

PROFIT

A photograph of a man in a white hard hat and a bright yellow safety vest over a dark suit jacket. He is standing in front of a massive, sprawling pile of shredded and sorted recyclable materials, including plastic bottles, paper, and cardboard. The background is filled with the textures of the waste.

Zero-Waste Innovation

Recology sets its sights
on the future

Mike McClaughlin,
Director of IT, Recology

JD Edwards

SPECIAL ISSUE 2019

IoT Insights >

Change =
Opportunity >

Reimagining
ERP >

Remembering
John Schiff >

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Steltix Uses Oracle's JD Edwards EnterpriseOne to Implement Innovative Warehousing Solution

In just six weeks, Van Hessen stands up a complete warehousing solution that is fast, inexpensive, and easy to use

By Wouter van Beek, Chief Information Officer at Van Hessen

Van Hessen is a global leader in the harvesting, processing, and distribution of natural casings, meat products, and pharmaceutical products. Our company operates in slaughterhouses in 18 countries to secure a constant flow of raw material, ensuring that all operations—including production, cleaning, selection, and distribution—comply with or exceed regulations and internal quality standards.

Van Hessen began working with Oracle's JD Edwards suite of

applications in 2002 and more recently began working with Steltix, a leading provider of JD Edwards software, services, and support. Steltix is an Oracle Platinum Partner specializing in the JD Edwards suite of applications and works closely with Oracle to develop products that add value to customers' investments in JD Edwards solutions.

Q: Why was it so important for Van Hessen to implement a complete warehousing solution?

A: We have operations around the world, including those in Brazil,



Wouter van Beek, Chief Information Officer at Van Hessen

China, the United States, and the Netherlands, so it's essential for us to have a global picture of what we have in stock in order to make smart decisions. When we merged with another company in Brazil, it became clear that with the extra product going through, we needed to not only increase our storage space but also improve our picking to support our new direct storage initiative. We decided to implement scanning, which is essential in direct storage, so we began to investigate solutions that would support scanning in all of our warehousing operations.



For more information, visit
www.steltix.com/oracle-jde

Q: How did JD Edwards EnterpriseOne and the Steltix Appshare platform meet your needs?

A: We were specifically seeking a way to use scanning to reduce errors and decrease picking and putaway time. We looked at the JD Edwards EnterpriseOne solutions because we were already working with JD Edwards applications in our business. With the help of our partner, Steltix, a leading European provider of IT-based solutions, we leveraged the Application Interface Services (AIS) server that is part of the technical foundation of the JD Edwards EnterpriseOne ERP system. With the AIS server, we were able to create simple JavaScript

on exactly the functionality we were looking for, and we were able to do it quickly and at a reasonable cost.

In short, we brought a complete warehousing solution to life in just six weeks, based on the functional JD Edwards Advanced Warehousing module. And we did it without any other third-party warehouse scanning middleware.

Q: Why did you choose Steltix to develop and implement your new warehousing solution?

A: When we did an upgrade in the Netherlands about five years ago, there was a great fit between our people and the

relationship where they just advise you on what you should be doing. We worked together to overcome challenges and moved very quickly through the implementation process.

After that first upgrade, we moved on to perform upgrades with Steltix in several other locations around the world that didn't have JD Edwards solutions. Now we're moving those companies to JD Edwards with the help of Steltix, including a recent project in Brazil where we worked together to make sure the solution complied with some complicated regulations.

We turned to Steltix for our warehousing solution because they specialize in using the JD Edwards EnterpriseOne AIS server to allow developers to interact with JD Edwards and easily integrate mobile and web applications. Using AIS with orchestrations, they can customize the user experience and make it easy to build applications that interact with JD Edwards software.

“We brought a complete warehousing solution to life in just six weeks, based on the functional JD Edwards Advanced Warehousing module.”

—Wouter van Beek, Director of Operations, Van Hessen

front ends that talk to native JD Edwards back-end programs using the application programming interface (API) channel. With the front-end devices installed on our trucks and the implementation of a customized cask labeling system, we were able to bring

people of Steltix right from the start. We are very demanding in our standards and the way we like to work, and Steltix adapted immediately to that. It felt like we were one company working together to achieve a goal, instead of a more traditional consulting

Q: How does your new warehousing solution work on a day-to-day basis?

A: Every day we have trucks arriving at our warehouses carrying hundreds of barrels of material. We need to make sure that all cask movements—such as putaways, order

picking, and transfers—are tracked to make sure every cask is moved to the correct location in the warehouse. In our old system, each cask was moved as an individual item and tracked manually. With Steltix, we devised a solution that uses the JD Edwards software to scan and create “license plates” for a pallet of casks instead of just a single cask. The solution also makes putaway suggestions for staging locations. When goods are scanned, the locations are sent to the trucks, and the trucks drive to the location automatically, which speeds operations.

The Steltix Appshare platform uses JavaScript to turn off-the-shelf Android scanners into JD Edwards–specific warehouse scanners, so the staff in our warehouses can work more quickly. As a result, we've seen a tremendous improvement in picking time, from seven minutes down to two minutes.

Q: Tell us about the power of the JD Edwards solution coupled with the Steltix Appshare platform.

A: The AIS server enables us to use any kind of application, and it doesn't take much time to learn. Without this capability, we would have to buy specialized scanners



and all of their software to run on an extra server, which is expensive and takes a lot of time. But with the Steltix Appshare solution, we can use a generic scanner and an easy-to-use application with no middleware and no need for extensive testing—so it's much less expense. The system is easy to manage, and if one scanner goes down, we can simply buy another one of any compatible type, and we know it's going to work.

Q: What are some of the other benefits you've seen with this new warehousing solution?

A: The implementation was simple and quick—we had our scenarios ready, and when we gave the system to the people

on the floor, it just worked. Within hours or days, any challenge is solved. I have never had any implementation go so smoothly. One of the big advantages of working with JD Edwards applications is that that part of the process is standard, tested Oracle technology. The ability of JD Edwards has already been proven many times over, and it works. And Steltix understood very well what we wanted.

In real numbers, we've greatly reduced our putaway time, and we now have the same number of people doing about one-third more work than before we implemented this solution. Before, first putaways were incorrect probably 20 percent of the time, but now we have 99 percent accuracy. ■



CHANGE AS OPPORTUNITY

WARD QUARLES, Senior Director of Product Management, Oracle

“

JD Edwards EnterpriseOne customers have a platform that allows their organizations to keep pace with the ever-changing external demands of their business, disrupting the status quo.

”

In discussions with Oracle's JD Edwards customers, I often describe change as an interruption of the status quo. For most, that means an interruption of outdated, rigid processes that are enforced by IT hierarchy.

JD Edwards EnterpriseOne customers have a platform that allows their organizations to keep pace with the ever-changing external demands of their business, disrupting the status quo. It's a platform that enables innovative customer outcomes by embracing digital technologies to foster transfor-

mation and that delivers personalization and extensibility solutions to help organizations along their journey.

In this special JD Edwards edition of *Profit*, we are showcasing those customer journeys and taking a closer look at the new JD Edwards solutions that can help unlock and create digital value.

For example, there is now a way to make simple user interface (UI) changes without cracking open the code. Personalization and configuration frameworks empower citizen developers to tailor the

UI with watchlists, saved queries, grid formats, and more. Better still, these changes are user-driven and not impacted by future upgrades—with no custom code and no IT dependency.

In addition, JD Edwards EnterpriseOne notifications—35 preconfigured notifications based on internal data or external systems and ready for use right out of the box—keep users informed of events within JD Edwards EnterpriseOne. Messages are sent to subscribers via the JD Edwards UI, the work center, email, or text. The notifications framework works together with JD Edwards EnterpriseOne Orchestrator and JD Edwards EnterpriseOne Watchlists Mobile through a digital mesh, to bring awareness of activity that may require a response.

IoT and machine-to-machine communications are another example of new functionality that allows organizations to solve their most chal-

“

We are enabling our customers to see change as opportunity and to turn big opportunities into success.

”

lenging business problems. These communications work by using sensors to collect information such as temperature, geopositioning, pressure, or vibration. Collecting data from machines enables organizations to integrate this information into their business processes to make more-intelligent decisions, reduce costs, and create new revenue streams. JD Edwards EnterpriseOne Orchestrator works with this data to make decisions—in many cases, without human involvement.

Finally, chatbots are virtual assistants that can create user experiences via conversations and dialogue using natural language and regular business vocabulary. Machine learning enables a business

process to collect information from a variety of sources and become intelligent. An example would be the creation of a virtual assistant version of an accounts payables manager who is aware of the rules for a voucher approval process. Through automation of voucher batch approval, the time for completing this business process is drastically improved. But more importantly, the virtual assistant is tackling the repetitive tasks of reviewing and approving the voucher batches, thereby freeing up the accounts payables manager to focus on exception handling and complex business conditions.

Visit the [Oracle JD Edwards YouTube channel](#) to see these real-world solutions solving

real customer business issues. [LearnJDE.com](#) is another great source of customer success stories.

This new edition of *Profit* shows how JD Edwards EnterpriseOne, as a platform of innovation and intelligence, can enable process improvement through personalization and configuration frameworks, can automate the collection of business data, and can learn an organization's business processes—assisting in making decisions that put customers first. We are enabling our customers to see change as opportunity and to turn big opportunities into success. □

ACTION ITEM

- [Learn more about JD Edwards Enterprise One.](#)

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Help**

**Smart
Scheduler**



JDE Sign...

 **Lift & Shift
Manage**



JOHN SCHIFF 1947–2018

BY LYLE EKDAHL

John and I worked together in Denver for roughly 15 years.

John was my right-hand man, a “partner in crime” as we sought to do the right thing for customers, partners, and employees, and someone to have fun with in a corporate environment. That’s how we became friends. Because of John, I see the flowers.

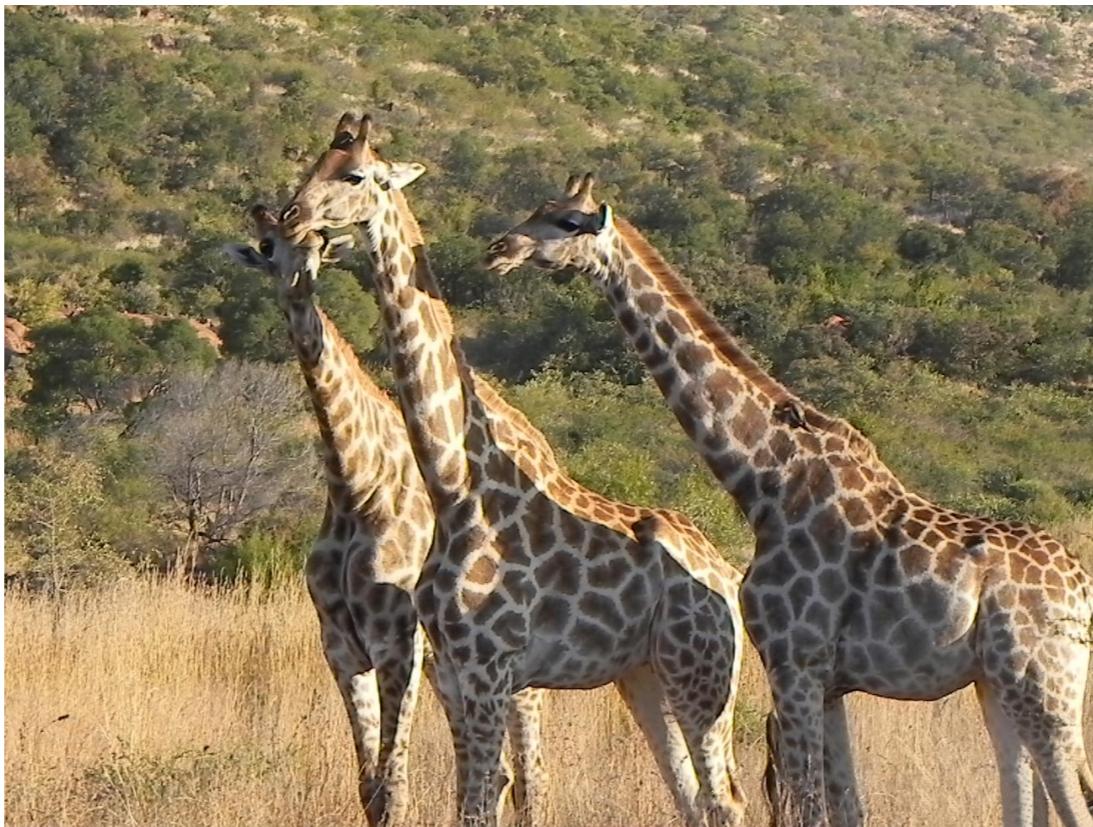
John Schiff was born on December 4, 1947, to a South African mother and a German father. His father had fled Nazi Germany and settled in South Africa, where his mother lived. John was raised in an extended family home with his grandparents. He was wicked smart but not really into the formality of schooling. John struggled getting his degree at the University of Pretoria—not because he couldn’t do the work but because he had so many distracting interests.

John loved travel and making new friends. One of John’s favor-

ite destinations was in the bush on safari with his bag of camera gear in tow. John’s love for African wildlife, especially elephants, shone through in all his photography. Once I asked him if he owned a tie that did not have an elephant on it. He replied, “None that ever saw the light of day.”

On one hand, John was very traditional—he loved classical music, classic Mercedes-Benz automobiles, his church, and his family. But he was a teaser and a jokester with a love for rugby and great wine. John loved to share his passion for wine; even as he became ill, he began construction on a wine cellar in his home. He told me that he wasn’t sure if he would ever have the chance to enjoy the cellar, but it was important to him that wine culture continue in his house with his family.

What I will remember most about John was his deep, fierce, and protective love for his wife



Eileen; daughter, Cara Schiff; son, Alex Schiff; brother, Peter; son-in-law, Patrick Mann; daughter-in-law, Madeline Elise Schiff; and beloved granddaughter, Bridget Rose. Family always came first for John.

Professionally John will always be remembered as the “god-father” of JD Edwards. Who knew that his IBM career and contributions to designing the System /38 would also lead him to JD Edwards? John was a mentor to many and a great listener. He could smooth the most difficult of work issues, and he was always

considerate and inclusive. John’s knowledge of Oracle products, our customers, and our partners was encyclopedic. After his retirement, not a week went by where I didn’t miss his real-time input on some vexing issue.

John was a star with his own user group and partner fan club. And it was not only because John was kind and funny and made everyone feel like they were valuable contributors: It was because he took time to get to know so many of us personally and to touch our lives outside of work. There are

One of John’s favorite destinations was in the bush on safari with his bag of camera gear.

so many stories of the flowers that would show up at a sick mother’s bedside or of sharing concern for a friend in need. The best memories about John and his life account for so many friends, so many stories, so many avocations, and so many bottles of wine shared.

John said that it was easy to look at a garden and see all the weeds and the work to be done. But staring at the weeds robs us of the joy and gratitude in our lives. Although he knew his death was inevitable, it didn’t stop him from seeing the flowers.

We have created the fundraising team “Schiff’s Soldiers” in John’s honor and encourage everyone who was touched by John to contribute to this garden of memories. Funds raised will be used for leukemia research and support. □

Lyle Ekdahl is senior vice president for product development at Oracle.

Velocity Makes the Case for Oracle's JD Edwards EnterpriseOne on Oracle Cloud

Helping a global company to move rapidly to Oracle Cloud Infrastructure

By Paul Shearer, Director of JD Edwards Professional Services at Velocity Technology Solutions

Over a decade ago, Velocity Technology Solutions pioneered Oracle's JD Edwards World and JD Edwards EnterpriseOne hosting. Today, we remain a leader in cloud-based solutions that help customers use JD Edwards solutions to capitalize on the unique strengths of their business. One of our customers, a leading global animal health and nutrition company, develops, manufactures, and globally markets a broad range of products for food animals to help prevent, control, and treat diseases and enhance

nutrition. When they were ready to move to a cloud-first strategy, we were there to help them make the most of their investments.

Q: Tell us about the company's production environment and Velocity's relationship with them.

A: The company has 14 plants and 4 labs around the world, supported by four data centers. A little more than 10 years ago, they decided to move from disparate, uniquely designed AS/400 applications for each of their divisions to a global deployment of Oracle's JD Edwards



EnterpriseOne as their primary enterprise resource planning (ERP) solution. They engaged us as their private hosted partner to run the infrastructure, platform, and application layers of their JD Edwards environment so that they could focus on running their business.

In 2014, we worked with them on an upgrade to JD Edwards EnterpriseOne 9.1. By 2018, they realized that their solution was becoming dated, and the cumulative effect of applying patches was affecting the

Velocity

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expertise/jd-edwards](http://www.velocitycloud.com/expertise/jd-edwards)

quality of their production environment. After discussions with us and Oracle, the company decided it was time for an upgrade. They engaged us to upgrade them to JD Edwards EnterpriseOne 9.2 and deploy it on Oracle Cloud.

Q: What was the business decision that led to Oracle Cloud?

A: The company had embraced a “cloud-first” strategy and sought cloud-based solutions that could offer them capabilities that are efficient, low cost, repeatable, sustainable, recoverable, and secure—essentially, commodity-driven services. They knew that JD Edwards EnterpriseOne 9.2 included business enablers that supported their cloud-first strategy—as well as the scalability they wanted to support their growing business.

“All of us were committed to staying cost-neutral throughout the migration, which was completed on time and on budget.”

—Paul Shearer, Director of JD Edwards Professional Services, Velocity Technology Solutions

We also helped them understand that it was time to upgrade their legacy hardware. By shifting to the high-availability, highly recoverable Oracle Cloud Infrastructure,

the company would upgrade from standard to enterprise, getting the Oracle Advanced Compression in-memory feature and the high-performance system they needed, with room to grow.

The company used the upgrade to JD Edwards EnterpriseOne 9.2 as the vehicle to make the move to Oracle Cloud Infrastructure. In this new world, Velocity would continue to manage their applications for them. Oracle Cloud Infrastructure is highly optimized for Oracle applications such as JD Edwards EnterpriseOne and Oracle Database 12c. The company determined the decision was cost-neutral with a lot of upside, which made it pretty straightforward. And because it aligned so well with their business strategy, it was an easy sale internally.

Q: Tell us about the process of moving the company to JD Edwards EnterpriseOne on Oracle Cloud.
A: Oracle project managers gave the

company a thorough rundown on JD Edwards EnterpriseOne 9.2 and the rich features it had to offer. They explained how Oracle Cloud Infrastructure was different from Velocity data centers, and how public cloud differed from private cloud.

When they understood Oracle Cloud Infrastructure and how Velocity would be their managed service provider, the company saw that this could become their game changer. Velocity brings the right people to the table at the right time—and we’re ahead of the curve when it comes to understanding Oracle technology and helping our customers get the most from their applications.

The company used the Velocity Zoom tool to help them understand which programs their people were using. The Zoom tool captures complex data from various sources to reveal emerging patterns, bottlenecks, human productivity insight, and transactional analysis in real time. Zoom helped the company measure end user response times, apply benchmarks, and eliminate unnecessary modifications.

Q: Tell us about the implementation and how long it took to go live.
A: The company scheduled seven months

from ramp-up to go-live. Because the company manufactures a perishable, seasonal product, it's challenging for them to pick a go-live date. They chose November 2018 and built their calendar backwards from there to ensure that the system was validated and tested through all countries and all of their plants by their deadline.

The company was committed to meeting their budgets—and to being cost-conscious for the migration. Because they wanted to accomplish this move in seven months, they decided not to, initially, take advantage of all of the feature richness in version 9.2. They took a one-for-one approach in terms of business functionality from the Velocity data centers to Oracle Cloud Infrastructure.

We started by pulling together the company's server footprint for Oracle Cloud Infrastructure, and we incorporated servers to allow them to add mobility, IoT, and proactive alerts. All of us were committed to staying cost-neutral throughout the migration, which was completed on time and on budget.

Q: What are some of the benefits the company has enjoyed since upgrade?

A: Overall, the upgrade boosted the performance of their JD Edwards

EnterpriseOne solution to three times as fast as it had been. At first, between 4 p.m. and 6 p.m. every day, the system would slow down for no apparent reason. We used the Zoom tool to quickly identify the source of the system bottleneck correlating with the slowdown and scheduled additional CPUs to be added to the database every day at 4 p.m. and then taken away at 6 p.m. Because they were in the cloud, we could do this without interrupting any operations. This gave us the time to find the root cause and fix the problem. When response times went back to normal, we turned the increased capacity off, saving the company money. They couldn't have done this on other cloud services without paying hundreds of thousands of dollars for additional database licensing. Because of the nature of Oracle Cloud, their net cost was just a few hundred dollars.

A huge benefit of this upgrade is the speed with which the company can detect and solve issues. For instance, one of their managers of operations watches for sales orders that are missing freight information, so they built a watch list for her. After they implemented the watch list, she caught an order with missing freight information seconds after the customer service rep

had entered it, before it was too late in the business process. That ability to get ahead of problems before they get out the door is of tremendous value.

Q: How do Velocity and Oracle Cloud together deliver the capabilities, performance, and cost savings that the company needs?

A: The company's move to Oracle Cloud gives them the technology to be nimble and make faster decisions that benefit the business—and they look forward to enjoying the feature-richness of JD Edwards EnterpriseOne 9.2 on Oracle Cloud Infrastructure as they continue to expand around the world. Being on Oracle Cloud and having Velocity as their managed services partner gives them a lot of stability and a lot of confidence. ■

BY MONICA MEHTA
PHOTOGRAPHY BY BOB ADLER/GETTY IMAGES

ZERO-WASTE INNOVATION

Recology meets ambitious sustainability goals with Oracle's JD Edwards solutions.

With an ambitious vision of "a world without waste," Recology has its sights set on the future. The 100-year-old recycling and waste management company bills itself as a "resource recovery" leader,



using new technology to sort and salvage landfill waste for compost, recycling, and reuse. In addition to innovative trash processing, the company actively provides outreach and education and works in the community to promote its zero-waste mission—with results that are transformative for the environment.

In its San Francisco headquarters, for example, the company worked with the city government in 2009 to pass the Mandatory Recycling and Composting Ordinance, which requires residents and businesses to presort their waste into recyclables, organics, and landfill waste. As a result, since 2012 San Francisco has diverted 80% of waste away from landfills—the most of any US city.

Such a forward-looking vision requires next-generation technology—not just in the recycling facilities but also in the back office. The leaders of Recology, one of the nation's 10 largest 100%-employee-owned companies, wanted their employees to have mobile capabilities to access everything from financials to



SNAPSHOT

RECOLOGY
recology.com

Headquarters: San Francisco, California

Employees:
Approximately 3,800

Oracle products:
JD Edwards
EnterpriseOne 9.2,
Oracle Taleo

MIKE MCLAUGHLIN

Director of IT

Length of tenure:
30 years

Personal mantra:
“When was the last time you did something for the first time?”

“

At this point, probably 99% of the time, we can accommodate whatever [our employees] need.

—Mike McLaughlin, Director of IT, Recology

”

human resources. They wanted to implement IoT solutions to better manage their 2,000-plus trucks. And they wanted to utilize new, modern capabilities continuously, without potentially disruptive and costly upgrades to their systems.

With these goals in mind, and with the assistance of Oracle partner Grant Thornton, the company upgraded to Oracle's JD Edwards EnterpriseOne 9.2 in 2018 and started down a path to digital transformation.

CONTINUOUS DELIVERY

Recology's roots are in scavenging. Its founders immigrated to San Francisco from Italy in the mid-1800s and became scavengers, sorting through trash to find items that were salvageable and reusable. Although the

company's name has changed through the decades, the descendants of its founders have long continued to be active company leaders, including its current CEO, Mike Sangiacomo.

In 1986 the company, then Norcal Solid Waste Systems, moved to an employee stock ownership model. Today Recology remains 100% employee-owned, with approximately 3,800 employees at more than 60 offices and facilities and about a million customers across California, Oregon, and Washington. Minority and women employees own more than 56% of the value of the company.

To meet its ambitious zero-waste goals, Recology continuously researches and implements new technologies for waste processing.

Among its current innovative technologies are optical sorting, which automatically sorts plastics with an infrared sensor, based on their size, shape, and structure; negative-aerated static pile composting, a simple and inexpensive approach to composting large volumes of organic waste; and a landfill gas capture system that turns the methane gas generated by landfill into electricity that powers homes and businesses nearby.

In the back office, upgrading to JD Edwards EnterpriseOne 9.2 "falls in line with our company's strategic vision to be at the highest level technologically and to bring new features and functionality into the company," says Raj Uppal, manager of enterprise resource planning (ERP) at Recology.

80

Percentage
of waste San
Francisco
and Recology
divert from
landfills



Recology has used JD Edwards software since 1999, starting with JD Edwards World. In 2006 it implemented Oracle's JD Edwards EnterpriseOne 8.0, which coexisted with World,

and it stayed on that platform until its 2012 migration to JD Edwards EnterpriseOne 9.1. Now, with JD Edwards EnterpriseOne 9.2's continuous delivery model, the company no longer needs

to schedule and perform major upgrades. Instead, it receives recurring updates to the ERP system incrementally two or three times a year and can select which new functionality to add.

Recology's Director of IT Mike McLaughlin (left) with Manager of ERP Raj Uppal

"It's not all or nothing. We can pick and choose which upgrades we want to apply, making our sprints to those updates smaller and more effective," says Uppal. "We felt that functionality and the future that it holds add a lot of value."

"Now, it's nice to be able to say to our employees, 'Tell us what you need, and we'll bring back an answer,'" says Recology Director of IT Mike McLaughlin. "At this point, probably 99% of the time, we can accommodate whatever they need."

GAINING MOBILE CAPABILITIES

Recology uses JD Edwards EnterpriseOne throughout the organization for finance, human resources and payroll, capital asset management, order management, health and safety, and leasing. With its 60 offices and facilities spread over three states, plus countless customer locations to service, Recology's employees need to be able to access information anytime from anywhere.

McLaughlin plans to implement JD Edwards EnterpriseOne 9.2's mobile capabilities for the approvals process for purchasing and payables and potentially for time approvals as well. The finance department is interested in automating as much of its process as possible and having it accessible via mobile devices.

Much of Recology's waste management work is done on its 2,000 trucks. The company's 2012 upgrade to JD Edwards EnterpriseOne 9.1 enabled paperless fleet maintenance through the capital asset management module. Mechanics can now see their work orders in the system and fill them out, giving company managers real-time information instead of their having to chase down paper orders to get current information on vehicles.

With the new functionality of the JD Edwards EnterpriseOne UX One feature, users will have access to the system through role-based landing pages and forms. Recology was able to personalize these forms easily

889,000/112,000

Number of residential/commercial customers served by Recology

within standard applications, eradicating the need for customized applications. For example, Recology's health and safety team needed a few changes to the fields of the JD Edwards health and safety module, which streamlines health and safety processes and creates one central electronic repository for documents. Uppal said the team was able to personalize the standard application by utilizing form extensions instead of building and deploying a customized application.

"Changing an application to a user's needs became easier by using the form personalization and form extension user-defined objects," says Uppal. "It simplified the experience of form-level changes and does not create a barrier to adopting future new updates from JD Edwards."

HOW IT STAFF CAN BUILD A PARTNERSHIP WITH BUSINESS

Over the past few years, the role of the IT department has changed drastically—and perhaps no one understands that better than Mike McLaughlin, who started in Recology's IT department 30 years ago. McLaughlin, now director of IT at Recology, shares his advice on how today's IT leaders can develop a trusted partnership with the business

to meet company goals.

1. Develop relationships with business.

When McLaughlin started in the early 1990s, IT staff traditionally stayed in the computer room or the data center and interacted with business requests through tickets and emails. That approach no longer works. "You need to be close to your business units, understand them, and know what they're doing," says McLaughlin. "You need to be in a position where they think automatically, 'I need to talk to IT,' so that they don't just start shopping and go out and find something—you need to build that relationship so that you

are part of the discussion."

2. Collaborate on solutions.

Without working together, IT staff risks creating systems that business users don't want to use or that don't meet the business's needs. "We spend hours and hours with our business counterparts, extracting everything they have to give us, and then building and finding solutions collaboratively," says McLaughlin.

3. Maintain consistency.

Provide consistent interaction for your customers, no matter what the process, so that they receive the same type of performance and deliverables with each contact. "They are not looking for a new experience each

time they interact with you," says McLaughlin.

4. Upgrade. It's very important to remain current, both to keep up with competitors that are gaining new digital capabilities and to lower long-term costs and business interruptions. "Companies may think they're saving a bit of money now by not upgrading, but they will end up spending more in the long run," says McLaughlin.

5. Deliver faster. IT staff must keep up with the pace of business needs and, when possible, proactively provide solutions to problems that arise. Says McLaughlin, "You must always find a way to deliver your product or services faster than expected!"

AN IoT-ENABLED FLEET

Another transformative technology Recology is implementing in the back office is IoT. Currently truck drivers report fuel levels to the

office through a manual form and an office worker has to key that information into the fleet management module ("Truck 123 pumped 75 gallons today"). Soon an IoT

device attached to each truck's fueling system will automatically sense and send that information directly to the JD Edwards module—eliminating the need

for human intervention.

New trucks will be outfitted with IoT devices tied into their Controller Area Network (CAN) bus—a message-based protocol that enables devices to communicate with each other. These devices will collect more than 1 million data points every day from every vehicle, including the amount of fuel burned, throttle position, speed, and hydraulic actuator movement. McLaughlin and his team will be able to decide which data to feed into the ERP system so managers can analyze the information coming in and manage the fleet more efficiently. “From a fleet management perspective, automating this type of data collection will save a lot of time, allowing drivers to spend less time maintaining their trucks and more on route pickup activities,” says McLaughlin.

Once the IoT system’s gateways feed all this data into the fleet management module, an analyst or a manager can use the JD Edwards EnterpriseOne Orchestrator feature to create actionable business processes



based on the data. For example, if the fuel level is low, the Orchestrator can trigger an email to the truck driver to refuel the tank the next morning. If a truck component displays an error, the Orchestrator can signal a process to schedule the truck for repair. Taking human touch out of these

processes frees up resources to focus on tasks that create value for customers, such as conducting waste audits to find more ways for companies to do recycling and composting.

“We are always on the lookout for technology that will enable us to perform better for our cus-

Recology's Manager of ERP Raj Uppal

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We are always on the lookout for technology that will enable us to perform better for our customers.

—Raj Uppal, Manager of ERP, Recology

”

tomers,” says Uppal. “Automating these types of tasks will allow us to do that.”

FUTURE FUNCTIONALITY

By the end of this year, private companies will need to overhaul their accounting approach to almost all types of leases—including real estate, vehicle, and equipment leases—to comply with new global lease accounting standards (FASB 842). This is top of mind for Recology’s finance team, and McLaughlin plans to use newly updated functionality in JD Edwards EnterpriseOne Rental Management to meet those standards. Also, Uppal plans to leverage additional features of the ERP system, including role-based landing pages, prebuilt orchestrations,

and an inbound/outbound REST-based platform for integration with other systems.

Most importantly, JD Edwards EnterpriseOne 9.2’s continuous delivery model and modern digital capabilities will enable Recology to better meet business challenges. Last year China announced that it would no longer accept recyclable materials from foreign countries, causing the US to lose its primary destination for recyclable paper and plastic. In response, the company has stepped up its own processing efforts, upgrading its largest recycling facility and encouraging customers to recycle more and put less in the trash. With greater automation, mobility, and flexibility in its back office, Recology can focus on these

types of important tasks.

“The upgrade to 9.2 has put us on track to transform our business,” says McLaughlin. “All of the things we’ve talked about wanting to do, we can now do them. We’ve got a working application that is meeting our needs today and has all the capabilities to grow for tomorrow.” □

Monica Mehta (monica@mehtawriting.com) is a freelance writer and a frequent contributor to Profit.

ACTION ITEM

■ Learn more about JD Edwards EnterpriseOne UX One.

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WORTH THEIR SALT



Insights from JD Edwards and IoT help Refinaria Nacional de Sal thrive in the Brazilian salt industry.

BY ALISON WEISS

PHOTOGRAPHY BY PAULO FRIDMAN

Left to right: Applications Coordinator Eduardo Galhardi, IT Manager Wilker Costa, and Systems Development Coordinator Luciana Bonadio

Cabo Frio, on the coast of Rio de Janeiro, Brazil, is a popular vacation destination—tourists are drawn to its gorgeous white-sand beaches and bright-blue ocean water. It is also one of the most ideal locales in Brazil for salt production, because it boasts little rainfall, ever-present winds, a flat landscape, abundant sunshine, and the Araruama Lagoon, the world's largest hypersaline lake with a salinity index greater than that of the ocean.

The region has been known for salt as far back as the 16th century, when salt was produced naturally in the recesses of the lagoon. By 1824 the first salt-producing company was established at the behest of Emperor Dom Pedro I, the first ruler of the Empire of Brazil. In the 1930s, the region supported approximately 120 salt operations, or "salinas," dedicated to producing salt from the lagoon's salt marshes, where wind and sun cause the water to evaporate and leave behind salt to be harvested, cleaned, and refined.

Building on this rich history,



the Refinaria Nacional de Sal S.A. was founded in 1949 to produce salt from Ponta do Costa, a salt flat in the region. From the very beginning, the privately held company, headquartered in São Paolo, boasted a ground-breaking technological vision: to harvest brine water and then refine salt from the brine, using forced evaporation

vacuum equipment. This method made it possible to manufacture salt with a higher degree of purity for human and industrial uses, including producing cosmetics, paints, and fabric dyes.

Today Refinaria Nacional de Sal has 3,000 retail and industrial customers in Latin America and employs approximately 600 peo-

Panoramic view of the Refinaria Nacional de Sal plant



SNAPSHOT

REFINARIA NACIONAL DE SAL
salcisne.com.br

Headquarters: São Paolo, Brazil

Industry: Food/industrial and commercial salt

Revenue: BRL\$180 million (US\$47 million)

Employees: 600

Oracle products: JD Edwards EnterpriseOne 9.2, JD Edwards EnterpriseOne Tools 9.2.2.5, JD Edwards EnterpriseOne One View Reporting, Oracle User Productivity Kit, JD Edwards EnterpriseOne Orchestrator, Oracle Linux, Oracle Database 12c, Oracle Transportation Management Cloud Service, Oracle Planning and Budgeting Cloud Service

WILKER COSTA

IT Manager

Length of tenure: 8 years

Education: BA in business administration, Anhembi Morumbi University; postgraduate in IT management, Flamingo University

Personal quote/mantra: “Get your head in the business; working together you will probably do the best.”

ple. It has the capacity to produce 20,000 tons of salt each month and generated 116,000 tons in 2018, contributing to Brazil's position as the seventh-largest producer of salt globally. “We can develop customized products to meet the specialized needs of customers,” says Wilker Costa, IT

manager at Refinaria Nacional de Sal. “Salt is a commodity product, so to be a leader in the Brazilian market, you need to have a strong brand, have high product quality, and deliver excellent service.”

Costa notes that several years ago, Refinaria Nacional de Sal leaders recognized that in order

to maintain the company's success in the market, they needed to embrace digital transformation by adopting an integrated ERP system. Today, Refinaria Nacional de Sal has standardized and integrated financial, production, and distribution processes with Oracle's JD Edwards EnterpriseOne 9.2 solutions. In addition, one of the most innovative technologies that Costa's IT team has embraced as part of the ERP system is JD Edwards EnterpriseOne Orchestrator to completely modernize production. The solution creates processes called *orchestrations* that automatically glean and process raw IoT data from production line machines in real time. The data is then transformed into valuable, actionable information in JD Edwards EnterpriseOne. Further, the Refinaria Nacional de Sal's ERP system is integrated with Oracle Transportation Management Cloud Service to manage logistics and Oracle Planning and Budgeting Cloud Service to streamline financial planning.

CHANGING CULTURE

In Brazil salt is considered a food product, so Refinaria Nacional de Sal is required to precisely trace the production process end to end—from raw materials to delivery of products to customer stores. Throughout, they must gather, control, and verify the data related to every aspect of that process. But the company's leg-

acy systems were disconnected from one another and required the manual input of data, making it difficult to get an accurate overall picture of production and finances.

When Costa joined Refinaria Nacional de Sal eight years ago, some of the information management systems he was responsible for had been in use for 30

Today Refinaria Nacional de Sal has 3,000 retail and industrial customers in Latin America and employs approximately 600 people.



“

IoT and Orchestrator changed our company. All the steps from the time a work order is opened to the time it is completed are now automated.

—Wilker Costa, IT Manager, Refinaria Nacional de Sal

”

years. By 2012 decision-makers at Refinaria Nacional de Sal agreed to adopt a new ERP system with the goal of improving the management of integrated operational data. “I knew the project would be a challenge, because it would be more than a technology change,” says Costa. “It would be a change in culture.”

Six companies were invited to present proposals. Along with IT experts, individuals from different business areas across Refinaria Nacional de Sal were asked to participate to select the best solution to support the business long-term. JD Edwards EnterpriseOne emerged as the top choice because it offered a complete footprint of integrated modules built using powerful

Oracle software that could be easily extended as the company’s needs changed.

Before implementation began in 2013, IT professionals worked closely with employees in different areas of the business to educate them about the new software. Then, employees were asked to review all their business processes and to adapt them as closely as possible to match JD Edwards EnterpriseOne’s out-of-the-box functionality. After decades of doing things one way, some users were initially resistant. However, Costa and his team held fast to the goal of implementing JD Edwards EnterpriseOne with as little customization as possible, to benefit from best practices and to minimize total cost of ownership.

3,000

Number of industrial and retail Refinaria Nacional de Sal customers

Ultimately, implementation took only 13 months, with just 10% of the JD Edwards environment customized. The initial JD Edwards EnterpriseOne 9.1 footprint included financial, manufacturing, and distribution modules. Almost immediately Refinaria Nacional de Sal achieved more transparency into business processes and controls across all company operations. For example, updating the accounting ledger was automated, requiring very little human interaction, and it was much easier to obtain accurate details about costs and share this information with different business areas.

EASY INTEGRATION

Because JD Edwards EnterpriseOne immediately

enabled faster and more-accurate data flow across the company, the IT team could devote more time to tackling new projects. So when Refinaria Nacional de Sal considered buying a new logistics solution that could be integrated with JD Edwards EnterpriseOne, the IT team championed an Oracle offering, Oracle Transportation Management Cloud Service.

"We learned that Oracle offers a native integration between Oracle Transportation Management Cloud Service and JD Edwards EnterpriseOne," says Luciana Bonadio, systems development coordinator at Refinaria Nacional de Sal. "We had to make a few adjustments because of Brazil's tax environment, but two months later, the integration worked perfectly."

Next, Refinaria Nacional de Sal looked into options to improve planning and budgeting and to automate the generation of managerial reports. The company selected Oracle Planning and Budgeting Cloud Service because it could also be natively integrated

with JD Edwards EnterpriseOne. Refinaria Nacional de Sal Applications Coordinator Eduardo Galhardi and his staff managed the bulk of the project internally with some guidance from an outside Oracle partner, an effort that took just 360 hours to complete.

"The project was successful because the partner showed us the possibilities and the best practices of the Oracle Planning and Budgeting Cloud Service solution," Galhardi says. "And we worked together with key users to understand the business scenarios to implement the integration."

Now it's easier to access planning and budgeting data, and simulating scenarios and results projections can be accomplished quickly. As a result, business users can put more focus on analytics rather than just managing operational data.

IoT IN ACTION

By 2016, with back-office operations running smoothly, Refinaria Nacional de Sal's IT team had the bandwidth to look at options to



improve the company's production process control to ensure compliance with Brazilian regulations. Too many production processes were still managed manually, leading to human errors. At times it was difficult to determine how many salt products were produced, because the finished goods inventory was not accurate.

Fortunately, Costa learned

"We had to make a few adjustments because of Brazil's tax environment, but two months later, the integration worked perfectly," explains System Development Coordinator Luciana Bonadio.



that Oracle had introduced JD Edwards EnterpriseOne Orchestrator. He believed the solution would be a good fit for Refinaria Nacional de Sal's operations because it would automatically capture data generated from the manufacturing machines about products and feed the data into JD Edwards EnterpriseOne. It would also provide the ability to

7 Brazil's position in the global salt production market

"We worked together with key users to understand the business scenarios to implement the integration," says Applications Coordinator Eduardo Galhardi.

control machines and devices in real time from the production line.

Because some of Refinaria Nacional de Sal's production machines are 25 years old, to enable them to work with the modern software, Bonadio and her staff created a key intermediary piece. They use Java to first securely gather, preserve, and store data from the machines in real time and transfer the data to JD Edwards EnterpriseOne Orchestrator. Then, JD Edwards EnterpriseOne Orchestrator can feed the data automatically in real time into JD Edwards EnterpriseOne to provide valuable production insights.

From start to finish, the entire production process involves almost no human intervention. So, when a customer places an order for a particular type of salt, a work order is created in JD

Edwards EnterpriseOne. Next, the work order, which includes details about which machines will be involved to produce the salt, is sent through JD Edwards EnterpriseOne Orchestrator. Then, the work order data is translated via Java into machine language for manufacturing to begin. As salt is produced, it is packaged and labeled with a smart machine-readable barcode that includes the work order number, product lot, package ID, and date and time information. This barcode is read automatically by the production system to keep track of all salt packages as they are moved off the production line onto pallets and then stored in the warehouse. When an order is finished, the production system reads the barcode data and transmits the information to JD Edwards EnterpriseOne Orchestrator. Finally, JD Edwards EnterpriseOne Orchestrator transmits the data to JD Edwards EnterpriseOne, where the work order is marked complete.

There was some pushback from production employees ini-

tially, because many had worked at Refinaria Nacional de Sal for 40 years with few production changes—but today it is much easier to track how many of a certain product are being produced, when, and where, and the traceability of finished goods is much improved.

"IoT and Orchestrator changed our company," Costa says. "All the steps from the time a work order is opened to the time it is completed are now automated. To check on work, we only need to open a work order, and the process to scan the production machines and to read the finished goods produced is all automatic."

CONTINUAL IMPROVEMENT

Because Refinaria Nacional de Sal's JD Edwards EnterpriseOne environment is standardized, it is easy to update—something the company has done once a year. Most recently, in June 2018, the company moved to new servers and migrated to JD Edwards EnterpriseOne 9.2.

Today, Costa, his IT team, and with guidance from Oracle partner

20,000

Number of tons of salt Refinaria Nacional de Sal can produce in a month

VMAX SYSTEMS, are investigating a whole host of possible new improvements to the ERP system under the auspices of a companywide digital transformation project because they understand that JD Edwards EnterpriseOne continues to evolve, offering many more capabilities than what Sal Cisne originally went live with five years previously. They are talking to different business areas to learn what can be streamlined using new features in JD Edwards EnterpriseOne.

In the near future, the team hopes to create a logistics process in JD Edwards EnterpriseOne Orchestrator to confirm when salt products are loaded onto a truck before an invoice is processed and the truck leaves the plant. Another project is focused on giving mechanics the ability to use a mobile device communicating through JD Edwards EnterpriseOne Orchestrator to automatically issue an alert when a machine has a problem, request a part in the warehouse, and indicate how long the repair will take.

Further out on the horizon, Costa is interested in the potential of robotic process automation working with machine learning. "We're very excited to use this technology in business areas," he says.

Whatever system innovations lie ahead, Costa and his team always keep in mind that any technology changes need to serve Refinaria Nacional de Sal's business: to be a leader in the Brazilian salt industry. "IT is part of the business, not just a provider to the business," he says. "When we work together to understand the business, we can provide the best solutions to the business." □

Alison Weiss is a frequent contributor to Profit.

ACTION ITEM

- [Watch more about JD Edwards EnterpriseOne and Oracle Internet of Things Cloud Service.](#)

Larsen & Toubro Infotech Accelerates Transformation to Oracle's JD Edwards with the LTI MOD Framework

Helping organizations modernize and optimize their JD Edwards landscape and digitize business processes to get the most from their IT Investments

When it comes to digital transformation, large companies face unique challenges: every division and new acquisition has its own siloed systems with enormous volumes of data to manage. Larsen & Toubro Infotech (LTI), a global IT services company, knows what these companies are facing—and it knows how to help.

LTI specializes in helping companies across geographies and industries achieve digital transformation. LTI leverages solutions from a robust suite of

Oracle technologies to help its clients get the greatest benefit from their IT investments. A longtime Oracle Platinum integration partner, LTI has performed more than 250 successful implementations of Oracle's JD Edwards solutions.

MODERNIZING WITH LTI'S MOD FRAMEWORK

By leveraging its JD Edwards competencies, LTI addresses a wide range of services, including implementation and upgrade, application support, and wholesale business digitization. LTI's signa-



ture MOD framework—with Modernize, Optimize, and Digitize components—is a wide-ranging set of proprietary tools that brings the benefits of digital transformation to its clients. The MOD framework covers everything from analytics and IoT to automation and mobility as a service. Each of the MOD components encompasses unique LTI solutions.

LTI works closely with its clients to determine the best mix of solutions based on the client's specific situation. For example, perhaps the client is using an



Let's Solve

For more information, visit
<https://www.ltnfotech.com/enterprise-solutions/jd-edwards/>

earlier version of Oracle's JD Edwards EnterpriseOne solution but is not using the product to its fullest. LTI applies its MOD framework to assess the client's implementation, and then helps the client get the greatest benefit from their solutions. Wherever the client is on their journey toward digital transformation, LTI is committed to solving their challenges so

Its DataMight data migration tool can also reduce migration time and effort by more than 50%. Clients also save time and money by using some of the automated and prebuilt features in the comprehensive LTI toolkit.

"As a long-standing technology partner, LTI is facilitating Otis' transformation by supporting deployment of our centrally

intelligence (AI) and machine learning. These pluggable, cloud-powered AI assistants enable real conversations and learn as they go, automatically delivering dialog-based guided resolution, and auto-diagnosis and auto-healing features, which drive significant reductions in support costs. And with MOD, clients can migrate JD Edwards and other applications to Oracle Cloud Infrastructure using LTI's world-class purpose-built tools.

"We migrated over 30 databases and 25 terabytes of critical financial data from over 150 servers onto Oracle Cloud Infrastructure in only 21 weeks. This was possible because of the exceptional support provided by Oracle and LTI, our strategic IT partner," said Suresh Tripathi, Director of IT Development at Alliance Data Systems.

LTI and Oracle continue to work together on solutions such as the enterprise chatbot and mobility solutions, which includes Digital Supply Chain Management, Time Out of Environment, and spare parts inventory optimization solutions. They have enabled more than 25 JD Edwards processes for robotic process automation, greatly amplifying business outcomes. Together, LTI and Oracle have had success after success in helping large enterprises make the most of their IT investments. ■

"By leveraging its JD Edwards competencies, LTI addresses a wide range of services, including implementation and upgrade, application support, and wholesale business digitization."

they can be more efficient, effective, and competitive.

GAINING COMPETITIVE ADVANTAGE WITH LTI'S TARGETED TOOLS AND CHATBOTS

LTI's solutions can help its clients achieve significant, tangible time and cost savings. For example, LTI's RetroSmart tool can reduce the retrofitting efforts of an upgrade by more than 60% over manual efforts.

managed global ERP solution. We are leveraging our LTI partnership to bring chatbots into our ERP support structure and enjoy optimized toolsets such as DataMight. Together, we are building a strong foundation for Otis' transformation as a digital enterprise," says Marcus Galafassi, Vice President and CIO at Otis Elevator.

A popular LTI purpose-built JD Edwards solution is the company's support-system chatbots, which incorporates artificial

WAITING IS NOT A STRATEGY

Lyle Ekdahl believes that companies that want to succeed can no longer defer their digital transformation plans.

BY AARON LAZENBY

PHOTOGRAPHY BY KIM COOK/GETTY IMAGES

What is your innovation strategy? Is it based on increased quality, stronger customer satisfaction, or lower costs? And how are you planning to apply innovation within the new digital framework?

These are questions all businesses need to be asking themselves, says Lyle Ekdahl, senior vice president of product development at Oracle and general manager of Oracle's JD Edwards product line. To help address them, Ekdahl's team is providing "continuous innovation" through the constant growth of JD Edwards EnterpriseOne and its capabilities.

"We want to enable our customers to have a new digital interaction platform," says Ekdahl.

Of course, waiting to go digital is not a viable

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Success requires our customers to think about what their innovation philosophy ought to be.

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option in today's marketplace. Here, *Profit* talks to Ekdahl about the importance of digital transformation, how the continuous delivery model of JD Edwards EnterpriseOne 9.2 fosters innovation, and what new capabilities can be found in the current release and on the horizon.

PROFIT: What's your major message to JD Edwards customers for 2019?

EKDAHL: We fundamentally believe that digital transformation is real and that it radically alters the value equations in the marketplace—between vendor and customer, and partner and supplier. We're at a stage in the market where waiting is not a strategy. Success requires our customers to think about what their innovation philosophy ought to be, based on what customer outcomes they are driving. Is it breakthrough quality, stronger customer relationships or satisfaction, or lower costs? If they don't understand how they're going to apply innovation within this new digital framework, they won't be successful.

We use the phrase "moving

toward continuous innovation." Continuous innovation, as it relates to our relationship with our customers, is continuous development, and we've been doing that for some time. We've been automating everything, and we have a bigger vision for how we deliver. What we're looking for customers to do is this regular adoption or adaptation of what we deliver to them. This is the other side of the coin.

We do have some customers that are still on older releases. They need to get on the JD Edwards EnterpriseOne Release 9.2 platform, and then they need to get more iterative with what they adopt. Install it. Learn it. Use it. Improve their processes. Instead of thinking in terms of big bang, think in terms of iterative. Get there first and foremost, and then come up with a philosophy or a strategy around how you're going to innovate to drive an ultimate outcome. That is possible on Release 9.2. It doesn't happen on XE or older platforms—it just can't.

PROFIT: How do you define digital transformation?

EKDAHL: There are three phases

of digital transformation. First and foremost is moving beyond traditional ERP as a central repository or system of record and removing manual steps and paper. ERP becomes a digital platform involved in the transaction itself. It becomes more of a heartbeat, as opposed to a static place where you dump a bunch of data. Once we start doing that, we move to the next phase, which is getting new, richer sources of data, through machines as well as humans. The third phase is using that data to create intelligence in the ERP, as an assistant or something that you supervise. We have many customers that are now using JD Edwards to facilitate robotic process automation, which requires no human interaction for every business process, from mundane, manual processes to strategic processes.

PROFIT: What new JD Edwards capabilities has your team been working on?

EKDAHL: In the last year, we have been working on customer-requested enhancements to ERP processes, including order-



to-cash, procure-to-pay, maintenance processes, fix-to-repair, and finance processes. We have delivered more than 50 feature areas within those processes, making them more modern and automating them more holistically. We're using the frameworks that we have delivered for automation, so we've added the ability for our customers to use robotic process automation, to streamline in more machine-to-machine processes, and to have new digital interaction

paradigms so they can drive the user experience with voice or data across those processes.

Alongside that, we continue to future-proof our customers' underlying architecture. We have now delivered JD Edwards EnterpriseOne so that it can be deployed in 32-bit as well as 64-bit, or any combination thereof, given our server-based architecture, helping our customers stay current.

There are a couple of additional big investment areas with respect to features and business functionality. Our first one is that we've completed our efforts around lease management, remaking how customers deal with their leases, both property and nonproperty, in a more simplified way. This moved it in line with accounting processes from a process that was more income-statement-based to balance-sheet-based.

We have a whole new capability for joint venture management, for people who are looking to share percentages of ownership, costs, revenues, distributions, overheads—all that is associated with a joint venture. Think of a large

plant or a linear asset, an oil well or rig or a fracking field. Those things increasingly are run by joint ventures, so the ability to properly account for that and all the partners associated is critical.

We've also hardened our infrastructure for citizen development, extensibility, and UX capabilities, giving users the flexibility to modify the look and feel of our applications.

Finally, we continue to enhance JD Edwards toward a more intelligent ERP, adding more automation to help our customers get out of IT on the back end. ERP should be the heart of adaptive processes, utilizing data and interaction with machines and human users to allow customers to streamline processes and make the process smart.

PROFIT: You've also had success with your deployments on Oracle Cloud Infrastructure. How do you discuss the cloud with customers that have used JD Edwards on premises for decades?

EKDAHL: We're quickly approaching breakthrough value. The value today is clear for customers: You

can get out of the cycle of having to buy or lease equipment and put in big capital expenditures to deploy your ERP system. You can turn that cost into an expense and rent that infrastructure from us. There's certainly some benefit for many of our customers that don't want to be in the data center business, because they don't realize a differentiated value from it. You could rent from other vendors, but Oracle on Oracle flat-out runs better. There are things we do to make JD Edwards run better on Oracle infrastructure. We will continue to support other server-based environments, but we build on Oracle. If you're a customer and you engage with Oracle at our infrastructure layer, very shortly you and I will be sharing the same topology. That sets up very interesting arrangements in terms of the digitization of our relationship and how customers can consume what we're delivering on a continuous development basis. That's where we're headed—that's the vision.

PROFIT: How can partners benefit from the new developments?

EKDAHL: Our partners are telling us that they need to create new strategies and become early adopters in certain areas, or their success quotient is just not going to be what it used to be. We think this opens up whole new avenues for partners to be more involved in the value of continuous delivery for our customers. Many of our partners are sitting on the front end of our delivery mechanism with replicas of the customer's environment and running continuous test automation for those customers or evaluating latest features to see which ones customers should adopt. Those are some of the service value models that are getting created.

PROFIT: What new technologies do you see on the horizon that might benefit the JD Edwards community?

EKDAHL: There definitely are areas where autonomous transaction processing will play a role within the JD Edwards digital platform. That will be an investment we make as we look forward. We're going to be able to use more machine learning to

take over processes and make decisions. More intelligence in the database will help make decisions within JD Edwards processes. We're also looking at blockchain and distributed ledgers and how that would play a role, say, in engineering and construction, real estate contracts, or joint ventures.

We are making sure that JD Edwards has a highly flexible, extensible architecture that allows us to embrace these technologies. We're looking into whether that means embedding or integrating them or having them as bolt-ons to a JD Edwards process. Given our customer orientation, the automation we natively add to JD Edwards, and the amount of intelligence in the system, our view is that we're enabling our customers to be JD Edwards customers forever. □

Aaron Lazenby is editor in chief of Profit.

ACTION ITEM

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REIMAGINING ERP

From artificial intelligence to predictive analytics, yesterday's business applications are acquiring the technologies of tomorrow.

BY DAVID BAUM



Speaking to a packed auditorium at Oracle OpenWorld 2018 in San Francisco, Oracle President Mark Hurd predicted that by 2020, 90% of all software applications and services will incorporate artificial intelligence (AI) at some level and that more than half of all enterprise data will be managed autonomously. It was just one of the many predictions that Hurd shared that day, all linked by a common theme: the immense value of gathering, contextualizing, understanding, and acting on huge quantities of data—with help from machine learning and AI.

Many of these predictions are coming true, as yesterday's enterprise resource planning (ERP) systems give rise to a new breed of applications that continuously improve and adapt, based on up-to-the-minute conditions. Fundamental business applications handling finance, procurement, project management, risk management, and other back-office functions now incorporate a variety of innovative services from the cloud.

BREAKING FREE OF THE ERP UPGRADE CYCLE

On-premises ERP systems are known for their expensive and lengthy upgrade cycles, which yield major software updates only every two to three years. To think stra-

tegically, businesses need to look beyond these incremental upgrades and embrace the technologies that will give them a competitive edge in the future. To that end, many organizations are subscribing to software-as-a-service (SaaS) apps to avoid the cost and complexity of upgrading their legacy ERP systems.

Although these decisions are initially motivated by financial expediency, business leaders are also attracted to the promise of continuous innovation. Modern ERP systems reside in the cloud and are deployed as subscription services. SaaS providers continually update these systems via regular product updates.

More than 80% of the finance leaders responding to a recent ERP Trends survey cited the ability to stay current with technology as the top benefit of moving ERP functionality to the cloud, and it's easy to see why. In the old world of on-premises ERP systems, the years that passed between upgrades created the risk of technology obsolescence as a company's core functionality lagged

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The Oracle Cloud Platform with the Oracle Cloud applications is the key component in bridging not only artificial intelligence but also process automation.

—TIMOTHY LOMAX, STRATEGIC ALLIANCE MANAGER, MITSUBISHI ELECTRIC AUTOMATION

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behind its competitors'. In the new world of SaaS apps, innovations are rolled out continuously, ensuring a continuously modernized technology platform for managing business operations. And with the help of cloud platform options, SaaS customers can easily incorporate emerging technologies such as chatbots, mobility, AI, predictive analytics, and blockchain.

POWER OF THE PLATFORM

Not every company needs digital assistants or blockchain ledgers, but they generally do need application extensions, which necessitates custom software development. Many organizations also need to integrate external data into their ERP apps,

whether from an on-premises system, a third-party web service, a series of IoT sensors, or myriad other structured and unstructured datasources.

According to Juergen Lindner, Oracle's senior vice president of ERP product marketing, there are four common requests for platform services: functionality to connect disparate information systems, capabilities to extend ERP apps to enable specialized functionality and experiences, the ability to comprehensively secure the environment with intelligent cybersecurity capabilities beyond the security provided within the application itself, and a desire to analyze data from blended information sources. "The ability to

enhance a cloud-based ERP system with cloud platform components extends the capabilities of the ERP and helps it constantly evolve," Lindner notes.

Being able to enhance its SaaS-based ERP and supply chain systems in this way has been immensely valuable to Mitsubishi Electric, a world leader in industrial automation. The company's eF@ctory solution in Japan represents the state of the art in intelligent, data-driven manufacturing and supply chain management, enabling Mitsubishi to manufacture thousands of unique industrial products and fulfill more than 10,000 orders each day.

Previously Mitsubishi wrestled with fragmented on-premises systems for human resources, supply chain management, finance, warehouse management, transportation, and shop floor production. Production and sales personnel could not utilize a growing volume of IoT data from the factory machines, which sometimes delayed critical decisions.

Mitsubishi used application and data integration technology

available in Oracle Cloud Platform to combine data from human resources, supply chain, finance, and IoT applications into intelligent business processes that simplify interactions with a global ecosystem of partners and customers. "Downtime costs some of our customers millions of dollars per minute," says Timothy Lomax, strategic alliance manager at Mitsubishi Electric Automation. "The Oracle Cloud Platform with the Oracle Cloud applications is the key component in bridging not only artificial intelligence but also process automation."

VOICE IN THE MACHINE

One of the biggest advancements in the field of AI is the rise of digital assistants and chatbots—software services that interact with people via verbal interfaces. Within the context of an ERP system, these intelligent agents can enhance the routine decisions that people make every day, such as pricing products based on shifting demand and replenishing inventory as warehouse stocks are depleted. Thanks to machine

learning algorithms, the more data that is introduced to these intelligent agents and the more people they interact with, the more accurate and personalized their responses become.

As these software agents take on greater and greater responsibility within our ERP systems and elsewhere, many professionals wonder whether the bots will gradually replace human workers. Martin Ford, whose book *Architects of Intelligence* (Packt Publishing, 2018) speculates about many AI innovations on the horizon, believes that although autonomous agents will indeed replace some jobs, they will also create new ones. For example, machines aren't likely to replace a finance team, but that team will have an easier time closing the books at the end of the quarter as more of the routine aspects of the close process are automated.

This isn't a new phenomenon. Ford points to a 2015 study published in the *Wall Street Journal* that revealed that the total number of people working in corporate finance per billion dollars of

revenue dropped by 40% over a 10-year period, due to progressively smarter software. "This was not AI yet, just automation within our financial programs—something that corporate finance teams have been dealing with for some time," he points out.

And whether it's physical robots on the factory floor or enterprise software agents in an ERP system, automated systems won't simply replace jobs one-for-one. "Instead, the whole work environment is being reimagined and reorganized," Ford adds. "Jobs get restructured. The boundaries between individual jobs change, and a progressively larger percentage of key work tasks gets automated."

DAWN OF A NEW AGE

On the plus side, automating routine tasks can pave the way for more-creative ones as well as liberate workers from mundane activities. For example, within IT, autonomous database technology enables administrators to shed rote responsibilities and focus on the more valuable, strategic tasks

that require human knowledge and discernment, such as helping developers build software applications and making sure the IT department meets its service-level agreements. In cybersecurity, machine learning algorithms can correlate events from an immense barrage of cyberalert data and apply heuristics to detect patterns that may indicate a pending attack or breach. These bots can then forward the insights to a human agent, who can intervene if necessary.

Which begs the question: Can a human agent with an autonomous assistant do more than either entity operating separately? Byron Reese thinks so. The author of *The Fourth Age: Smart Robots, Conscious Computers, and the Future of Humanity* (Atria Books, 2018), Reese believes that today's trends in human/machine collaboration are ushering in a Fourth Age for humanity that promises to make workers more productive than ever. He recalls three times technology has reshaped humanity in the past: 100,000 years ago, we har-

nessed fire; 10,000 years ago, we developed agriculture; and 5,000 years ago, we invented the wheel and writing. We are now on the doorstep of a Fourth Age, Reese reasons, brought about by AI and robotics.

Reese maintains that technology often advances by making incremental improvements on work done by others—or, as Isaac Newton put it, "seeing farther by standing on the shoulders of giants." In the world of enterprise software, one of those giants is the ERP system, an engine of automation that has changed the course of an entire industry.

If today's trends in automation are any indication, this titan of technology may just be getting started. □

David Baum is a freelance writer focused on the intersection of technology, business, and culture.

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