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An Oracle White Paper
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# JD Edwards EnterpriseOne In-Memory Sales Advisor on Oracle Engineered System

# A Transformational Solution to Drive Revenue and Ensure Profits

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## Disclaimer

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## Executive Overview

Companies with customer service centers want to take advantage of their customer interactions to drive additional revenue. Managing multiple price lists and promotions makes it difficult for customer service representatives (CSRs) to recommend higher quantities, related products, or promotional discounts to drive sales. Product sales must be profitable to keep a company in business. Executives need insight into the impact of changing sales conditions to their bottom line and to enable knowledgeable decision making. Analysis of current and historical data is an important aspect of future product pricing and promotions.

The JD Edwards EnterpriseOne In-Memory Sales Advisor solution for Oracle Engineered Systems combines the hardware of Oracle (Exadata/Exalogic or SPARC SuperCluster) with the application layers of JD Edwards EnterpriseOne providing unprecedented speed to gather, aggregate, and summarize real-time customer, product, and sales information. JD Edwards EnterpriseOne In-Memory Sales Advisor brings visibility to revenue opportunities during order capture to drive sales, as well as insight into future revenue and profitability to enable proactive decision making for changing sales conditions. The ability to access customer history, product bundles, and volume discounts in real-time enables CSRs to be more efficient and speed up the order capture process. CSRs can recommend quantities and related products, ensure profitability of orders, and communicate product availability during order entry which drives the perfect order and provides a great customer experience. Because the CSR can capture orders efficiently they can enter more orders per day, increasing their throughput and your company's sales volumes. With all relevant information at the CSRs fingertips during order capture, the cost of entering the sales order decreases which translated into higher revenues. Creating the perfect order ensures the customer gets the right quantity of the right product at the right price on the right date. This increases customer satisfaction and loyalty so they remain in good payment standing with you. When customers pay their invoices in a timely manner, your day's sales outstanding improves and the administrative time spent on collections decreases.

For more information on JD Edwards EnterpriseOne and Oracle Engineered Systems please see the *Benefits of Running JD Edwards EnterpriseOne on Oracle Engineered Systems* white paper.

For information on the benefits of using Oracle Engineered systems with the JD Edwards EnterpriseOne Sales Order Management system, please see the *JD Edwards EnterpriseOne Order to Cash on Oracle Engineered Systems: The Value of a Faster Process* white paper.

## Introduction to In-Memory Sales Advisor

Ask any company its goals, and it's not surprising that increasing revenue is always at (or near) the top. To be effective, an organization needs visibility into revenue driving opportunities. When overloaded with cumbersome processes to locate quantity discounts, cross-sell opportunities, and inventory availability, CSRs lose communication with customers decreasing the probability of additional sales and increasing the cost of sales order capture.

CSRs should help drive revenue for your company in addition to providing a great customer experience. The task of recommending higher quantity levels for products or suggesting additional products to the customer is cumbersome. Visibility into real-time product suggestions during sales order entry gives the CSR information to drive additional sales for your company. With CSRs up-selling and cross-selling during order entry both sales volumes and revenue increase. It is not always feasible for companies to evaluate this information during order capture, due to heavy I/O and serialized processing. For example, a company may process up to 300,000 sales order lines per day and millions of historical sales records. Insight into large volumes of data in real-time enables CSRs to leverage sales opportunities and proactively adapt to changing sales conditions during order capture. The large volume of data is compiled, summarized, and displayed for the CSR to make recommendations to the customer in sub-seconds, instead of using error prone, manual processes to locate information which takes minutes and can require return calls to the customer.

JD Edwards' EnterpriseOne In-Memory Sales Advisor leverages Oracle Engineered Systems to offer a compelling solution that sits on top of existing JD Edwards EnterpriseOne Sales Order Management, Advanced Pricing, Inventory Management, and Fulfillment Management information to enable CSRs and executives to increase revenue and profit margin while not interrupting their existing processes. This innovative real-time solution enables faster decision making based on new visualization of summarized large volumes of data within JD Edwards EnterpriseOne.

JD Edwards EnterpriseOne running on Oracle Engineered Systems is the culmination of Oracle's "Engineered to Work Together" strategy. Customers realize immediate business and technical benefits and set the foundation for the next generation of in-memory business applications.

This white paper explores the benefits of the JD Edwards EnterpriseOne In-Memory Sales Advisor solution and point out new and automated features that enable business users to quickly access real-time information on big data during order capture and provide a remedy for manual processes that are holding so many businesses back today.

## Introduction to Engineered Systems

Oracle's engineered systems combine best-of-breed hardware and software components with game-changing technical innovations. Designed, engineered, and tested to work best together, Oracle's engineered systems can power the cloud or streamline data center operations to make traditional deployments even more efficient. The components of Oracle's engineered systems are preassembled for targeted functionality and then—as a complete system—optimized for extreme performance. By taking the guesswork out of these highly available, purpose-built solutions, Oracle delivers a solution that is integrated across every layer of the technology stack—a simplicity that translates into less risk and lower costs for your business. Only Oracle can innovate and optimize at every layer of the stack to simplify data center operations, drive down costs, and accelerate business innovation.

### Oracle Exalogic

Oracle Exalogic is an Engineered System on which enterprises deploy Oracle business applications, Oracle Fusion Middleware, or third-party software products. Exalogic comes pre-built with compute nodes, memory, flash storage, and centralized storage; all connected using InfiniBand in a high redundancy architecture delivering five-nines availability, with fault tolerance and zero-down-time maintenance.

Exalogic dramatically improves performance of Oracle Applications, Fusion Middleware and 3rd party applications without requiring code changes and reduces costs across the application lifecycle, from initial set-up to on-going maintenance, as compared to conventional hardware platforms. Oracle has made unique optimizations and enhancements in Exalogic firmware, Exalogic software, and in Oracle's middleware and Oracle's applications. These include on-chip network virtualization based on near zero latency InfiniBand fabric, high-performance Remote Direct Memory Access, workload management in Oracle Weblogic server, and optimizations in Oracle Coherence and Oracle Traffic Director. Exalogic includes support for a highly optimized version of the Oracle VM, which significantly outperforms comparable virtualization solutions and is an ideal consolidation platform for Oracle Applications. Templates to simplify install, deployment and configuration of applications on Exalogic are available.

### Oracle Exadata Database Machine

Oracle's Exadata Database Machine is Oracle's database platform delivering extreme performance for database applications including Online Transaction Processing, Data Warehousing, Reporting, Batch Processing, or Consolidation of mixed database workloads. Exadata is a pre-configured, pre-tuned, and pre-tested integrated system of servers, networking, and storage all optimized around the Oracle database. Because Exadata is an integrated system, it offers superior price-performance, availability, and supportability. Exadata frees users from the need to build, test, and maintain systems and allows them to focus on higher value business problems.

Exadata uses a scale out architecture for database servers and storage. This architecture maintains an optimal storage hierarchy from memory to flash to disk. Smart Scan query offload has been

added to the storage cells to offload database processing. Exadata implements Smart Flash Cache as part of the storage hierarchy. Exadata software determines how and when to use the Flash storage for read and write as well as how best to incorporate Flash into the database as part of a coordinated data caching strategy. A high-bandwidth low-latency InfiniBand network running specialized database networking protocols connects all the components inside an Exadata Database Machine. In addition to a high performance architecture and design, Exadata offers the industry's best data compression to provide a dramatic reduction in storage needs.

## SPARC SuperCluster

Oracle's SPARC SuperCluster is the world's most efficient multi-purpose engineered system, delivering extreme efficiency, cost savings, and performance for consolidating mission critical applications and rapidly deploying cloud services. Oracle's SPARC SuperCluster represents a complete, pre-engineered, and pre-tested high-performance enterprise infrastructure solution that is faster and easier to deploy than a collection of individual database and application servers. The system combines innovative Oracle technology—the computing power of Oracle's SPARC servers, the performance and scalability of Oracle Solaris, the Sun ZFS Storage Appliance, the optimized database performance of Oracle Database accelerated by Oracle Exadata Storage Servers, and a high-bandwidth, low-latency InfiniBand network fabric—into a scalable, engineered system that is optimized and tuned for consolidating mission-critical enterprise applications.

Oracle's SPARC SuperCluster provides both the capacity for growth, as well as the fine-grained server virtualization needed to isolate individual application components. With multiple layers of enterprise application infrastructure consolidated onto a high-performance, highly available SPARC SuperCluster system, deployment speed, application performance, and availability can all be optimized. Designed as a pre-configured, pre-tested, and ready-to-deploy SPARC SuperCluster engineered system, the solution provides a complete and optimized infrastructure solution for applications, built around robust compute, networking, storage, virtualization, and management resources. The result is a system that is orders of magnitude easier to manage, and up to five times faster to deploy than alternatives, all while occupying considerably less real estate requiring less power. Furthermore, the SPARC SuperCluster system provides full built-in redundancy resulting in a highly reliable infrastructure without single point of failure. An issue with one component will not impact other components of the system offering true isolation. Customers can consolidate multiple environments with minimum disruption, without fear of performance degradation, and the ability to achieve required service levels.

## JD Edwards Technical Foundation for Oracle Engineered Systems

Oracle JD Edwards EnterpriseOne applications have long benefitted from its metadata based architecture which abstracts the applications from the underlying technology infrastructure. This technology platform, delivered in the form of the JD Edwards EnterpriseOne tools set, provides a highly scalable, reliable, and secure platform for running the JD Edwards EnterpriseOne applications. Also included is a broad set of tools for building highly interactive applications, batch processes, workflows, and other technologies required for an enterprise class ERP system.

A major innovation and key enabler of this new class of transformational JD Edwards EnterpriseOne In-Memory applications is the engineering that has gone into the JD Edwards EnterpriseOne toolset to take advantage of the unique and powerful capabilities of Oracle Engineered Systems. This platform has been engineered to leveraging the massive parallel processing capabilities including executing core business logic in multiple, concurrent process threads and managing this expansive thread pool. With this improved platform, more of the processing is done on the super fast database tier, including an expansion in the size of the database table joins in business views, additional join types, and database operators. Finally, since the JD Edwards EnterpriseOne applications are database I/O intensive and much of the processing is done in parallel, the high-bandwidth low-latency InfiniBand network provides a major boost to this new class of applications.

# The Objective: Drive Sales Revenue

For organizations in consumer goods, high-tech, life sciences, and manufacturing industries, JD Edwards EnterpriseOne In-Memory Sales Advisor provides real, demonstrable business advantages that traditional Enterprise Resource Planning (ERP) systems don't deliver.

## Suggest Additional Sales in Real-Time

Pricing is an effective way to encourage your customers to purchase in higher volumes. JD Edwards EnterpriseOne Advanced Pricing enables you to set quantity breaks for prices or discounts based on transaction quantity. CSRs can help increase top line revenue by recommending quantity levels to aid the customer to get the best pricing deal (up-selling). Providing real-time product suggestions not only drive additional revenue; they help reduce the set up and maintenance of pricing discounts and promotions by dynamically evaluating quantity level discounts.

### Recommend Purchase Quantities

JD Edwards EnterpriseOne currently provides the flexibility to set up and apply discounts for a customer based on the quantity of a product purchased. A CSR can view the discounts that apply to each product during order capture. Depending on the complexity of the discount schedules and the number of discounts that apply to a product, it can be difficult to determine what additional discounts could apply if the customer purchased additional quantities. Many companies have multiple price lists that a CSR must sort through to determine the discounts that apply and calculate a new price. Performing this process while on the phone with a customer is time consuming and error prone.

The JD Edwards EnterpriseOne In-Memory Sales Advisor solution builds on the robust functionality in existing JD Edwards EnterpriseOne modules and takes it to another level by enabling the CSRs to view the up-sell opportunities and make quantity recommendations to the customer during order capture. The system builds the up-sell opportunities by leveraging the Oracle Engineered Systems technology of multi-threaded logic processing to read all discounts that apply to the product on the sales order and displays the information in real-time. Based on the setup of pricing rules, the system could be evaluating hundreds of records to determine the up-sell opportunities. In addition to the up-sell quantities, the system uses a visual notification if a free good is associated to the higher purchase quantity, which gives additional incentive for the customer to increase their order quantity. If the CSR does not want to use the up-sell opportunity, the information does not interfere with the existing order capture process. When the CSR makes an up-sell recommendation to the customer, they can update the sales order line with the new quantity in only two clicks. This real-time view of the quantity up-sell opportunities reduces the task of manually determining the quantities to recommend to viewing the opportunities within seconds.

Using JD Edwards EnterpriseOne In-Memory Sales Advisor to view the quantity discounts for products, CSRs will find that this in-memory solution returns results in sub-seconds which is substantially faster than getting the data manually from JD Edwards EnterpriseOne Sales Order Management and JD Edwards EnterpriseOne Advanced Pricing. JD Edwards EnterpriseOne In-

Memory Sales Advisor dramatically decreases the time to recommend up-sell quantities to your customers while reducing the administrative task of locating the opportunities.

**Offer Preferred Products**

JD Edwards EnterpriseOne Sales Order Management enables the set up of alternate or substitute products when the individual product on the sales order is not available. The CSR does not have visibility of these alternate items unless the requested item does not have enough available to fill the requested quantity. Companies often want to offer alternate products to sell a higher margin item, sell a higher quality item, or reduce to inventory.

Using JD Edwards EnterpriseOne In-Memory Sales Advisor to view preferred or alternate products during order capture enables CSRs to up-sell the products and eliminate lost sales. If the original product is not available, the CSR can view the availability of the preferred product and suggest the product to the customer. JD Edwards EnterpriseOne In-Memory Sales Advisor dramatically decreases the time to recommend alternate products, reduces the administrative task of locating the opportunities, eliminates lost sales, and improves customer service.
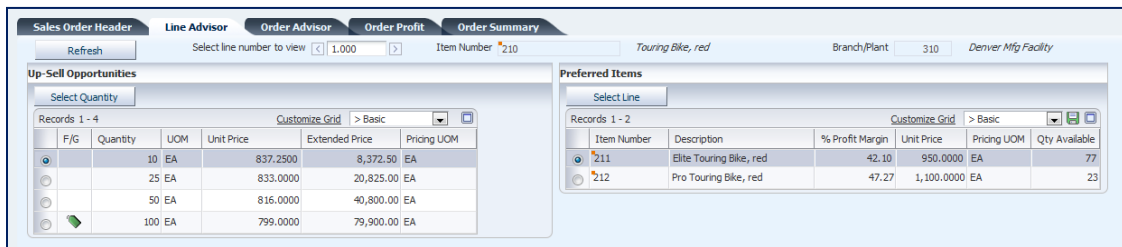


Figure 1. Example of Line Level Opportunities during Sales Order Entry

The left side of Figure 1shows an example of dynamic quantity recommendations for a product on a sales order. CSRs can quickly scan this information, determine which quantities to recommend, communicate to the customer, and then select the quantity to update the sales order line. The right side of Figure 1 shows an example of preferred items recommendations for a product on a sales order. CSRs can suggest the preferred item instead of the item the customer requested, this eliminates lost sales if the requested item is not available.

**Reduce System Setup and Maintenance**

JD Edwards EnterpriseOne Advanced Pricing is a flexible system that enables a variety of pricing rules and structures. Price breaks or discounts can be set up based on quantity, which allow customers to receive lower prices based on their purchase quantity. To recommend that customers purchase a larger quantity to receive a lower price, volume adjustments and a percentage tolerance must be predefined in the system. This determines when the system issues a notification that a product qualifies for an up-sell notification. The CSR have limited visibility to how close the customer is to a quantity level break.

With JD Edwards EnterpriseOne In-Memory Sales Advisor, the system leverages the Oracle Engineered Systems technology of multi-threaded logic combined with expanded business view capabilities to review the entire pricing schedule for quantity level discounts and displays the up-sell

opportunities for the CSR in real-time. This solution takes advantage of existing functionality in the system, requires no additional setup, and can reduce the number of price adjustments. If quantity level breaks exist for a product, the system displays the information regardless of the specified threshold value. This not only notifies the CSRs, but also eliminates the need to set up and maintain volume up-sell adjustments - potentially hundreds of records.

## Cross Sell Products during Order Capture

Product promotions are an effective way to encourage customers to purchase additional related products. CSRs can help increase top line revenue by suggesting related products that are tied to the customers buying history (cross-selling).

**Suggest Additional Products**

JD Edwards EnterpriseOne Sales Order Management enables the set up of related, or associated, products to sell along with the product that is purchased. These associated products are displayed for each individual product on the sales order. In order for a CSR to suggest products that are not already on the sales order, they need to inquire on each individual line, view the associated products, and then determine if the product has already been purchased. Associated products are preconfigured in the system and maintained on a frequent basis to ensure they are up to date. Depending on how customer purchases change during the year, the maintenance of the associated products can be a time consuming task.

Every sales situation presents the opportunity to increase revenues. There are several ways to determine which products should be suggested to customers – based on an individual customer, a group of customers, or all customer purchases.

JD Edwards EnterpriseOne In-Memory Sales Advisor solution includes product suggestions using real-time processing of large volumes of current and historical sales order records. These suggestions are viewable during order capture and available for selection to add to the sales order. Viewing the information does not impact the process to capture the order and does not require the CSR to take any action. Providing real-time product suggestions not only drives additional revenue it helps to reduce the set up and maintenance of pricing discounts and promotions.



| | Quantity | UOM | Item Number | Item Description | Unit Price | Pricing UOM | Unit Cost | % Profit Margin | Qty Available | Branch/Plant | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | EA | 2095 | Safety Helmet | 50.0000 | EA | 17.0000 | 66.00 | 44 | 310 | Cross Sell |
| | | EA | 1001 | Bike Rack - Trunk Mount | 44.9900 | EA | 32.1000 | 28.65 | 279 | 310 | Cross Sell |
| | | EA | 6101 | Standard Pump | 14.5000 | EA | 10.0000 | 31.03 | 20 | 310 | Cross Sell |
| | | EA | 211 | Elite Touring Bike, red | 950.0000 | EA | 550.0000 | 42.10 | 77 | 310 | Frequent |
| | | EA | 212 | Pro Touring Bike, red | 1,100.0000 | EA | 580.0000 | 47.27 | 23 | 310 | Frequent |
| | | EA | 221 | Mountain Bike, Blue | 800.0000 | EA | 459.5000 | 42.56 | 43 | 310 | Frequent |

Figure 2. Example of Cross Sell Opportunities during Sales Order Entry

The above figure shows an example of cross sell recommendations on a sales order. The system displays these recommendations in real-time based on the products requested on the sales order.

## Offer Order Discounts Dynamically

JD Edwards EnterpriseOne Advanced Pricing allows discounts for product bundles (basket and order groups). The system applies the discounts based on these bundles after the entire order is captured.

**Display Order Up-Sell Opportunities**

The JD Edwards EnterpriseOne In-Memory Sales Advisor solution provides order up-sell recommendations during order capture. Order up-selling allows the CSR to view and recommend potential order additions for the customer to receive greater discounts. For example, purchasing a specific dollar or weight amount can receive free shipping or an additional discount off the entire order. Visual indicators for order up-sell opportunities aid the CSR to engage with the customer, or ignore the opportunity if desired.

CSRs can review the information to see what is required to receive the additional order discount or promotion. Insight into the discounts and promotions during the final step of the sales order leaves customers with a pleasant feeling when they complete their purchase and builds customer loyalty.
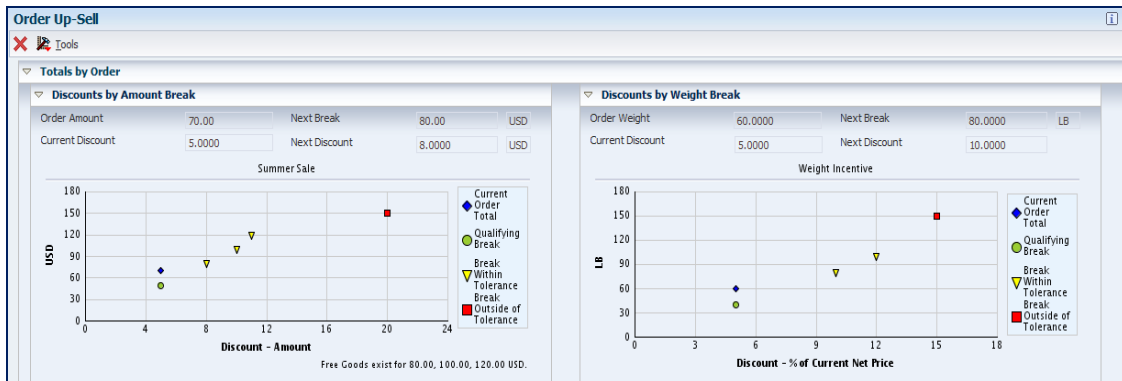


Figure 3. Example of Order Up-Sell Opportunities during Sales Order Entry

The above figure shows an example of potential order discounts based on total order amount and total order weight.

**View Potential Product Bundle Discounts**

The ability to view potential sales for product bundles (baskets) during order entry enables CSRs to drive additional revenue. CSRs can review the information to see what is required to receive the additional basket adjustment (additional quantities of purchased products or additional products). Insight into these product bundles during the final step of the sales order ensures the customers do not miss an opportunity and drives additional sales for your organization.

**Reduce System Setup and Maintenance**

JD Edwards EnterpriseOne In-Memory Sales Advisor includes the ability for the system to dynamically review the entire pricing schedule for basket and order discounts and display the up-sell opportunities for the CSR in real-time. This takes advantage of existing functionality in the system, requires no additional setup, and reduces the number of pricing discounts that are maintained. By analyzing sales history to suggest products, customers can drastically reduce the setup requirements –

reducing thousands of pricing rules to a few dozen records which define the relationships between products and customers. Displaying the information dynamically improves the efficiency and productivity of CSRs, which also drives down the cost of sales order capture.

## The Objective: Improve Profit Visibility

Knowing the profitability for products and customers can help determine how much time is spent with specific customers. CSRs need to have information at their fingertips when taking sales orders to ensure they give each customer the appropriate level of attention.

### Monitor Order and Customer Profit Margins

JD Edwards EnterpriseOne Sales Order Management calculates and displays the profit margin for each product on the sales order. This is good information, but time consuming for the CSR to scroll through hundreds of lines on the sales order to determine if the whole order is profitable. Optionally, the CSR could export the entire sales order to a spreadsheet and calculate the overall profit margin or they could ask IT to create a report to view profit information for sales orders and customers.

JD Edwards EnterpriseOne In-Memory Sales Advisor leverages the existing profit margin information and visually displays the data in charts during order capture. Viewing this information during order entry improves the bottom line by giving CSRs the ability to determine if target margins are being met, and if not recommend high margin products to the customer, or larger quantities of products based on margin.

**Display Order Profit Margin**

With JD Edwards EnterpriseOne In-Memory Sales Advisor, the CSR can view the total order amount, total order cost, and the order profit margin in real-time while capturing the sales order. The profit margin value is calculated using total amount and total cost. The information can be updated as additional products are entered on the order to ensure the entire order is making a profit for your organization.

**Compare Historical Profit Margin for Customer**

Viewing the profit margin for a customer enables the CSR to compare the historical sales orders to the current sales order. The system analyzes the customer's previous sales orders and displays the profit margin information in real-time during order capture. Depending on the time frame for which the customer profit margin is viewed, evaluating large volumes of sales orders during order capture may be necessary.

Without the JD Edwards EnterpriseOne In-Memory Sales Advisor, dynamically evaluating large volumes of data - possibly hundreds of records - while entering a sales order, could slow down the order capture process. The system takes advantage of Oracle Engineered Systems technology of multi-threaded logic combined with expanded business view capabilities to retrieve data and display the order profit chart within seconds, which shows the CSR how the current order compares to the customers

previous orders. Charting the data can display trends in the customer's profit margins – indicating that prices, discounts, or costs are too high or low – enabling proactive response to ensure profitability.
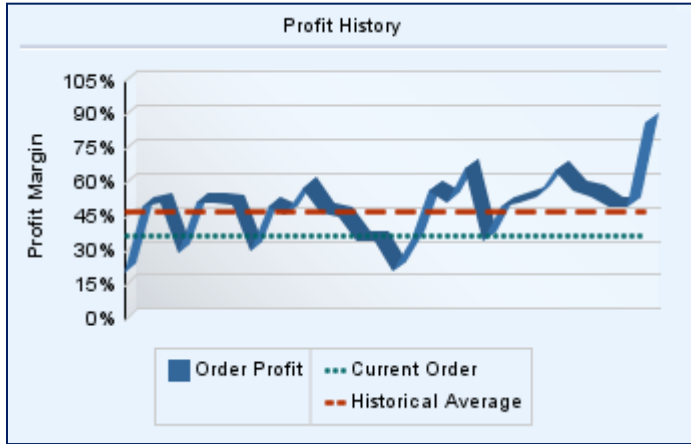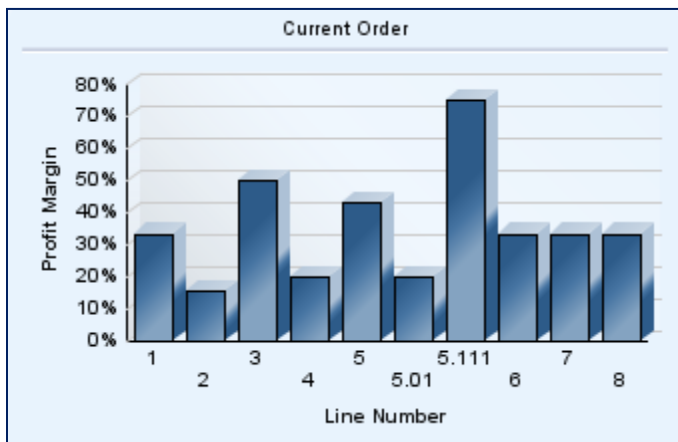


Figure 4: Example of Profit History Chart in Sales Order Entry

The above figure shows an example of the customer profit margin chart on a sales order. CSRs can quickly scan this chart for trends in the customer's profit margin.

**View Product Profit Margins**

Graphing the profit margins for products on the sales order eliminates the time required to scroll through multiple lines on an order. The system evaluates the existing profit margin for each product on the sales order and dynamically creates the graph. Viewing the information in real-time allows CSRs to quickly react to poor profit margins while building order transactions. Sales orders can include hundreds of products; JD Edwards EnterpriseOne In-Memory Sales Advisor enables the system to rapidly display the graph as each line is entered.



Figure 5: Example of Current Order Profit Margin Chart in Sales Order Entry

The above figure shows an example of the product profit margin chart on a sales order. CSRs can use this information to determine if target profit margins are met.

## Improve Revenue and Profit Visibility

Insight into revenue and profit drivers improves executive decision making for product pricing and reduces the risk of incorrect pricing. When sales executives can look at "what if" scenarios, they have better visibility into the factors that drive revenue and profit and make more informed decisions on future pricing and sales.



Figure 6

The variability of cost, price, and forecasts impact both profit and revenue. To analyze the impact of changes to these factors, executives need to run multiple scenarios or simulations.

**Simulate Future Profit**

The JD Edwards EnterpriseOne In-Memory Sales Advisor solution provides real-time "what if" profit simulations. Executives can simulate changing cost and price conditions along with forecasted demand and sales history, to immediately view the impacts. Analysis on "what if" scenarios using large volumes of data enables management to make faster, more informed decisions. They have the ability to run and analyze simulations for a variety of changing conditions quickly without the need to get administration involved to create batch applications or custom reports. This can eliminate the need to inquire on cost, price, and forecasts, export the data to a spreadsheet, and then create scenarios within the spreadsheet to determine how changes to these factors impact revenue and profit.

The solution also include the ability to save the "what if" simulations to inquire upon at a later date and use as a reference for decisions that were made. These saved simulations can be rerun to compare planned to actual results.
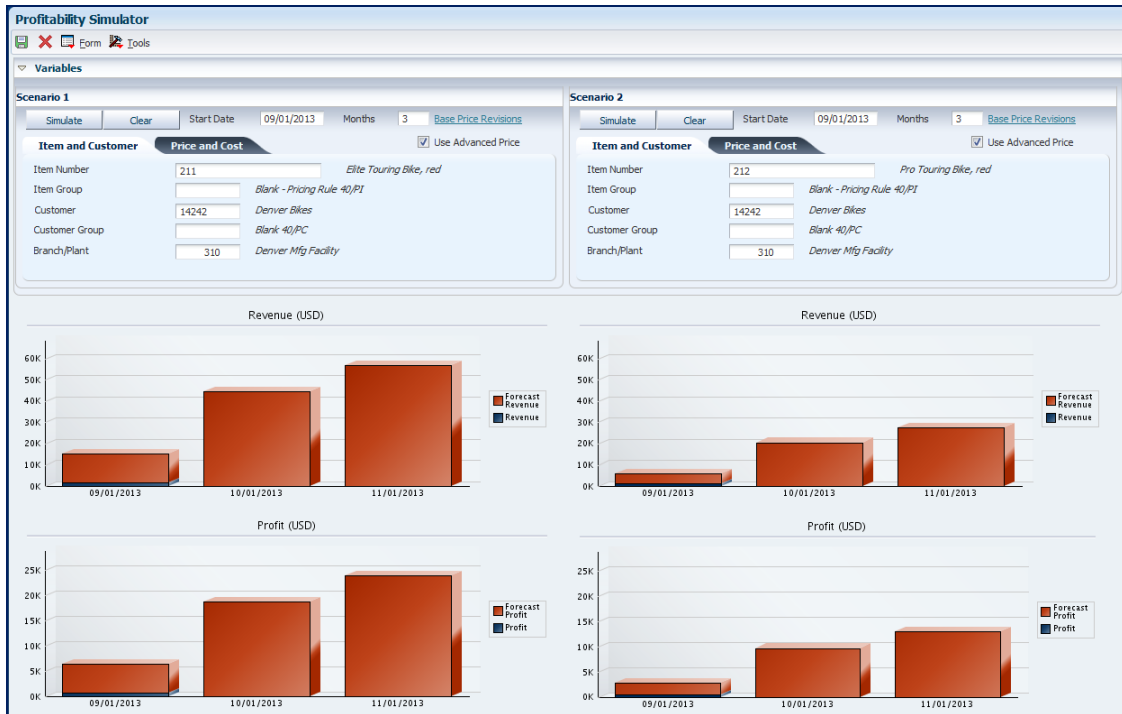
Figure 7: Example of Future Revenue and Profit Charts in the Profitability Simulator

The above figure shows an example of the Profitability Simulator comparing revenue and profit for two products.

**Access to Actionable Tasks**

The system provides proactive control over pricing for the entire product catalog. Executives can quickly update prices with a percentage increase, percentage decrease, or absolute value based on the scenario that was analyzed.

# The Objective: Improve Customer Service

Customers want reliable information about products from salespeople and CSRs that are familiar with their business. Knowing the likelihood that a product is available during order capture provides a level of confidence for the customer that their order will be filled as requested.

## Reduce Lost Sales

Showing availability information during order entry gives the CSR visibility into the likelihood of the order being filled. Real-time insight into product availability and the priority ranking of the sales order lines in regards to other sales demand can help in discussing the probability of product being shipped on time to the customer and reduces the chance of lost sales.

**Insight into Probability of Supply**

Allocating inventory based on priority rank ensures the highest priority orders are filled first, thus improving customer satisfaction. The JD Edwards EnterpriseOne In-Memory Sales Advisor solution takes advantage of existing functionality within JD Edwards EnterpriseOne Inventory Management and JD Edwards EnterpriseOne Fulfillment Management modules.

JD Edwards EnterpriseOne Inventory Management provides supply and demand information for products. This information is valuable for inventory availability, but can be difficult to determine if the product will be on hand for the customer's requested order. Viewing the information in a chart instead of a grid enables the CSR to determine the likelihood that the of the customer's sales order can be filled as requested. Different colored indicators visually show if the order can be completely filled, partially filled, or cannot be filled.



Figure 9: Example of supply/demand potential during sales order entry

The above figure shows an example of the inventory availability for a product on a sales order.

JD Edwards EnterpriseOne Fulfillment Management provides the ability to rank the product demand on each sales order. Viewing the priority ranking while capturing the order enables proactive communication with the customer for the likelihood that the order will be filled as requested. A chart view is available for each product on the sales order, as each one has its own demand and priority rank. The chart enables the CSR to determine the fulfillment potential of the customer's sales order in comparison to other customer's orders.

Figure 8: Example of fulfillment potential during sales order entry

The above figure shows an example of the inventory allocation potential for a product on a sales order that entered into fulfillment.

## Generate Higher Customer Satisfaction

Providing real-time product suggestions not only drive additional revenue, they also build customer relationships.

**Improve Customer Relationships**

Customers feel an extra sense of security when their business and buying patterns are understood. This is best illustrated if CSRs are making recommendations based on the context of the current order, quickly reference previous orders, and address needs while on the phone with the customer. Proactive communication with customers builds the relationship and leaves a better impression than repeated follow up discussions. These relationships create customer loyalty and keep customers returning to purchase products, which drives additional future revenue.

# Performance Benchmarking

Engineered systems offer in-memory capabilities that inspire a new way to look at enterprise business processes. Extreme performance, simplicity, and agility offer immediate benefits for existing applications and business processes. The JD Edwards EnterpriseOne In-Memory Sales Advisor was designed explicitly to exploit the performance of Oracle engineered systems to provide capabilities that were inconceivable on traditional systems. The JD Edwards EnterpriseOne In-Memory Sales Advisor includes new functionality that was not possible without Oracle's Engineered Systems.

**Approach**

The approach to the performance benchmarking for In-Memory Sales Advisor was to measure the performance affects of the primary variables for users during the order capture process. This included two major sets of tests. The first set of tests focused around the variability in the number of concurrent users using In-Memory Sales Advisor. The second set of tests focused around running standard EnterpriseOne "day in the life" (DIL) performance tests (including upwards of 1,000 concurrent interactive users and 400 concurrent batch jobs across EnterpriseOne modules) concurrently with the first set of tests. Both sets of tests were run on two Oracle engineered systems environments:

- Oracle Exadata X3-4 (quarter rack) and Oracle Exalogic X3-4 (eighth rack)
- Oracle SuperCluster M6-32

In both environments only a fraction of the available resources were utilized.

**Results**

The upper range of testing for In-Memory Sales Advisor included tests of up to 500 concurrent users, with tables containing over 110,000,000 sales records, 15,000 adjustment detail records, and all of the In-Memory Sales Advisor features enabled during order capture. To capture the initial sales order line took less than one second for up to 400 users for the initial data load and processing into memory. Subsequent sales order lines for the same customer, using the same set of data resulted in improved response times.
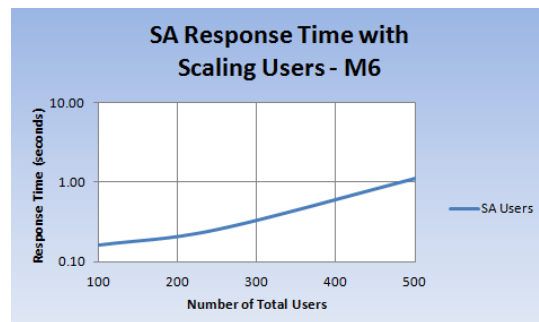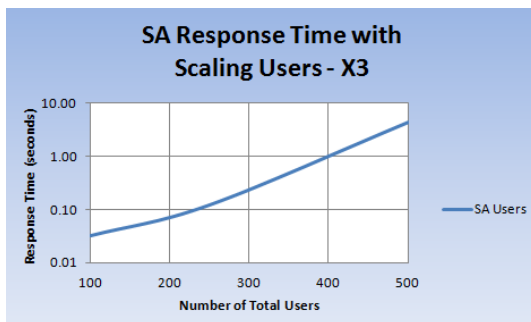


Performance measurements between the X3 and M6 machines resulted in similar performance results.

The JD Edwards EnterpriseOne suite (DIL) running on Engineered Systems has shown an overall performance improvement of three to five times. When running the JD Edwards EnterpriseOne suite (DIL), we had one quarter of the total users assigned to the capturing sales orders using the In-Memory Sales Advisor. There was minimal difference in performance to the DIL measurements when

additionally running In-Memory Sales Advisor. Conversely, there was minimal difference in performance to the In-Memory Sales Advisor measurements when additionally running the JD Edwards EnterpriseOne suite (DIL). See red and green lines in graphs below.
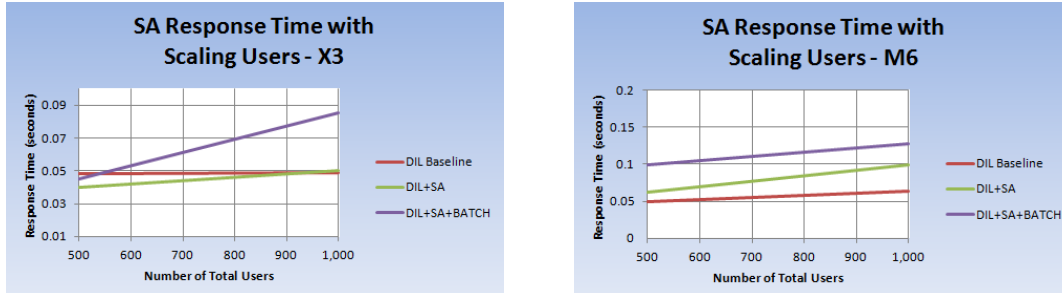


The JD Edwards EnterpriseOne In-Memory Sales Advisor solution is up to six times faster than the existing JD Edwards EnterpriseOne Sales Order Entry application running on a standard non-Exa supported platform. Also, besides significantly faster performance returns for all sales order processes, In-Memory Sales Advisor provides five new innovative processes that occur during the order capture step which have minimal impact to the performance of the application. These new innovative processes were not previously possible in an interactive application; imagine reducing the number of manual processes that took minutes or even hours to automated process which display the same results in seconds.

**Interpretation**

The performance benchmarking showed that In-Memory Sales Advisor successfully aggregated, summarized, and displayed millions of pieces of sales order information during order capture for individual users, as well as concurrent users. Performance benchmarking showed that by using the interactive In-Memory Sales Advisor features users can now up-sell, cross sell, recommend discounts, and view inventory and profit information that was previously only available through long running batch programs and time consuming manual processes.

Performance measurements that included the tests on users and DIL showed that virtually no performance impact was seen for In-Memory Sales Advisor users and the JD Edwards interactive and batch DIL processes, running concurrently. Performance measurements showed that by adding In-Memory Sales Advisor to an existing DIL JD Edwards EnterpriseOne environment had little, if any, performance impact to the DIL JD Edwards interactive and batch processes. And, finally, performance measurements showed that by adding DIL JD Edwards EnterpriseOne interactive and batch processes to an existing In-Memory Sales Advisor environment had little, if any performance impact to the In-Memory Sales Advisor features.

Individual performance results may vary based on system configuration and setup.

For additional information, please see the following link containing white papers and other information related to JD Edwards EnterpriseOne on Oracle Engineered Systems:

http://www.oracle.com/us/products/applications/jd-edwards-enterpriseone/in-memory/resources/index.html

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## Conclusion

The complex order entry processes and revenue opportunities that are present in most large enterprises are problems that are unlikely to go away – in fact, they continue to get more complex. Traditional methods of multiple price lists, promotions, and bundled deals are difficult to manage and access during order capture. As a result, enterprises run the risk of inefficient order entry processes, missed up-sell and cross-sell revenue opportunities, error prone manual tasks, and dissatisfied customers.

JD Edwards EnterpriseOne In-Memory Sales Advisor is a transformational solution that has been developed to address these specific business problems within large, complex organizations. It works with existing JD Edwards EnterpriseOne modules to take advantage of historical sales information and configured information to display revenue opportunities dynamically during order capture. It enables CSRs to guide customers to the right product purchases quickly and easily to capture the perfect order for the customer. By using Oracle Engineered Systems such as the JD Edwards EnterpriseOne In-Memory Sales Advisor solution, executives can analyze scenarios that affect their bottom line and take action to ensure profits are met for their organization, while administration tasks are dramatically reduced. This new solution from Oracle represents a major opportunity for organizations to streamline manual processes to increase top line revenue, improve revenue and profit margins, generate higher customer satisfaction, and reduce system setup and maintenance.

Oracle Engineered Systems offer unequaled performance gains and time reduction for up-sell and cross-sell opportunities, fulfillment probability, and profit analysis. Companies can re-think their internal expectations and improve their processes from minutes or even hours to sub-seconds. This results in less disruption to the business so planning and decision making can be done quickly with up to date and accurate information. Hardware and software designed to work together provides optimization to key processes.

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## Hardware and Software, Engineered to Work Together