Oracle JD Edwards Applications and the IBM System i

A Winning Combination Once Again

Lee Kroon, Senior Industry Analyst

September 2006

700 West Johnson Avenue
Cheshire, CT 06410
203-271-1300
www.andrewscg.com

Introduction

After enduring years of uncertainty about their future, JD Edwards applications are back! While they were never truly gone, there were times when users of Oracle® JD Edwards EnterpriseOne and JD Edwards World were concerned that their applications would eventually be phased out in favor of Oracle's next-generation Fusion Applications. Earlier this year, however, Oracle made it clear that it will enhance and support both EnterpriseOne and World indefinitely. Both product lines will coexist with Fusion Applications and remain strategic to Oracle for years to come.

Now that JD Edwards applications are once again viable and strategic solutions, it makes sense for organizations to put them back on their short lists for evaluation. It also makes sense to consider running those applications on the IBM® System i™. While it is possible to host EnterpriseOne on a variety of servers, the System i has unique advantages as a platform for the application suite. These advantages complement and extend the value of the solution.

The following paper describes how JD Edwards applications have made a come back and what makes them a viable option for many companies. It also examines the reasons why the System i is a robust platform for both EnterpriseOne and World.

Executive Summary

At the end of 2004, JD Edwards software users had reasons to be concerned about the future of their applications. Oracle Corporation had just completed its takeover of PeopleSoft, which owned JD Edwards applications at the time. During the prolonged battle for control, PeopleSoft told its customers that an Oracle acquisition would lead to the rapid demise of JD Edwards applications.

Almost two years later, exactly the opposite has happened—JD Edwards applications are enjoying a renaissance. In a series of surprising moves, Oracle has:

- Retained virtually all of the original JD Edwards development and support staff
- Delivered major upgrades to both the EnterpriseOne and World product lines
- Announced a Lifetime Support policy under which it will support the applications for as long as customers continue to use them
- Committed itself to enhancing the solutions for many years to come
- Reinstated Quest as the official user group for JD Edwards customers
- Launched a campaign to stimulate new sales
- Forged close ties with IBM to ensure that JD Edwards customers are supported on the System i and other IBM products

Oracle's remarkable embrace of JD Edwards applications culminated in April 2006 when the company announced Applications Unlimited, its pledge to support and enhance its JD Edwards, E-Business Suite, PeopleSoft Enterprise, and Siebel product lines as long as customers use them. As part of the announcement, Oracle stressed that it will support and enhance EnterpriseOne and World indefinitely on the IBM System i as well as on IBM's DB2® and WebSphere® products.

Taken together, Oracle's actions have enormous implications for both existing and prospective JD Edwards customers. Because of these actions:

- Fusion Applications will not replace EnterpriseOne or World, nor will there be any forced upgrades or migrations to Fusion Applications
- The System i will remain a strategic platform for JD Edwards applications
- Oracle will not require JD Edwards users to switch to its middleware or database products
- Upgrading to the latest EnterpriseOne and World releases once again makes sense
- JD Edwards applications will remain an important force in the enterprise application market for years to come

One reason that EnterpriseOne and World will remain viable is because Oracle plans to enhance them with many of the same technologies it is putting into its Fusion Applications. Many of these enhancements will enable JD Edwards applications to support service-oriented architectures (SOAs). The SOA computing paradigm has the potential to help companies make their business processes more flexible and responsive. By supporting SOAs, JD Edwards products will remain competitive with next-generation applications that feature service orientation as a central benefit.

There are many reasons why companies should once again consider long-term investments in JD Edwards applications. The solutions have the following attributes that make them excellent fits for the requirements of many organizations:

- While the applications have robust capabilities, their functions are integrated in ways that make them easier to use than other packages
- Both EnterpriseOne and World are designed to meet the unique requirements of companies in the manufacturing, distribution, and asset-intensive sectors as well as the construction and property management fields

- Both application suites are easy to deploy and manage compared to competitive offerings, so they require fewer IT resources over time
- Because of their integration and ease of use, JD Edwards applications have some of the lowest costs of ownership of any solutions in their class
- As Oracle enhances the applications over the next several years, they will gain the ability to support SOAs with considerably less risk than the next-generation products that many software vendors are developing
- Should EnterpriseOne and World customers wish to do so, they will be able to upgrade to Oracle's Fusion Applications at no extra charge
- Both Oracle and IBM are working together not only to support JD Edwards applications, but also to enhance them indefinitely on IBM's servers and software

Why Run JD Edwards Applications on the System i?

While all JD Edwards World users host their applications on the IBM System i, EnterpriseOne users have a choice of which hardware platforms to use. Based on our years of experience deploying JD Edwards solutions at dozens of companies, we frequently encourage EnterpriseOne customers to use the System i as their primary platform. We do so because in our work with clients, we have found the System i to be the most reliable, secure, and easy to manage platform for the applications.

Unlike typical servers, which support one or two primary workloads at the most, the System i can manage dozens of workloads on a single system at higher levels of reliability and security. A single System i can also be partitioned into as many as 254 virtual servers to which processor cycles, memory, disk storage, and network resources can be allocated on demand. These virtual servers can run applications on multiple operating systems including i5/OS®, AIX 5L™, and Linux. In addition, the System i can manage up to 60 Intel® processor-based servers running Microsoft Windows® and Linux applications, with each server using the disk storage and network resources of the System i instead of its own stand-alone resources. The System i also comes with its own integrated database, middleware, and systems management tools. Most of these components must be separately installed and integrated on other servers.

As this brief description indicates, the System i is a "data center in a box" that integrates all of the major components of an IT infrastructure and manages them for peak productivity through a consistent set of highly automated tools. This enables the System i to simplify the complex task of managing diverse IT resources while reducing the cost of doing so.

The System i offers significant benefits to JD Edwards users who run their applications on it. Unlike other hardware platforms, the System i is designed to run all EnterpriseOne components on a single system. This simplifies their management, reduces overhead costs, and improves application availability. In addition, System i deployments enjoy high levels of performance and reliability because IBM works closely with Oracle to tune EnterpriseOne and World for the system. The two vendors also develop detailed sizing guidelines and recommendations for running JD Edwards applications on the System i. Indeed, IBM uses its sizing expertise to create preconfigured System i Solution Editions for JD Edwards applications that support specific numbers of users at attractive price points.

In short, the System i simplifies the deployment, configuration, and ongoing support of JD Edwards solutions. This makes EnterpriseOne less expensive to operate than on other servers. Our own experience with clients, not to mention formal studies by other firms, has confirmed these findings several times. As such, we recommend that prospective EnterpriseOne customers consider deploying their applications on the System i as well as on IBM's software that supports the applications. The value that these offerings bring to JD Edwards applications is too great to ignore.

The Rebirth of JD Edwards Applications

On April 24 of this year, Oracle told the world that JD Edwards applications are here to stay. The company announced Applications Unlimited, its policy to support and enhance the JD Edwards, E-Business Suite, Enterprise, and Siebel product lines as long as customers use them. Oracle also stressed that it will support and enhance EnterpriseOne and World indefinitely on the IBM System i as well as on IBM's DB2 and WebSphere products.

The essence of Oracle's new policy is simple. It is publicly stating that it will not force JD Edwards users to upgrade or migrate off their applications. EnterpriseOne and World will remain strategic products with their own development and support teams just like Oracle's Fusion Applications. Moreover, Oracle will develop and ship new JD Edwards releases that include many of the advanced technologies being developed by the Fusion Applications team.

Oracle's announcement stunned many industry observers because they had been expecting the vendor to merge its multiple product lines into Fusion Applications. Despite their surprise, Applications Unlimited is not an abrupt change in direction, nor is it a policy that Oracle is likely to reverse. To understand why this is the case, it is necessary to look at the decisions Oracle made about JD Edwards before it made its announcement.

A Remarkable Renaissance

When Oracle took control of JD Edwards in January 2005 as part of its acquisition of PeopleSoft, it inherited a software vendor with an illustrious history that was laboring under a cloud of uncertainty and doubt. For almost 30 years, JD Edwards had excelled at creating enterprise resource planning (ERP) applications that were robust enough to support enterprises with sophisticated requirements, yet simple enough for almost any organization to use. This won the Denver-based company the loyalty of thousands of small and medium-sized companies who were more interested in running their businesses than managing their IT systems.

In 2003, JD Edwards decided to merge with PeopleSoft, a software vendor whose Enterprise product line was widely used by large enterprises. While the merger initially appeared to be a positive development for JD Edwards, the hoped-for benefits vanished soon after Oracle launched its bid to acquire PeopleSoft. As it struggled to fend off Oracle, PeopleSoft took several actions that gave its JD Edwards users cause for concern. It rebranded EnterpriseOne and World as its own applications despite the strength of the JD Edwards brand. It refused to work with Quest, the international user group that had represented JD Edwards customers for years. It also told JD Edwards users that if Oracle succeeded in its takeover bid, it would force them to migrate to Oracle's own applications and middleware. Naturally, these actions left users wondering about the future of their applications.

Throughout this period, the JD Edwards development teams in Denver continued to turn out new releases of their products with features that kept them competitive. For instance, the EnterpriseOne team incorporated web services and Java™-based development tools into their applications. This enabled EnterpriseOne to integrate more easily with the IT systems of customers and partners via the Internet. It also allowed users to access EnterpriseOne applications via web browser clients that were less costly and easier to support than Microsoft Windows clients. In addition, JD Edwards acquired and developed new software modules that expanded EnterpriseOne's functionality in areas such as customer and supplier relationship management, transportation and logistics, and warehouse management. The new modules gave EnterpriseOne the ability to meet a much broader array of business requirements.

As for World, its development team shipped the first web-enabled release of the product and made hundreds of additional enhancements.

These facts were not lost on Oracle when it considered what it should do with the products and customers it had acquired. When the vendor announced its strategy for the PeopleSoft and JD Edwards product lines in January 2005, many customers were surprised at the favorable treatment that their new vendor extended to them. Instead of halting upgrades to JD Edwards applications and pushing users to adopt its own products, Oracle took the following actions.

- ***Retained the JD Edwards development and support teams.*** Within days of the acquisition, Oracle made job offers to over 90% of all development and support employees. The vendor also pledged to maintain the two groups as independent teams to ensure continuity of service to JD Edwards users.

- ***Restored the JD Edwards brand.*** Oracle immediately recognized that PeopleSoft had erred in dropping the JD Edwards name. Thousands of companies around the world had come to associate the brand with applications that deliver business value without incurring the high costs of many software packages.

- ***Pledged to support and enhance JD Edwards applications.*** At its first meeting with JD Edwards users, Oracle committed itself to supporting EnterpriseOne and World through at least 2013. It also pledged to support current versions of third-party products on which the applications run —such as IBM's DB2 and Microsoft's SQL Server —for the same period. The company also stated that it would ship new releases of EnterpriseOne and World during 2005 and 2006. Now that Oracle has announced its Applications Unlimited policy, these support and enhancement dates have been extended indefinitely.

After Oracle made these announcements, it took further steps to reach out to the JD Edwards community. It quickly reinstated Quest as the official JD Edwards user group and welcomed the feedback it provided. It established JD Edwards customer councils and invited users to sit on existing councils as well. The vendor also decided to actively sell EnterpriseOne to new prospects alongside its E-Business Suite applications. To do so, it engaged Avnet Technology Solutions, a technology distributor that sells thousands of IBM servers annually, to help it sell EnterpriseOne. Oracle also helps IBM and IBM Business Partners to resell JD Edwards applications in regions where Avnet does not have a presence.

Ready for the Future

In the months since Oracle acquired JD Edwards, it has delivered on its pledges to enhance EnterpriseOne and World. When Oracle announced Applications Unlimited in April 2006, it also unveiled EnterpriseOne 8.12. The new release includes extensive enhancements to the applications that manage supply chains, customer relationships, and human capital. The supply chain applications, for instance, include new modules for the operational sourcing of commodities and the management of growers that supply food and beverage manufacturers.

In addition, Oracle is creating "dashboards" that provide EnterpriseOne users with real-time information about the status of their operations. The company recently shipped a Plant Manager's Dashboard; additional dashboards are in development.

Just as importantly, Oracle has continued efforts to incorporate web services and other Internet technologies into EnterpriseOne. The vendor has certified that EnterpriseOne web services can interoperate with services from Oracle's E-Business Suite and Enterprise products. This allows organizations to take functions from all three of these application suites and integrate them with each other in the

support of business processes. Users can orchestrate how web services from all three products work together using Business Process Execution Language (BPEL) middleware from both IBM and Oracle.

Oracle plans to continue enhancing EnterpriseOne well into the future. A new version of the product, EnterpriseOne 9.0, is in planning for shipment in 2008. While the vendor is still determining the enhancements that EnterpriseOne 9.0 will contain, it is clear that the new version will include more extensive use of web services. These services will likely be able to integrate not only with current versions of Oracle's E-Business Suite and Enterprise applications, but also with other applications such as those that Oracle gained when it acquired Demantra and G-Log. In addition, EnterpriseOne 9.0 will likely be able to integrate with the first generation of Fusion Applications. This will enable EnterpriseOne 9.0 and subsequent releases to act as platforms for service-oriented architectures.

As for its World applications, Oracle has substantive plans to enhance them as well. Early in 2007, the company plans to ship World A9.1, a new version of the product that will combine the code bases and advantages of World A7.3 and A8.1. In addition, World A9.1 will utilize an architecture that lets it participate in SOAs. The new World version will be "front ended" with Java-based interfaces through which it can interoperate with web services from other software, including Fusion Applications.

Besides incorporating SOA capabilities, World A9.1 will include enhancements in areas such as service and warranty management, payroll, and integration with spreadsheet applications such as Microsoft Excel®. The new release will also include enhanced support for managing compliance programs, a new web-based documentation system, and tools that make it easier for users to upgrade to World A9.1.

While Oracle is not yet discussing new JD Edwards application releases beyond EnterpriseOne 9.0 and World A9.1, it clearly plans to enhance both products for years to come. As such, users can expect Oracle to ship new releases side by side with Fusion Applications well into the next decade.

The Strategic Role of IBM

As Oracle has formulated its JD Edwards application strategy, it has done so in close collaboration with IBM. This makes sense because all World users and many EnterpriseOne users run their applications on the IBM System i and DB2 database. Many EnterpriseOne customers also use IBM WebSphere middleware to Internet-enable their applications.

Realizing this, Oracle and IBM have taken action to establish a deeper partnership. Within days after Oracle closed its PeopleSoft acquisition, the two vendors began a senior executive dialogue about how to work better together. Cooperation levels have since risen to an all-time high. IBM and Oracle executives now regularly speak at each other's events for customers and partners. IBM has named Oracle an Integrated Partner, the highest level of partnership available, and Oracle made IBM Global Services its Systems Integrator Partner of the Year in 2005. The two companies work together to deliver joint solutions at six of IBM's Solution Centers, and a number of IBM employees work at the JD Edwards campus in Denver. IBM has also increased the staff that it dedicates to the Oracle partnership from fewer than 50 employees to more than 200 people worldwide.

As part of their improved relationship, IBM and Oracle are even cooperating in the area where they compete the most: database and middleware products. As part of that cooperation, the two vendors have agreed to certify both EnterpriseOne and Fusion Applications on their respective middleware suites: IBM's WebSphere and Oracle's Fusion Middleware. As a result, EnterpriseOne customers can expect that their middleware investments will be protected whether they stay on their existing software or upgrade to Fusion Applications in the future.

If there is one area in which IBM and Oracle cooperate most closely, it is in the tuning and configuration of EnterpriseOne and World for the System i. More details about this collaboration will be provided later in this report. For now, suffice it to say that the relationship the two vendors have created in support of the System i gives the product unique advantages as a JD Edwards platform.

What Oracle's Actions Mean for JD Edwards Customers

As the previous pages demonstrate, Oracle's Applications Unlimited announcement was not some sudden change of direction for the vendor. It was a logical extension of decisions the vendor had already made that were favorable towards JD Edwards applications. Taken together, Oracle's actions show that it has embraced the following lines of thinking.

- EnterpriseOne and World occupy a special place in the market that no other applications can easily fill. Their combination of robust functionality, affordability, and ease of use particularly suit them for medium-sized companies that would otherwise take less interest in Oracle's applications.

- The vast majority of JD Edwards customers are happy with their applications and not inclined to move to Fusion Applications or any other competitive software.

- Fusion Applications will not become replacements for EnterpriseOne and World. Instead, they will be offered to JD Edwards users as an optional alternative to upgrading to newer versions of their existing applications.

- Oracle will enhance JD Edwards applications—particularly EnterpriseOne—with many of the technologies found in its Fusion Applications. This will make it easier for JD Edwards users to make the transition to Fusion Applications if they so choose. Ironically, such modernization will make it even less likely that they will do so, as users will gain many of the benefits of Fusion Applications without having to deploy them.

We expect that Oracle will stick to these strategies because it is the only practical way for the company to maintain the loyalty of JD Edwards users and convince them to stay on support contracts. Besides, Oracle has a history of supporting and enhancing the products that it acquires. To this day, for instance, Oracle continues to support the Rdb database that it acquired from Digital Equipment Corporation in 1994.

Taken together, Oracle's actions add up to one simple fact: JD Edwards applications have truly experienced a rebirth. Moreover, they now occupy strategic positions in Oracle's product portfolio. Both existing and prospective customers can expect a steady stream of enhancements to the applications for years to come. This makes it safe for existing users to deploy upgrades and add new modules. It also makes it safe for prospective customers to put EnterpriseOne and World back on their short lists for evaluation. The cloud that once loomed over JD Edwards applications and their users is now gone.

Why Companies Should Consider JD Edwards Applications Today

While JD Edwards applications are once again viable solutions, individual companies still must determine if the offerings are good fits for their needs. After helping dozens of companies to select and deploy ERP applications, Andrews Consulting Group has found that EnterpriseOne and World have unique attributes that make them an ideal match for certain types of companies. Organizations that value the following attributes often find that JD Edwards applications are the best solutions for them.

- ***Integration and breadth of capability***. The modules within EnterpriseOne and World are tightly integrated in ways that make them easier to understand and use than other comparable

packages. This combination of deep functionality and simplicity may be the most important reason for their long-term success.

- ***Industry focus.*** The most successful enterprise software has always majored in meeting the unique needs of specific industries. As Figure 1 shows, JD Edwards applications have the strongest vertical industry functionality in the manufacturing, distribution, and asset-intensive sectors as well as in the construction and property management fields. Companies in these industries often find that JD Edwards applications provide superior support for their unique business processes.

- ***Ease of deployment.*** While JD Edwards applications provide robust support for industry business processes, they do so in ways that make them easier to deploy than many comparable applications. In the industries that JD Edwards applications serve, many companies find that the software can be deployed "as is" with limited need for customization. In addition, Oracle has done much to streamline the deployment process. For instance, the company offers seven EnterpriseOne Rapid Start packages that simplify deployments by providing preconfigured applications, pretested hardware configurations, integrated middleware, and installation and training services. A similar offering known as World Express is available for World users. Oracle also provides its partners with tools that let them create their own Rapid Start configurations to meet the needs of specific industries and countries.

Figure 1: Industries supported by JD Edwards applications

Industries	EnterpriseOne	World
Aerospace & Defense	✔	
Automotive	✔	
Chemicals & Lubricants	✔	✔
Communications	✔	
Construction & Engineering	✔	✔
Consumer Products	✔	✔
Financial Services	✔	
High Technology	✔	
Industrial Manufacturing	✔	✔
Life Sciences	✔	✔
Media & Entertainment	✔	
Natural Resources	✔	✔
Oil & Gas	✔	✔
Professional Services	✔	
Public Sector	✔	✔
Retail & Wholesale Distribution	✔	✔
Travel & Transportation	✔	
Utilities	✔	

- ***Ease of management.*** Once JD Edwards applications are deployed, they frequently cost less to manage than competitive alternatives. In particular, World applications are renowned for their low cost of operations. This is because World was designed as a tightly integrated set of applications that run entirely on the IBM System i.

  By contrast, EnterpriseOne can be deployed on multiple servers, operating systems, and middleware platforms. It can also be accessed by a wider variety of client devices than World. While it usually requires more management resources than World, EnterpriseOne costs less to support than most of its competitors. One advantage of EnterpriseOne is an architecture that allows users to access all applications via web browsers instead of Windows clients. Unlike traditional Windows clients, browsers do not need to be updated when the applications that they access are changed. Compared to Windows clients, browsers are also much easier for most employees to use with minimal assistance. This allows browser-based clients to reduce costs for PC administration, help desk support, and user training.

- ***Low overall cost of ownership.*** Because of their ease of deployment and use, JD Edwards applications often enable companies to support their business processes at a lower cost than competitive products. We base this conclusion on our own experience with clients as well as on formal studies. For instance, a recent study by International Technology Group estimates that the cost to deploy and manage World applications on the System i over three years is 32 to 44 percent less than the cost for similar Windows-based applications. One World user, LaSalle Bristol, supports all of its business operations on an IT budget that is only 0.36 percent of revenues.

  As for EnterpriseOne, our experience with clients indicates that the product has a markedly lower cost of ownership than alternatives such as those from SAP. In many cases, SAP applications take considerably longer to install and require more staff to deploy than EnterpriseOne does. One of our clients—a chemical manufacturer in the eastern United States—deployed EnterpriseOne shortly before a European firm acquired it. Since the parent company used SAP R/3®, our client had to deploy it as well. Though the two applications were functionally equivalent, it took our client twice as long to implement R/3 as it took to deploy EnterpriseOne.

- ***Supports SOAs with less risk.*** Over the next several years, applications that are based on service-oriented architectures have the potential to help companies become more responsive and flexible while reducing the cost of their IT systems. As this report has already discussed, current releases of EnterpriseOne already have many SOA capabilities. Moreover, Oracle intends to incorporate SOA technologies from its Fusion Applications into EnterpriseOne and World. However, Oracle is not rearchitecting JD Edwards applications to support SOAs; instead, it is modifying them "at the margins" in an incremental fashion. This could be an advantage for their users, as deploying SOAs on established applications will likely be less risky than doing so on the next-generation applications that many vendors are developing.

- ***Provides an optional upgrade path to Fusion Applications.*** While most JD Edwards customers will stay on their applications for years to come, Oracle will give them the option to upgrade to Fusion Applications should they have business reasons to do so. The company has already pledged to provide direct upgrade paths to Fusion Applications from EnterpriseOne 8.11 and above and World A7.3 and above. JD Edwards customers will be able to replace their existing modules with comparable Fusion modules at no charge under a "like for like" exchange policy. To simplify the process, Oracle intends to provide upgrade scripts that retain important customizations and configuration settings. IBM, for its part, will support Fusion Applications with the same WebSphere products that many JD Edwards customers use with their existing applications.

- ***Supported by both Oracle and IBM.*** The two vendors have agreed that the JD Edwards community is critical to sales of their respective products. As such, they are working together not only to support JD Edwards applications, but also to enhance them indefinitely. This puts two of the world's largest software vendors squarely behind EnterpriseOne and World.

As the above paragraphs make clear, JD Edwards applications not only have a proven track record, but also have a promising future ahead of them. For the industries that they serve, they combine robust functionality with low costs of ownership and the assurance that they will be supported and enhanced for many years to come. This is why we recommend EnterpriseOne and World to our clients as sound investments that they should carefully consider.

What the IBM System i Brings to JD Edwards Applications

As the previous chapter explained, one of the main reasons that JD Edwards applications deliver superior value is because their powerful functions are highly integrated and easy to manage. These attributes are engineered into the applications by developers who understand that the companies they serve are more interested in managing their businesses than struggling with IT complexity.

Interestingly, another group of IT engineers has the same design philosophy as the JD Edwards application development team. That group has responsibility for the IBM System i, a platform that supports thousands of enterprise applications. The System i provides its users with the performance, functionality, and flexibility of mainframes without mainframe complexity and cost. In addition, IBM engineers System i hardware and software to provide superior support for JD Edwards applications. As a result, the System i complements and extends the value of JD Edwards applications in ways that competitive products can rarely match.

Because the System i is an ideal platform for JD Edwards applications, World runs exclusively on the server. By contrast, EnterpriseOne can run on a variety of hardware and software platforms. However, based on our own experience working with JD Edwards users, we strongly recommend that organizations consider running EnterpriseOne on the System i. We find that the ease of management and long term cost of ownership advantages of this combination make it hard to beat.

What Is the System i?

Unlike typical servers, which can support one or two primary workloads at the most, the System i can run large numbers of workloads on a single system. The system can also be partitioned into dozens of virtual servers, each with its own memory, storage, and operating system. The System i includes a complete toolset to manage multiple workloads and servers as well as a comprehensive security system for protecting all computing resources. The platform also comes packaged with the IBM DB2 database and WebSphere Application Server. All of these components are highly integrated, and many of their functions are automated so that they require less human intervention than traditional servers do.

In a real sense, the System i is a "data center in a box" that includes all the management tools and best practices for running multiple enterprise applications at peak efficiency with the smallest possible staff. It dramatically simplifies the otherwise complex task of managing a heterogeneous IT infrastructure.

One of the key strengths of the System i is its ability to support multiple operating systems and runtime environments. It can run i5/OS, IBM's version of Unix known as AIX 5L, and multiple Linux variants. It can also manage up to 60 Intel processor-based servers running Windows and Linux applications, with each server using the disk storage and network resources of the System i instead of its own standalone resources. In addition, the i5/OS operating system comes with preintegrated runtime environments for C, C++, Java, and RPG applications, among others.

The System i also has some of the most robust virtualization capabilities on the market. Its processors, memory, disk storage, and network resources can be partitioned among as many as 254 virtual servers, with each server running its own operating system image. Resources can be reallocated "on the fly" to different servers as dictated by performance needs. The System i can also automatically provide additional resources to virtual servers as transaction volumes rise. In addition, users can establish Virtual Ethernet connections between servers and storage resources using the high-speed internal network that

comes standard with the system. These connections can be reconfigured from the management console without having to bring down the system.

Besides its virtualization facilities, the System i offers "on demand" technologies that increase its flexibility. Many models come with additional processors and memory that can be activated during peak demand periods. These resources can also be permanently activated as the business grows.

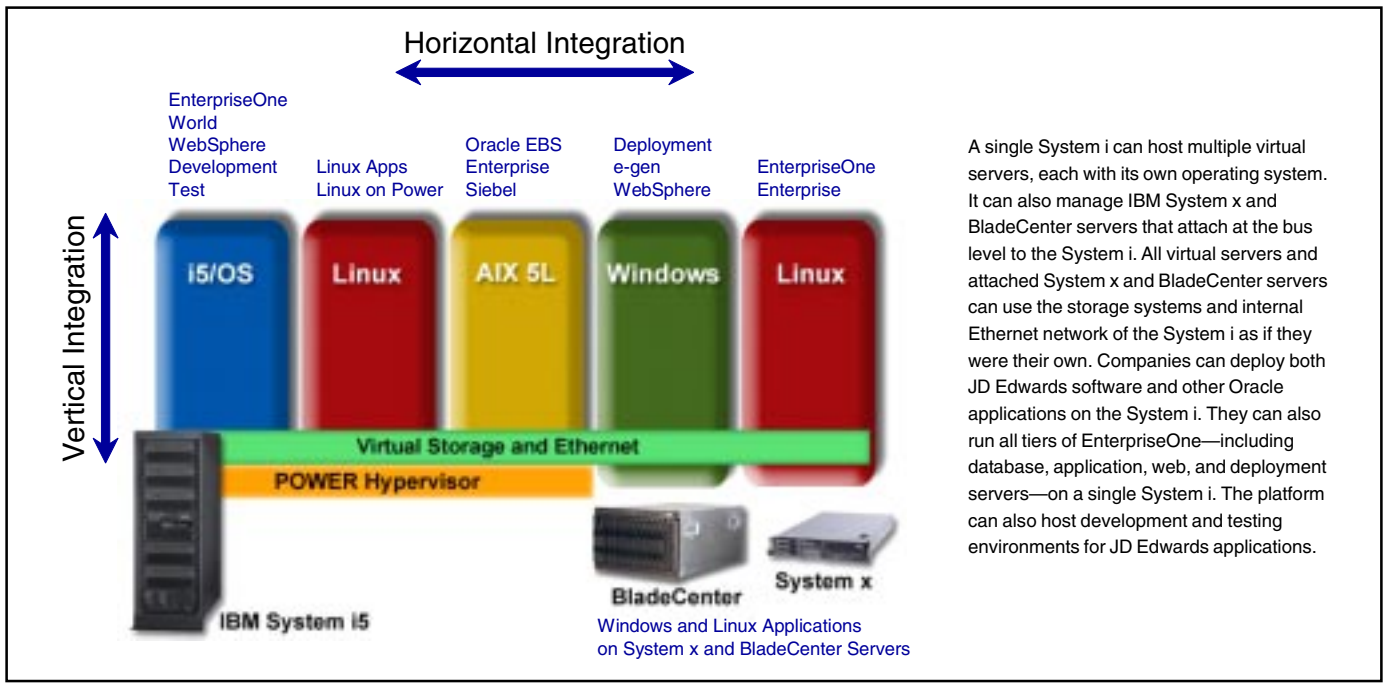
Because of its architectural strengths, the System i is an ideal platform for consolidating workloads from dozens of traditional "single function" servers. Such consolidation can significantly reduce the cost of managing multiple workloads while increasing their availability and security. It can also make it easier and less expensive to provide additional computing resources to applications, as each workload can draw from a common pool of processor, memory, and storage capacity. In many cases, workload consolidation on the System i can also reduce power, cooling, and floor space costs. In short, the System i uses technologies not found on traditional servers to simplify and reduce the cost of supporting enterprise applications.

How the System i Benefits JD Edwards Applications

EnterpriseOne users have many choices when it comes to the servers and operating systems on which they run their applications. For instance, it is possible to host the EnterpriseOne database on a Unix server and the EnterpriseOne application and web servers on separate Windows systems. In our experience, however, heterogeneous server configurations are rarely the most effective way to support EnterpriseOne. In more cases than not, such environments impose additional management and support costs on their users because of their inherent complexity.

By contrast, the System i is designed to support all EnterpriseOne components on a single system image. An organization with i5/OS skills can, for example, run the EnterpriseOne database, application, and web servers on a single i5/OS partition. As an option, each EnterpriseOne server can run in its own partition. Companies with Unix skills can run the same EnterpriseOne servers in AIX or Linux partitions. It is also possible to run all EnterpriseOne components on Intel processor-based servers that are tightly

Figure 2: The System i operating environment for Oracle applications



[Source: IBM Corporation]

integrated with the System i. Regardless of the configuration, all EnterpriseOne servers are effectively isolated from each other, yet can be managed from a single console.

It is also important to note that organizations can support other Oracle applications—including E-Business Suite, Enterprise, JD Edwards World, and Siebel—on System i partitions. Moreover, users can shift resources between applications to meet changing needs without having to power down or reload systems. As a result, applications are frequently more available than when they run on multiple servers.

Another advantage of the System i is the high degree to which IBM tunes the product for JD Edwards applications. For more than two decades, a dedicated team of IBM engineers has worked closely with JD Edwards application developers to enhance the performance and stability of EnterpriseOne and World on the System i. As part of the collaboration, the IBM team works closely with its Oracle counterparts to optimize the System i interfaces that JD Edwards applications use. The IBM team also works closely with Oracle's development and support teams to provide help desk support to their mutual customers. As a result, JD Edwards application deployments on the System i have historically delivered higher levels of reliability and security than competitive platforms have provided. They have also won high marks from users for the quality of the support they receive from both Oracle and IBM.

As part of their collaboration, IBM and Oracle have developed system sizing guidelines and recommendations for running EnterpriseOne and World on the System i that are more comprehensive and accurate than those provided by other vendors. This makes deployment and capacity planning significantly easier and less prone to error. In addition, IBM uses its JD Edwards application expertise to create prepackaged System i configurations for both EnterpriseOne and World. The configurations—known as System i Solution Editions—support specific numbers of JD Edwards users at prices that are lower than those for custom configurations. The System i Solution Editions are extensively tested to ensure that they will perform as expected out of the box.

As a company that has installed JD Edwards applications in many companies, Andrews Consulting Group has firsthand knowledge of the benefits that the System i delivers. At many of our clients' sites, we have found that EnterpriseOne takes less time to deploy, requires fewer IT staff to manage, and is more reliable and secure on the System i than on competitive alternatives. Moreover, the System i deployments often receive superior support from IBM versus other vendors.

These findings lead us to conclude that System i deployments have a lower overall cost of ownership than the alternatives. Our conclusion is supported by a recent study from International Technology Group. The study compared costs over three years for running EnterpriseOne on the System i, Intel processor-based servers from Dell and Hewlett-Packard, and Sun Microsystems servers running UltraSPARC™ processors. In all cases, the System i had the lowest three-year cost of ownership, with savings ranging from 29.6 to 56.9 percent. Significant savings were realized from lower IT personnel costs, as the System i required 40 to 68 percent less staff to support EnterpriseOne than the alternative platforms.

In short, EnterpriseOne customers owe it to themselves to give the System i thorough consideration. Such assessments frequently demonstrate that the platform can deliver superior value.

A Complete Solution

The System i is not the only IBM product that supports JD Edwards applications. IBM has a long history of creating offerings that work in tandem with the System i to support EnterpriseOne and World. These offerings include the following products and services.

System x™ and BladeCenter®. Companies that prefer to run EnterpriseOne components on Intel processor-based servers can do so and still realize the benefits that the System i provides. This is accomplished by tightly integrating IBM's System x and BladeCenter servers with the System i. These Intel processor-based servers can be connected with the System i via Gigabit Ethernet links that use the Internet SCSI (iSCSI) protocol. Once this is done, the System x and BladeCenter servers use the powerful storage and networking facilities of the System i as if they were their own local resources. The System i, in turn, manages all iSCSI-attached servers in an integrated fashion. This allows server administrators to automate or eliminate many of the management tasks that are increasingly monopolizing their time.

DB2 and WebSphere. As part of its close collaboration with Oracle, IBM optimizes its software for EnterpriseOne and World in much the same way that it optimizes the System i. As a result, IBM's DB2 database and WebSphere middleware products deliver excellent performance and manageability when running the applications. This is particularly the case on the System i, which includes an integrated DB2 database and WebSphere Application Server. In our experiences working with EnterpriseOne clients, we have found both of these products to be easy to install, configure, and manage. It should also be noted that the JD Edwards application development team has more years of experience working with both IBM product lines than with other infrastructure software. In fact, Oracle sells an IBM Technology Foundation package—which includes DB2, WebSphere Application Server, and WebSphere Portal—to simplify the procurement process. Companies that are installing EnterpriseOne for the first time should consider these facts when deciding which database and middleware they should use.

Services and financing. IBM's partnership with Oracle extends beyond technology to encompass a comprehensive body of services. These are provided by IBM Global Services, a group that has logged more than 2,000 JD Edwards and PeopleSoft application engagements. The group's offerings range from business strategy development to solution implementation and ongoing support. Another group, IBM Global Financing, can underwrite the cost of servers and infrastructure software as well as JD Edwards applications. The group offers innovative financing programs at below-market rates that can help organizations overcome the "balance sheet barriers" to deploying the solutions they need.

In short, IBM's depth of support for and breadth of experience with JD Edwards applications is unparalleled among IT vendors. It is based on a decades-long history of collaboration with JD Edwards that has continued without interruption since Oracle acquired the applications. IBM's products and services for JD Edwards applications are backed by more financial and human resources than those of other vendors. As a result, companies that choose IBM for their EnterpriseOne deployments can minimize the risks of those deployments while maximizing their benefits. Like the applications they support, IBM's offerings are safe and smart choices that merit thorough consideration by all JD Edwards users.

Conclusions and Recommendations

In the computer industry, few products get a second chance to succeed when doubts arise about their futures. When they do, it is because they meet the needs of users in ways that no other product does. This is precisely what JD Edwards applications and the System i do. Unlike competitive alternatives, they take the complexity out of computing. They provide robust functionality to their users without requiring them to climb steep learning curves. As a result, both products have inspired high levels of loyalty in their users. These are important reasons why JD Edwards applications are experiencing a rebirth and making a comeback on the System i. Put simply, organizations keep buying both products because they meet their needs in a superior manner.

Now that JD Edwards applications once again have a strong future, it is time for existing users to consider upgrading to new releases and deploying new modules. It is also time for prospective customers to put EnterpriseOne and World back on their short lists along with the System i. In our work with clients, we have found that companies with the following characteristics often find JD Edwards applications running on the System i to be an excellent match for their needs:

- They have limited IT staff resources
- They need to simplify their IT systems, consolidate multiple workloads, improve system manageability and availability, or reduce computing costs
- They are seeking applications with robust yet highly integrated functionality
- They are concerned about the cost and effort of implementing competitive solutions like those from SAP
- They are in industries for which JD Edwards applications have been customized
- They want to deploy service-oriented architectures on a proven code base

For companies like the above, JD Edwards applications and the System i are once again a viable, long-term business solution. They are not only a solid combination, but an ideal one. ◆

Andrews Consulting Group

Andrews Consulting Group (ACG) has been helping organizations make effective use of information technology since 1984. Few IT service businesses have achieved as high a level of client satisfaction over an extended period of time as ACG. This success is the result of ACG's commitment to their clients' success coupled with an experienced staff of consultants who possess real-world experience as well as multidisciplinary technical skills.

ACG employs a unique approach to projects called the RITE Approach. ACG founder David Andrews is the author of a highly acclaimed book called *Revolutionizing IT: The Art of Managing Information Technology Effectively* (John Wiley and Sons, October 2002). The RITE Approach is explained in detail in the book.

JD Edwards software has been an important area of focus for ACG for over ten years. More than one hundred organizations have used ACG over the years to get additional value out of their JD Edwards systems. ACG is a past multiple winner of JD Edwards Partner of the Year.

One of the most effective ways in which ACG has helped its clients, especially those who are JD Edwards customers, is in the creation of business intelligence solutions. Numerous JD Edwards customers have business intelligence solutions designed and installed by ACG. This experience allows ACG to implement sophisticated, but cost-effective BI solutions for new customers in as few as five days, far faster than is possible using any other approach.

The ACG Technology Services practice provides experienced architects, designers, developers, and technical support personnel to offer a complete IT solution to our clients. ACG has successfully provided numerous Web-based solutions that integrate with JD Edwards EnterpriseOne and World.

Andrews Consulting Group has been publishing white papers since 1987 when we were the first ones to accurately describe IBM's plans for introduction of the AS/400 (known by the code name Silverlake at the time). Since then, ACG has published over 50 industry reports with a total circulation of over a million copies.

Lee Kroon has been a Senior Industry Analyst for Andrews Consulting Group since joining the firm in 1998. He has over 30 years of experience in the IT industry and has been studying mid-sized companies, IBM, and the ERP market since 1986. Lee's name will be familiar to many in the JD Edwards user community as the author of more than 1,000 articles for professional journals and industry publications. His regular columns for *MC Press Online* are very popular among those interested in the IBM System i and the software packages, such as JD Edwards, that run on it. He welcomes your comments at lkroon@andrewscg.com.

Additional information can be obtained by visiting the company's websites, www.andrewscg.com and www.rapiddecision.net or calling (800) 775-4261.

This report was developed by Andrews Consulting group with IBM assistance and funding. This report may utilize information, including publicly available data, provided by IBM. Other companies may also have provided information to Andrews Consulting Group for inclusion in this report. This report does not necessarily represent IBM's position on these issues.

