

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-

tegitally, 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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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 reimaged 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.

ACTION ITEMS

- [Learn more about Oracle Cloud Infrastructure.](#)
- [Learn more about Oracle ERP integration solutions.](#)