled Managing Oracle Fusion Applications (Oracle Press, 2011), also written by me.

Enterprise Manager

First, out-of-the box Fusion Applications are deployed with Enterprise Manager Fusion Applications Control, the primary tool for monitoring and managing the entire system. This is very similar to the Fusion Middleware Control available in E-Business Suite Release 12.2 and contains most of the same benefits and is tailored specifically for the needs of Fusion Applications. Similarly, Enterprise Manager Cloud Control is the big sister of these tools. While it requires its own deployment, it contains a powerful plug-in for Fusion Applications, along with many equivalent features to those illustrated in this book. Because all other components of the Fusion Technology stack are also supported by Enterprise Manager, and illustrated in Figure 11-10, there is finally a single one-stop-shop for the majority of applications monitoring and management.
Throughout this book, I’ve mentioned the fragmented set of tools and features for troubleshooting E-Business Suite, something especially prevalent between products, where different options and mechanisms are used for common system administration items such as configuration, logging, and tracing. This is greatly improved for Fusion Applications, since all architectures and common

Common Platforms

Throughout this book, I’ve mentioned the fragmented set of tools and features for troubleshooting E-Business Suite, something especially prevalent between products, where different options and mechanisms are used for common system administration items such as configuration, logging, and tracing. This is greatly improved for Fusion Applications, since all architectures and common
capabilities were standardized and controlled during design. Logging is a good example, where Fusion Applications implements the now gold-standard logging style known as Oracle Diagnostic Logging (ODL), the same one used by the 11g+ Database and most of Fusion Middleware. This creates rich logs in a standard format that can be parsed through easy-to-use tools like Enterprise Manager.

**Problem Management**

Like both the Database and Fusion Middleware, Fusion Applications implements something known as the Diagnostic Framework (DFw). This is a subsystem that is used whenever a serious failure occurs, essentially capturing a snapshot of the system at that point in time. This means that the days of end users subjected to ugly technical errors and cryptic catch-all failure messages are finally over. When a problem occurs in Fusion Applications, the end user gets either a descriptive product message that tells them how to resolve the problem, or in extreme circumstances, they get a reference Incident Number with which they can follow up with their help desk. This facility is inline with the IT Service Management industry standards on problem management, such as these in the popular ITIL framework.

Incidents themselves contain a rich and context-sensitive range of diagnostic information including multiple log files based on different filters, such as process thread, time interval, technology component, and the user's click history. There are also lower-level Java server diagnostics, such as thread dumps and JVM profiler traces. There is configuration data from related components, and an incident can even trigger a functional diagnostic that provides business setup and transactional data analysis. An incident is therefore a complete resource that prevents the need to repeat issues to collect more information, a benefit sometimes referred to as “first failure diagnosis.”

DFw and Problem Management are also embedded inside Enterprise Manager, and therefore the help desk or system manager is immediately alerted to incident creation and has multiple resources at their disposal to begin troubleshooting. Figure 11-11 shows the Incident Manager page for the Fusion Procurement product family, and for each incident a multitude of options are available, including the following:

- Drilling down into the diagnostic files to perform analysis
- Adding more diagnostics from related technology components, such as database reports and traces
- Basic ticketing system operations that can also be easily integrated with more fully functional help desk systems like Siebel Call Center and Remedy
- Matching against similar incidents and problems to identify patterns
- Viewing recent configuration changes for the related system components
- Searching My Oracle Support for matching solutions without leaving Enterprise Manager
- Packaging the incident files and creating a new SR (or updating an existing one), again without leaving Enterprise Manager
Summary

In this final chapter we took a glance ahead to see where the evolution of E-Business Suite is going, as well as how and why formulating a strategy for the future can bring both short- and long-term benefits.

We started by looking at how we can improve productivity through new options, such as embedding ADF regions and Endeca extensions in E-Business Suite. Next, we considered how to leverage additional solutions for E-Business Suite based on the very latest technologies such as OBIEE and advanced integration. We also reviewed the key features of E-Business Suite 12.2 and how it moves us naturally to a state where the jump to Fusion technologies is not quite so large anymore.
We laid out some recommended options for building a roadmap toward Fusion Applications, with a focus on explaining the popular method of adopting the parts that can deliver immediate business value, known as coexistence scenarios. We then looked at some of the key elements to focus around in building your own evolution strategy.

We finally ended somewhat poetically with a glimpse into the future of enterprise application management, and explained how the platforms, capabilities, and tooling have finally come together to form a coherent and complete application management solution. Indeed, to substantiate this bright vision of the future, when setting up our back-end support system for the enterprise applications offered in the Oracle Cloud, I was part of the team that implemented the very same Enterprise Manager solutions, proving once and for all that the ultimate test of your product is to use it yourself.