

F R O S T & S U L L I V A N



Market  
Insight

# Successfully Cloud-Enabling Enterprise Resource Planning

Agility, Features, OPEX Pricing Model Propel Demand for  
Cloud ERP Systems

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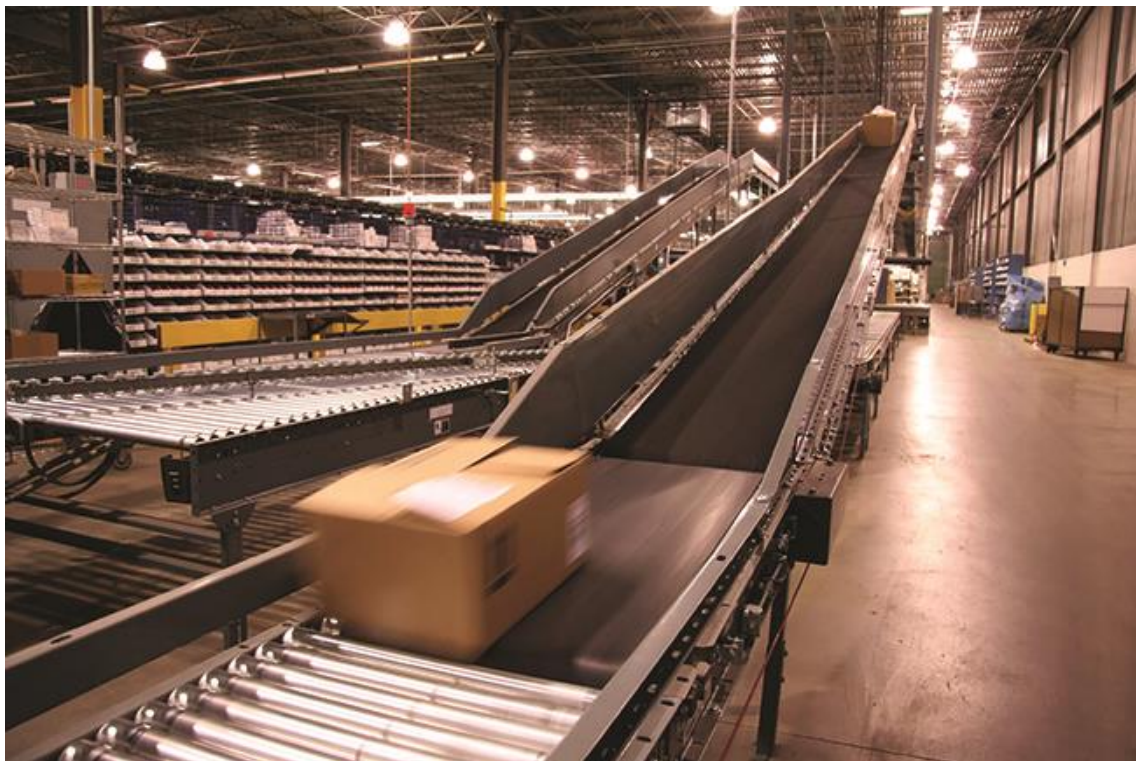
## Introduction

Enterprise resource planning (ERP) applications have become critical business tools by connecting, enabling, automating, integrating, and pinpointing opportunities (and problems) inside core enterprise functions and processes. As a result, they promise to improve productivity, quality, agility, and decision-making.

ERP software typically covers accounting, cost, financial, order, procurement, project, and purchase management, manufacturing, and distribution and warehousing. HR is often included in ERP solutions, but has sufficiently distinct opportunities and challenges to warrant separate Frost & Sullivan research.

But the ability of ERP to deliver on expectations has often been marred by high costs, complex installations (of up to a year or more), errors, usability issues, and inflexibility once installed. Perhaps it's not unlike companies' experiences with on-premise CRM systems ten to fifteen years ago.

Today, cloud ERP has emerged as an alternative to on-premise ERP software by managing a host of such issues. New cloud solutions can go live in as little as three months; but as with cloud CRM a decade ago, cloud ERP systems are still maturing, and as a result they have not been fully embraced by the market. But the signs clearly point to more cloud ERP development, adoption, and growth going forward.



## Cloud ERP Trends

Here are the key trends impacting cloud ERP products, markets, and use:

- **Demands for increased agility.** Companies are stepping up their use of a wide range of strategies and tactics to obtain higher profits amidst a slowly growing, highly competitive, and global economy. They are adopting strategies that include market expansion, market exit, divesting, IPOs, and M&As. They are swiftly adding and dropping prices, product and service lines, and suppliers. Companies also are using new communications channels and tools to improve their engagements with buyers, sellers, staff, and vendors.
- **Growing product complexity.** Products are no longer “one item, one SKU”. More of them have hardware and also software components sourced from, and supported by, multiple suppliers. More products also are being sold and managed as products as a service (PRaaS). PRaaS includes connected Internet of Things (IoT) goods. With PRaaS ordering, billing, sales, and service shift from one-off purchases to small purchases and/or leasing or renting, plus programs and service. Products become a mix of assets, liabilities, and capital depending on the offerings.
- **Potential impacts of 3D Printing.** Additive manufacturing, or 3D Printing, is on the horizon. 3D Printing promises to significantly minimize inventory and lead time. It also enables mass production of customized parts, which is not possible with conventional techniques. Frost & Sullivan forecasts that the global 3D printer market will grow dramatically, from over \$1 billion in 2015 to over \$20 billion by 2025<sup>1</sup>. The market is being driven largely by demand from the aerospace, automotive, biomedical and healthcare, and consumer products verticals. As the popularity of retail owners adopting 3D Printing business model increases, the industry will witness 3D printer manufacturers collaborating with retail giants<sup>2</sup>.

It is the ability of 3D Printing to enable mass customization of consumer and common business products close to the customers that promises to be the biggest disruptor to the supply chain. The benefits and convenience of “as you want it, when you want it” will outweigh the issues, while minimizing the need for traditional design, manufacturing, and distribution and warehousing.

3D Printing is presently small scale, as the technology has not yet been tested and deployed on a larger scale. The printers are expensive, and objects still require costly hand finishing. But market demand will drive innovations.

<sup>1</sup> Frost & Sullivan “3D Printing—A Disruptive Technology Electronics Manufacturers Need to Master”, August 2015

<sup>2</sup> Frost & Sullivan, “3D Printing Technology - 9 Dimensional Assessment (Technical Insights)”, December, 2014

- **Manufacturing and supply chain.** Many companies' manufacturing operations have moved offshore or been outsourced in order to lower costs and tap new markets. Still, those operations have to comply with market countries' currencies and their data, privacy, and security, labelling, measurement, and safety regulations. Companies also have to closely monitor supplier quality, particularly offshore, as countries' practices, laws, and enforcement may lack stringency. Long and global supply chains also become more vulnerable to disruption through disasters or component recalls.

But some manufacturing has returned onshore to shorten distribution lines and improve customer service. Labor costs are rising as the global economy strengthens, resulting in more automation worldwide, which shrinks the benefits of offshore manufacturing. At the same time, export and import distribution patterns continue to be affected by factors such as the expanded Panama Canal. Moreover, many APAC imports destined for the U.S. Midwest and the Canadian Ontario-Quebec corridor, and exports originating in these regions, may shift from West Coast to East Coast ports.

- **Impacts of eCommerce.** The growth of eCommerce also is changing supply chains. Products that had moved from manufacturers and wholesalers to retailers in bulk are being delivered singly to consumers' homes. Consumer friendly omnichannel "click and collect" programs where online ordered items are delivered to stores add further complexity. Retailers have to adjust their space to handle added inventory and returns.
- **Adaption to ERP applications.** Companies now expect simplified architectures from their ERP systems that can be readily upgraded and/or changed to evolve without consultant and vendor assistance. Companies want cleaner and more intuitive user interfaces, accessed through mobile as well as desktops and laptops. And they are looking for ERP products that reduce complexity and manual tasks to permit smarter working, and also to help managers make faster and more effective decisions.
- **OPEX and cloud preferences.** Companies are moving from a capital expense and on-premise model to an operating expense (OPEX) and cloud model for their IT investments. Cloud solutions are more agile, offer greater flexibility and scalability, have lower entry costs, and shorter and simpler, implementations and upgrades. Cloud solutions also provide business continuity and disaster recovery and improved support for mobile and remote operations and workers.

- **Improving cloud ERP functionality.** Cloud ERP often outdoes on-premise ERP applications for many functions, including data mining and predictive analytics. There are solutions that handle complex products and there are those that expressly support eCommerce. These solutions also can link into other functions with third party apps and connectors. They support multiple currencies and measurements with localization packs. Finally, and critically, cloud ERP systems are more customizable (consider their use of standardized, rather than proprietary, code bases as used in on-premise installations).
- **Solution verticalization.** Cloud ERP applications are expanding from generic to industry-specialized applications. Customers no longer want to write their own software or customize generic solutions at great cost; they are looking for cloud ERP products that have been pre-written to meet their specific transactions, processes, information requirements, terminologies, and challenges.
- **Greater user friendliness.** Cloud ERP solutions also have become more intuitive. Companies and their vendors now have single views of entire business processes and supply chain pipelines from their mobile devices. There are more self-service support functions through web portals that used to be handled by customer service. Many cloud ERP solutions also have collaboration and chat to enable intra-and interdepartmental and company-supplier teamwork.
- **Midmarket but gradual enterprise interest in cloud ERP.** Cloud ERP is becoming more popular for business planning and is in demand from sectors as diverse as financial, light manufacturing, media and advertising, healthcare, not-for-profit, public sector, retail and franchise, services, software, and wholesale and distribution.

As with many cloud solutions, the midmarket has been the biggest customer of cloud ERP solutions, migrating to cloud ERP from simpler, but less capable packaged software (think accounting). But enterprises that have legacy on-premise ERP systems are gradually adopting cloud ERP as well. For example, it's being used by the automotive industry for functions and tasks to support new products or services that require agility, innovation, and speed. Enterprises also are employing cloud ERP for subsidiaries.

- **Marketplace in flux.** As more companies accept the cloud, and move more functions onto it, ERP vendors are following and hoping to capture greater market share with generic and vertical-specific solutions. Many vendors offer both cloud and on-premise deployments and migration paths between them. Reflecting the mature state and prospects of the North American economy, market competition is stiffening between the CRM, database management, and non-CRM based generic and vertical suppliers. There also are ERP vendors that use the CRM suppliers' hosted platforms, which enable those CRM solutions companies to profit from and extend their reach into the cloud ERP market without being direct players in it.



## Cloud ERP Challenges

What follows are several developments that pose issues for cloud ERP design, demand, and deployment:

- **Business and product lifecycles.** Long solution lifespans, depreciation, and slow growth may lead many companies to delay replacing legacy on-premise ERP systems. The benefits of moving existing ERP application to the cloud, or moving up from less-capable packaged software, are not yet compelling enough.
- **Functionality, customization, implementation issues.** Cloud solutions may lack the full range of features provided by on-premise systems. They still lag behind for financial applications and for other complex systems requiring heavy customization, even as cloud ERP systems are catching up. Still, companies have to budget for additional bandwidth, IT resources for connections, and staff training to execute cloud systems.

- **Control and data management.** Companies may be reluctant to surrender much of their control to the cloud. For reasons to do with compliance, they may have to control data residency. They also may want to decide when and how to upgrade their systems. While they are comfortable with smaller automatic tweaks applied by hosting vendors, they tend to seek more attention and careful planning applied to larger upgrades.
- **Security concerns.** Some companies fear hacking may increase if they adopt cloud ERP, which is a concern they also may have with other cloud systems. Cloud solutions vendors are aware of the dangers and the impacts and have taken steps to limit them. But cloud vendors are often convenient scapegoats; on-premise systems also can be vulnerable to attack. There also are security risks with mobile technology that require attention in order to provide employee access to cloud or on-premises ERP systems from anywhere.
- **Hybrid ERP use.** Some companies are moving to a hybrid cloud-plus premise model where data and customization-heavy applications reside on-premise while resource-heavy software pieces are placed in the cloud. But as companies become more experienced with the cloud they almost certainly will make more pure cloud software acquisitions within the next several years.
- **Internal organizational resistance.** There may be strong internal resistance to cloud ERP applications for fear of job losses. Cloud ERP enables staff savings through greater efficiency across departments and lowers IT outlays.
- **Adapting the people and the process.** Cloud ERP systems may require departments and operations to change their procedures and routines in order to maximize the software benefits. But companies also may not wait until the software is fully enabled and tested and staff completely trained on it before going live. As a result, cloud ERP solutions never live up to their promise and are sometimes unfairly blamed for “ERP failures”.



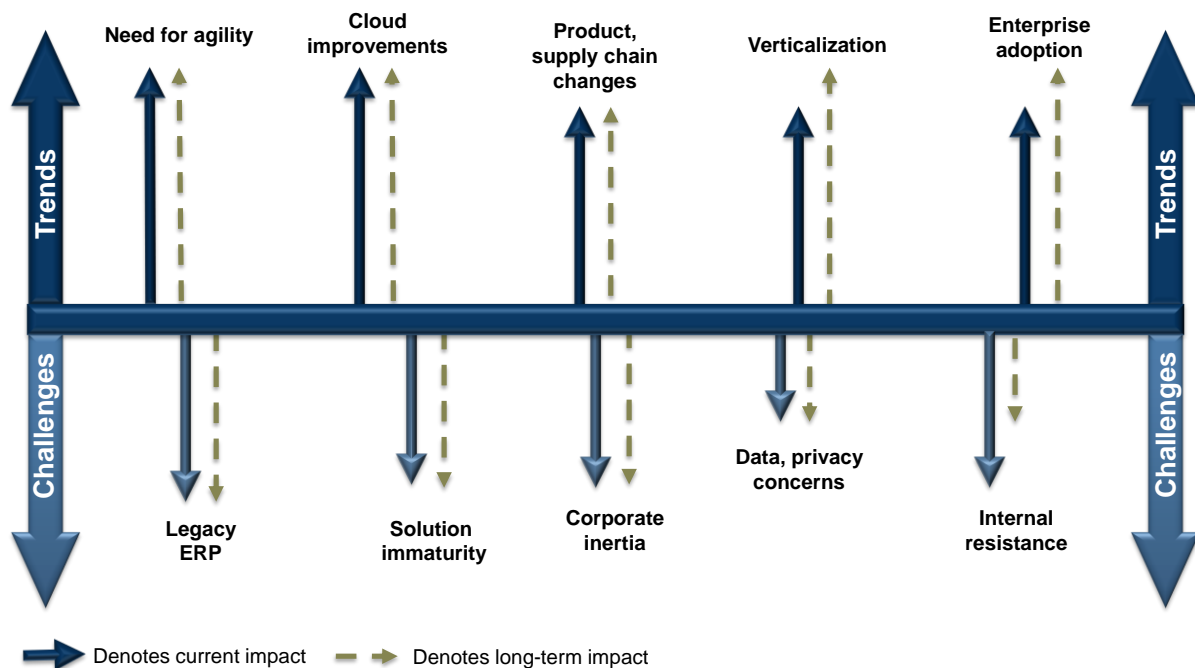
## Summary and Recommendations

Companies are shifting their ERP solutions to the cloud to obtain benefits at lower costs, increased flexibility, and scalability. But cloud ERP solutions must have the functionality, customization, verticalization, and ability to handle complex processes. Companies must decide how much control and customization they are willing give up in order to obtain the benefits of going to the cloud.

Exhibit 1 shows the key trends and challenges of cloud ERP in North America from 2015 to 2020.

### Exhibit 1: Cloud ERP Key Trends and Challenges, North America, 2015–2020

**Key Takeaway: Trend 5 is the most important factor in formulating future strategies.**



Source: Frost & Sullivan

Here are several suggestions how companies can extract the most utility from cloud ERP:

- **Have the best products, processes, and people.** Cloud ERP applications will only deliver the expected results when companies have attractive products and services that are delivered and supported effectively. ERP applications deliver optimal results to growing and ambitious organizations that have proactive, dynamic, and results- focused management who can make the best use of the ERP-obtained information and who are willing to use the tools.

- **Strong project leadership.** To make cloud ERP programs successful, senior management must enthusiastically buy-in and advocate their implementation and execution. They must define goals and outline how they will be met. And they need to set up implementation and organization change teams. They should be tasked with avoiding solution over-engineering. Companies must put in structured and analytical solution selection processes and execution plans. They also should pilot test all key areas at each project phase. At the same time, companies must set-up extensive education and training, including explaining how ERP systems will make employees' tasks easier, more fulfilling, and productive.
- **Plan for ongoing management.** Cloud ERP is a changing process. Companies must plan for vendor updates. They also should have ongoing ERP training. They will need to have ongoing business process and ERP management.
- **Consider the choices.** Companies should look for best-in-class cloud ERP solutions for industries that need deep functionality and tight integration with critical front-end systems like CRM, finance (loan management), healthcare (electronic health records), and retail (point-of-sale). Companies need to evaluate vendors' pre-sale and post-sale investment track records.

Companies also should weigh the advantages of incorporating ERP vendors' CRM and HR solutions with their core ERP products as compared with using best-of-breed ERP, HR, and CRM applications. While combined same-vendor ERP and CRM features promises tight integration, the benefits of this synergy have not been overwhelmingly proven. There also is a risk that companies could have less than optimal CRM software. Similarly, ERP solutions often offer HR modules, but there may be non-ERP HR solutions from other vendors that can best fit companies' requirements and budgets.

## Vendors at a Glance

### Acumatica

Acumatica provides an integrated set of comprehensive mobile-enabled modular browser-based cloud ERP solutions aimed at small-midsized businesses. Its applications can handle simple and complex requirements and scale with companies as needed.

The Acumatica Financial Management Suite handles accounts payable and receivable, inter-company accounting, cash, currency, deferred revenue, fixed assets, and tax management, general ledger, and payroll and expenses. Acumatica also manages recurring revenues. Companies have single screen views of approvals and can enter documents across modules.

The Acumatica Distribution Management Suite enables companies to automate and control purchasing, track inventory, and process orders. The solution also can automate large shipments and maintain vendor lists. Its Requisition Management module simplifies organization of multiple products and suppliers.

Acumatica also offers the Acumatica Customer Management Suite CRM module and the Project Accounting Software Suite. Acumatica's solutions are fully integrated with each other and work on a centralized database.

## **ADS Solutions**

ADS Solutions offers the cloud Accolent line written expressly for the distribution and wholesaling industry. It also offers accounting software that is fully integrated with Accolent.

Accolent eCommerce and online inventory management applications allow online order placement, freight rate lookup, vendor selection, and secure payments. Orders are then available in Accolent ERP for processing and fulfillment. Accolent wholesale inventory management software provides comprehensive inventory viewing and tracking.

Accolent purchasing management software includes Dynamic Order Point and Economic Order Quantity stocking options. It also automates RFQ transmissions to multiple vendors.

Accolent sales distribution software can help create quotes, point of sale invoices, orders, future orders, recurring orders, rental and repair orders, accept returned goods, and look up sales histories. It also supports sales and service with built-in capabilities or integration with third party CRM software.

Accolent warehouse management enables staff to check inventory availability and status, obtain inventory reports, set selling prices, vary costs, and define inventory and safety stock levels by warehouse. Staff also can create warehouse transfers to easily move products.

## **Aplicor**

Aplicor merges accounting and finance with fulfillment, inventory, and customer case management with its Aplicor 3C all-in-one hosted Accounting ERP, eCommerce, and CRM solution. Aplicor 3C collects and houses all information in a single database for instant viewing. Companies can see their accounts receivables, inventory levels, purchase orders, fulfillment, outstanding quotes, and returns. The solution can suggest alternative products for out-of-stock or discontinued items. It offers accurate, real-time shipping quotes and generates shipping labels.

Aplicor 3C has customizable rapid accounting entry-forms. Its single entry system helps ensure data accuracy while speeding up business processes. The solution automatically calculates sales profit margin for quotes and covers multiple currencies, tax regimes, and electronic payments. The solution enables automated fulfillment triggered by customer actions, such as placing orders. Once products have shipped, it automatically creates invoices for review. Its 'Suggested PO' function conveniently prompts action on potential reorder items.

## **BizAutomation**

BizAutomation.com offers cloud ERP integrated with material requirements planning applications for the item rental, manufacturing, professional services, retail, and wholesale and distribution industries. It provides manufacturing, warehouse, and inventory management. It also has procurement automation to streamline purchasing and to improve vendor management. Its order and billing management accelerates order to cash and invoicing, improves quote accuracy, and reduces billing and order errors.

BizAutomation.com increases fulfillment and shipping efficiency through deep integration with top carriers. It also links into leading multichannel eCommerce marketplaces, but it also offers its own web store.

The solution has full financial management functionality. It also can manage recurring revenues. It also has accounting and CRM applications integrated with ERP and it supports human capital management processes.

## **Clearview Software**

Clearview Software specializes in the architectural and engineering industry. Its product, InFocus, has cloud and also on-premise integrated ERP functionality for accountants and project planners.

InFocus covers accounting, billing, and time and expense management. It has project planning and management and resource allocation. Its Project Central solution enables consolidated views of project metrics and supports project budget and resource management.

The InFocus Actions can automate complex workflows and trigger actions when there are changes through system hooks. It can be used to add prompts or other actions for specific business rules.

And in-depth reporting is available through its ReportBuilder solution, which enables swift report creation through templates and customizable table layouts with unlimited dashboard layouts.

## **Compiere (Aptean)**

The Compiere open source cloud on on-premise ERP solution covers a wide range of businesses and functions. It is easily customizable and extendable through drag and drop editing and includes CRM functionality.

Compiere's financial management application integrates financial, operations, and sales processes, with data unified in a single repository. It supports multiple organizations, currencies, accounting schema, tax laws, and languages.

Compiere's materials management solution handles products, price lists, inventory receipts, and shipments, movements, and counts. The solution supports multiple warehouses with user-defined locations within each of them for recording stock locations in bays and shelves. Shipment documentation can be created in batches, or individually on a per order basis.

Compiere also enables customer quotation creation. It supports two-and three-way purchase order matching with receiving and invoicing documentation.

Compiere's manufacturing solution plans, controls, and schedules production. It calculates and tracks material, labor, overhead, and job order costs. The company's warehousing management application features a customizable rules engine for directed putaway, picking, and replenishment. Both solutions are tightly integrated with other Compiere ERP features.

## **Deltek**

Deltek offers cloud ERP solutions optimized for different industry segments. All offerings utilize Amazon Web Services for Infrastructure as a Service. They also are available on-premise with migration paths to and from the cloud.

Deltek Costpoint is purpose-built for government contractors. It tracks, manages, and provides reports on project planning, estimating, proposals, budgets, purchasing, billing, business performance management, and project manufacturing. It offers unified modules that connect every project-related transaction to specific projects. Costpoint also has analytics, compliance, HR, and time and expense applications.

Deltek Vision is purpose-built for architectural, engineering and other professional services firms. Vision manages the complete project lifecycle from pipeline building to project execution. It integrates critical business functions including client management, sales and marketing, resource and project management, time and expense capture, accounting and billing.

Deltek Maconomy is purpose-built for advertising agencies, audit and tax, consulting, legal services, and scientific research companies. Maconomy features broad and deep finance and project management capabilities developed specifically for professional services organizations that provide knowledge to their clients on a project basis.

## **Epicor**

Epicor provides cloud ERP and also on-premise device-agnostic solutions for the distribution, manufacturing, retail, and services industries. The Epicor suite covers financial, order and sales, performance, production, product data, project, service, and supply chain management. It also has applications for compliance, governance, and risk, and for production planning and scheduling. Additional modules cover CRM and HCM integrated with the cloud ERP solution.

Epicor permits companies to create workflows that automate, execute, and which monitor business processes. It allows them to create recurring invoices its account payable and receivable modules, along with generating general ledgers that include tax lines or the creation of tax adjustment journals.

The Epicor Financial Planner enables companies to leverage workflows, approvals, and create multiple budgeting models with predefined templates. The Epicor Commerce Connect eCommerce connector and toolset provides access to ordering, product, and account information, and marketing, and customer service processes by using ERP data. And it eliminates the need for separate product databases.

## **Exact JobBOSS**

Exact JobBOSS shop management software is a single integrated shop floor solution with flexible deployment options: Exact Online JobBOSS public cloud, on-premise, and hosted via private cloud.

The Exact Online JobBOSS public cloud ERP solution has been expressly written for make-to-order, make-to-stock, mixed mode and assemble-to-order manufacturers in the metal fabrication, woodworking, rubber and plastics, machine building, food and beverage, and 3D Printing industries.

Designed to work with QuickBooks Online, Exact Online JobBOSS automates logistics and production, and provides real time insight into production. It enables quick quote generation and work order creation based on customer orders or stock requirements. It monitors manufacturing progress from beginning to end, covering orders in progress, machine capacity, and outstanding purchase and work orders. It also alerts managers of incomplete deliveries and late payments.

## **IBS**

IBS ERP and supply chain solutions cover the automotive aftermarket, food and beverage, pharmaceutical, publishing, and third-party logistics industries. IBS Enterprise ERP comprises six key areas: Distribution Intelligence, Distribution Financials, Supply Management, Logistics, Assembly, and Service, Demand, and Supply Chain Integration. The company focuses on inventory planning, purchasing and supplier management, warehouse optimization, value added services, demand management, and returns processing.

The open and flexible architecture of the IBS Enterprise ERP platform enables it to be integrated with existing software solutions such as LMS, TMS, CRM, and support solutions. IBS Integrator manages systems integration and data management, replication, and synchronization. It easily connects systems, applications, and data inside and outside of businesses. The tool simplifies how IBS Enterprise interacts with existing applications, servers, and databases, and it allows for improved decision-making with an enterprise-wide, integrated view to support businesses globally across all legacy systems.

## **IFS**

IFS offers standalone ERP solutions along with enterprise asset management and enterprise service management solutions. IFS Applications for ERP includes financial, document, sustainability and quality management, and its business intelligence solutions facilitate full product life cycle management. IFS also provides CRM and HR functionality as well as enterprise operational intelligence capabilities.

IFS Applications can be configured for a variety of industries, including discrete, process, and multi-mode manufacturing; construction; and engineering. It also can be shaped for distinct uses and markets, among them aerospace and defense, energy and utilities, food and beverage, and oil and gas.

IFS has targeted solutions for manufacturing and project management. IFS Applications helps manufacturers with make-to-stock, make-to-order, configure-to-order, engineer-to-order, and batch process programs. IFS enterprise project management software is written for one-off projects such as engineering, construction and fabrication, prototyping, and services. It supports project management-related environments, including engineer-to-order manufacturing, construction, engineering, and engineer-procure-construct programs.

## **Infor**

Infor CloudSuite Business is a complete, customizable, scalable, secure, and reliable enterprise-wide business management suite serving multiple industries. The Infor CloudSuite Business provides financial management, enterprise performance management, analytics and business Intelligence, supply chain management, projects and resource planning, and sales and order management. It also has eCommerce, CRM, application development framework, and production, packaging, and distribution.

The Infor Cloud Suite Business can easily integrate with existing solutions. Its integrated project management tools automate workflows and increase productivity.

## **Intacct**

Intacct provides cloud ERP solutions for a wide range of accounting and finance-based applications. Its core financial product covers accounts payable and purchasing, accounts receivable and billing, cash and order management, and general ledger. There are add-on fixed assets, check delivery, global and multi-entity, subscription billing, for sales and use taxes, and time and expense management modules.

Intacct's solutions are written to be readily tailored for accounting companies, franchises, healthcare providers, hospitality businesses, nonprofits, service organization, software and SaaS solution suppliers, and for wholesale and distribution operations. Intacct has in-depth reporting and dashboards that track operational and financial data by business drivers.

## **Kenandy**

Kenandy offers cloud ERP for five key functions: order to cash, plan to production, global financials, procure to pay, and trade program management. All of the functions are integrated and delivered as one product. It delivers them as SaaS built on the Salesforce1 hosted stack.

Kenandy's customizable and scalable SaaS ERP architecture enables short project implementation times and it can be extended with apps. Its Salesforce platform also provides mobile responsive design and automated language translation and hosts data.

Kenandy software obtains fast and reliable performance by using the Wide-Body-Objects (WBO) unified data model. With WBO there are fewer tables and SQL calls, joins, or updates. Companies can run Material requirements planning (MRP) in what-if and in production modes without waiting for sufficient on-premises server capacity.

Finally, Kenandy's SKID product eschews traditional single item SKUs. SKID provides metadata coding of complex orders to customers with coordinated fulfillment and consolidated invoicing and billing. Companies can list hardware, software, maintenance, projects, location, contracts, and change order functionality. With SKID they can support PRaaS including IoT products.



## NetSuite

NetSuite provides a comprehensive array of cloud ERP applications with a flexible platform for a unified view of key business processes. It provides global companies support for 190-plus currencies, user interfaces in 19 languages, and customer deployments in 160-plus countries. There is native integration with NetSuite's CRM and eCommerce solutions.

The NetSuite financial management application has standard project accounting and reporting, but it goes beyond them to streamline operations and provide greater and real-time visibility. It features intuitive business modeling, allocation management, and a report builder. It has revenue recognition and recurring revenue management solutions. The financial application also incorporates inventory costing and fulfillment with supply chain management.

The NetSuite advanced procurement solution provides intelligent data entry forms in which employees do not have to know vendors' names, intelligent workflows, and requisition-linked purchase order status tracking and visibility. It also enables item consolidations from multiple requisitions onto single purchase orders, tiered priced purchase contracts, and blanket purchase orders. The NetSuite warehouse management system provides cartonization, kitting, mobile RF barcode scanning, space management, and wave planning.

## Oracle

Oracle Cloud ERP enables and supports a wide range of business and industrial processes for midsized and enterprise companies with in-depth solutions. Oracle offers guided navigation and enterprise social collaboration and sharing, and Big Data and analytics solutions.

The Oracle Financial Cloud has automated financial processing with role-based dashboards that push issues and work to users, on an embedded multidimensional data reporting platform. The Oracle Procurement Cloud streamlines contract and supplier management, procurement, and strategic sourcing. The Oracle Project Management Cloud provides project, resource, and task management with planning, and with status and utilization tracking.

Oracle also has several function and industry-specific cloud ERP applications. The Oracle Fusion Accounting Hub provides accounting system integration and reporting. The Oracle Fusion Governance, Risk, and Compliance solution monitors transactions, tracks application setup data, and it enables standardized risk management and access policies. Oracle also offers the Oracle E-Business Suite, JD Edwards, and PeopleSoft ERP solutions.

## **Plex**

Plex offers the manufacturing expert-developed Plex Manufacturing Cloud ERP solution. It covers every manufacturing facet with automated processes and supplies real-time information to enable decisions. It is accessible on any device and environment, including plant floors, through web browser access and on the SmartPlex mobile app.

The Plex business management software covers accounting and financials. It has actual manufacturing costing, fixed asset and contract tracking, automated purchasing and reordering, EDI, and the Plex supplier portal, and enterprise management.

The Plex manufacturing operations software handles production planning and scheduling, production, inventory, and quality management, plant and shop floor control, and tool manufacturing and management. It provides a single source of product and program to ensure consistent and repeatable processes.

## **QAD**

The QAD Enterprise Applications software offers in-depth cloud and on-premise ERP solutions tailored for the automotive, consumer products, food and beverage, discrete products, configured products and life sciences industries, and written with industries' participation and research. Those solutions cover and provide financials, customer management, manufacturing, and supply chain solutions.

The QAD Enterprise Cloud features Cloud Apps that include QAD Cloud ERP, the QAD Cloud QMS and QAD Transportation Management solutions. The QAD Cloud Portal includes QAD Supplier Portal. QAD also has a suite of cloud management services.

Companies also can choose blended cloud and on-premise deployments, with consistent functionalities and interfaces. They can bidirectionally migrate their applications between both deployment types. QAD cloud easily scales from ten to more than 5,000 users domestically and globally. Its data centers have greater than 99.5 percent availability, are SSAE16 SOC I Type II documented, and have warm site use in case of disasters. QAD tracks hundreds of metrics on each of its customers' systems every few minutes.

## Rootstock

Rootstock Software offers cloud ERP solutions written and aimed for manufacturers and distributors, covering the supply chain. It is also available for Salesforce-using businesses on the Force.com platform.

The Rootstock Cloud ERP for Manufacturers supports their build to stock, and build, configure, and engineer to order modes. It also enables project based ERP with project control functionality, and hybrid ERP programs and projects. The Rootstock Cloud ERP for Distributors supports configure and kit to order, pre-built kit, special order, and ship from stock requirements. Solutions include production engineering, material requirements and capacity and scheduling planning, inventory control, manufacturing cost control, PLM integration, lot and serial control, shop floor control, and purchase and sales order management applications.

Rootstock supports manufacturers' and distributors' multi-company, division, and site and multi-distribution center requirements. It supports their operations also in Asia Pacific and Europe in addition to those in North America. And the company will be launching financial management, including accounts payable and receivable and general ledger in 2016.

## Sage

The Sage X3 business management and ERP solution is designed for companies with complex requirements and with stretched capacity and resources. User workspaces are personalized based on business roles, and visual process maps guide users to complete common tasks with ease. Workflows can be automated and configured to alert users of the tasks at hand, and to inform them of the status of a process. The solution also delivers real-time or batch analytics. Documents can be shared with users and teams as part of a business workflow, and the solution integrates with Microsoft Office.

Sage X3 can be configured to manage complex organizational deployment and reporting structures, including multi-company, multi-site, multi-manufacturing mode, multi-ledger, and legislations. It has a set of tools to adapt or extend the software capabilities. It is available in the cloud and on premise.

Sage also offers other and tailored cloud ERP solutions. The Sage 100c, Sage 300c, and Sage 500 provide business support from financials to operations management. They are aimed at small, and particularly the Sage 500, midsized business.

## SAP

The SAP BusinessByDesign solution offers mobile-accessible cloud-based ERP and business and project management software aimed at midsize companies. It also provides other functions such as CRM and supply chain management integrated into the application.

The BusinessByDesign Finance application enables companies to manage accounts for multiple operating units, currencies, and reporting standards. Its cash flow management application taps customer and supplier transaction data to provide real-time visibility into their cash positions.

The BusinessByDesign Procurement product offers a central database of product and supplier and information. It simplifies purchasing activities and it provides real-time information to buyers.

BusinessByDesign also provides complete views of manufacturing, supply chain, and distribution operations. Companies also can use it to forecast demand track the delivery of long lead-time items.

Finally, BusinessByDesign uses integrated analytics and reporting powered by SAP HANA. It is hosted on SAP-managed and maintained highly secure data centers.

## SYSPRO

SYSPRO BusinessLive adapts to a company's business needs with a choice of cloud solutions to suit their specific requirements. Companies can make full use of SYSPRO ERP with either SaaS or IaaS (Infrastructure-as-a-Service) options. And SYSPRO can be accessed on any hosted platform such as Microsoft Azure, Amazon Web Services, or other managed services platforms.

## Unit4

Unit4 offers a "self-driving" user experience in its ERP solutions that reduces complexity and manual tasks so that users can focus better and act faster on their tasks.

The company's People Platform is based on a flexible architecture that permits users to alter their data, business processes, and reporting and analysis models. It offers a smart context layer that "knows" who and what people are connected to, and what rules apply as a result.

Unit4's Business World ERP solution is founded on specific principles and capabilities. It covers finance, procurement, budgeting, forecasting, planning, project management, asset management, field service resource allocation, regulatory reporting, and billing. Partnership with Microsoft allows it to combine transactional data with relevant unstructured information from Microsoft applications and use Microsoft Azure machine learning and predictive analytics to simplify tasks.

Business World is adaptable to national and regional market conditions, currencies, languages, regulations, and requirements. It is available via the public or private cloud as well as on-premises, with the flexibility to move between them.

# Frost & Sullivan's Top Picks: Cloud ERP Solutions

**Kenandy.** Kenandy blends a diverse advanced set of leading edge hosted SaaS ERP solutions, built from over 40 years' industry experience and knowledge, with the Salesforce cloud platform as a service platform. Kenandy's architecture advances the business case for cloud ERP by providing for richer and simpler functionality. Its solution is tailored for the new business and product models, like PRaaS.

**NetSuite.** NetSuite provides ERP applications that cover a wide range of functions from accounting to supply chain and warehouse management, and across verticals. They are intuitive, intelligence-driven, and modular for phased deployments. NetSuite also offers CRM, eCommerce, and professional services automation integrated with its ERP solution that unifies data and processes.

**Unit4.** Unit4 offers hosted public and private cloud, and on-premise installations, along with the flexibility to move between these environments. Unit4 has architected its People Platform to enable users to change their business process, data and information, and analysis and reporting models. Its self-driving automation feature drives improved productivity.

## Cloud ERP Use Case

### DASCO Welded Products

DASCO Welded Products is a custom metal fabricator based in Waterbury, Connecticut. The company creates products such as fish cleaning stations, drying ovens and handling carts, and wet benches. It employs 13 people in its custom job shop, performing fabrication, equipment design, repair, and modification, using 2-D prints and 3-D models as the basis of its products.

#### The Situation

DASCO had been operating "on the fly" with scant control over its orders, which were taken and processed without much forethought or planning. This led to order errors. Meanwhile customers could not receive firm answers on where their orders were in the fabrication process. The company had to conduct daily production meetings to have an idea of where products and parts were located.

DASCO had been using basic spreadsheets and more specific job sheets to conduct its business. But these methods masked over its core absence of control problems.

## The Response

DASCO realized that ERP software would be the best solution. But with a very tight operating budget, cost was an extremely important factor in deciding whether to purchase it, as was flexibility, given the fluctuating demand for its products.

DASCO researched several vendors and within 30 days selected Exact Online JobBOSS for its features, affordability, and its cloud flexibility and scalability. The company implemented the software's bill of materials, invoicing, items, planning, purchase orders, quoting, routing, and sales features over a 12 month period. DASCO is in the process of equipping its employees with tablets to bring all of its operations through Exact Online JobBOSS to the shop floor.

## The Results

DASCO has been seeing positive impacts from implementing Exact Online JobBOSS. Productivity rose 400% from an average of 10 jobs per month in 2014 to 50 jobs per month in 2015. Meanwhile, order turnaround time dropped by 10% from 20 days to 10 days. The shop eliminated the daily production meetings since they knew where orders were located the moment they started working. As a result the company was able to save \$7,000 month by cutting overtime.

DASCO also found that the Exact Online JobBOSS's routing feature enabled it to maintain greater control of orders. The company utilizes lean techniques such as just-in-time and kanban. The software's ability to convert quotes into sales order automatically allowed DASCO to shorten the sales cycle. The application helped it to identify products that they were selling well below their real market value.

With Exact Online JobBOSS DASCO raised prices and profit margins without alienating its existing customers. Customer relations also improved and it is seeing former customers return to the fold.

"We were handing over our products wrapped in \$10 bills," said Patrick Hale, a partner at DASCO. "We've now seen a tremendous return of investment with the Exact Online JobBOSS solution."

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Frost & Sullivan

331 E. Evelyn Ave., Suite 100

Mountain View, CA 94041

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- Providing a 360 degree perspective—integrating 7 critical research perspectives to enhance significantly the accuracy of clients' decision-making and lowering the risk of implementing growth strategies with poor return,
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