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## **RESEARCH NOTE** **TECHNOLOGY VALUE MATRIX – SECOND HALF 2012** **ENTERPRISE RESOURCE PLANNING**

### **THE BOTTOM LINE**

The recent evolution of the enterprise resource planning (ERP) market has been dominated by two main trends: The first trend is that of traditional vendors re-designing products in order to make them more user-friendly and easier to maintain. The second trend is the emergence of a segment of new vendors and solutions employing the latest technologies to challenge traditional ERP and sometimes even trying to re-invent it (more or less successfully). Both trends have led to a certain degree of consumerization of ERP, making it more accessible but bringing with it new challenges such as the integration between ERP and other software solutions. Depending on their go-to-market strategy and their R&D budget, vendors use a myriad of different approaches to adapt to the changing need of their customers and the advent of new technologies.

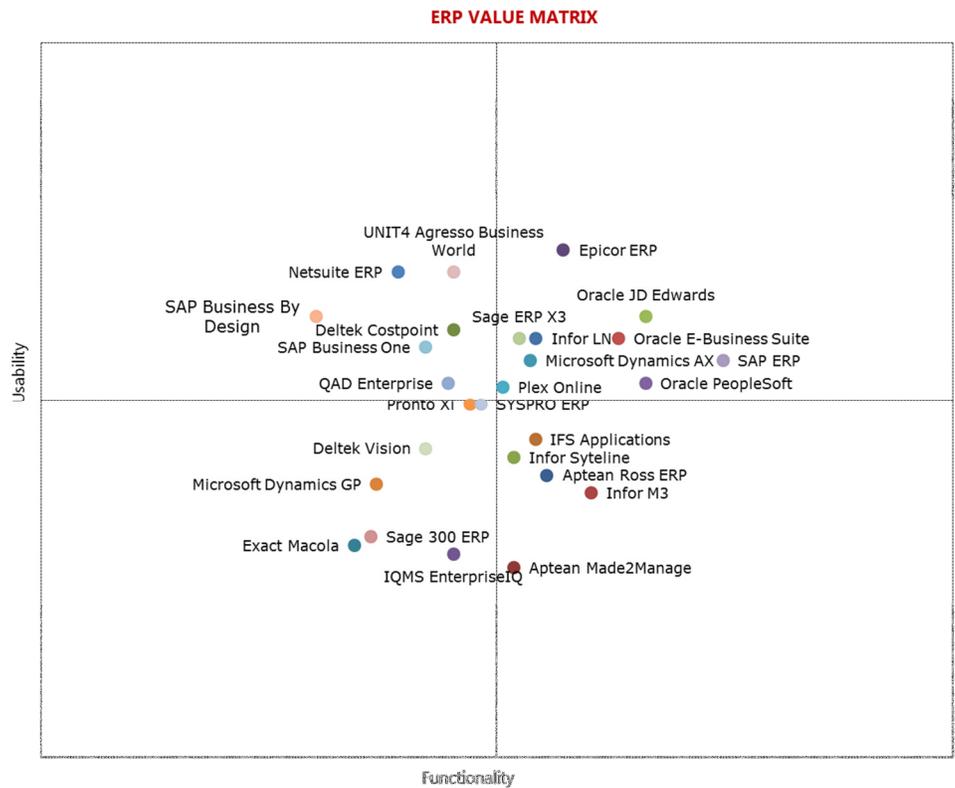
### **MARKET OVERVIEW**

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Most ERP solutions in use today were designed dozens of years ago. While most of them have been enhanced or redesigned to take advantage of the latest programming technologies, the logic behind the solution hasn't kept up with the changes in the ERP market. One of the major changes for ERP is that manufacturing and services companies are moving from a product-centric to a customer-centric approach. This new approach requires not only customer relationship functionality, which most ERP vendors provide either as part of ERP or through integration, but also a system for data sharing and management which spans throughout the entire lifecycle of the company's interactions with its customers, partners, and employees. For many companies in industry sectors such as manufacturing, services, or logistics, ERP remains their backbone solution, but its full potential can only be achieved through integration with other software solutions such as customer relationship management (CRM), product lifecycle management (PLM), enterprise asset management (EAM), human capital management (HCM), or supply chain management (SCM).

New programming technologies and delivery models (such as the cloud), which allow software vendors to store and manage both the data and the application in remote data centers, have made ERP more accessible. New solutions have been created from scratch in

recent years, such as Netsuite, and SAP Business ByDesign. The cloud delivery model has reduced IT costs since implementation is very fast; and data storage and management are undertaken by vendors and their partners, along with upgrades and maintenance. The cloud has made ERP more affordable, thereby enabling companies to replace old accounting packages with a more robust solution for their needs. The cloud is flexible from a scalability perspective, but has limitations in terms of the customization of the solution. The most cost efficient deployment method is the multi-tenant model in which all companies share the same database, reducing the costs of the infrastructure. In some industries such as manufacturing or financial institutions, companies are still reluctant to share a database with others and prefer to either create private clouds or choose the single tenant version of the cloud, where each customer has a proprietary database. One of the drawbacks of the cloud delivery model is the limitation on personalization for each customer, especially for the multi-tenant model, because any change will impact all tenants. Personalization is feasible in the single-tenant model, but customization is still hard to do, so companies which need to adapt the solution to their specific needs will have a hard time doing it in the cloud. To address these challenges, most vendors are offering cloud solutions with the same functionality as their on-premise solutions. Some vendors host the solution and the database on servers they manage. Finally, more and more ERP vendors, especially for industries such as manufacturing, offer their customers the option to move from the on-premise model to the cloud, and back.



The fact that ERP is now more affordable is an obvious advantage for companies but can also bring with it challenges, specifically integration with other software solutions. Smaller companies that have decided to use a cloud ERP solution often also require either a CRM tool or payroll software. For medium and large companies, it's not unusual to use two or more ERP solutions, one for financials, and another for production. In addition, large companies often times decide to use a robust solution for their headquarters and a lighter ERP solution for their divisions across the world. Consequently, cloud-delivered ERP solutions which are a mix of separate modules bring potentially extra challenges, since the sales modules may need to be integrated with CRM and the accounting module with payroll (Nucleus Research *m146 – The impact of business software integration on ROI*, October 2012)

Vendors have adopted a variety of approaches incorporating new technologies into their offerings to attract new customers. The optimal approach is to redesign both the software and the user interface, ensuring that the solution is not only user friendly but also technologically competitive. The database structure may need to be changed in order to allow the data to be created and retrieved without slowing down the system and/or requiring investments in IT infrastructure. Also, when changes to the source code are performed either for integration or for customization, the vendors must ensure that future upgrades of their solution will not make previous changes obsolete.

One other important trend related to new technologies is mobility. While most ERP vendors offer their solutions on mobile devices, some have simply adapted their web based interface to be accessible from web browsers on mobile devices where others have created mobile applications which provide some of the features of their core ERP offering. The complexity of ERP makes it impossible for vendors to deliver all the functionality required by ERP users on mobile devices, and there is no need for it since mobile versions are mostly used by people who are out of the office most of the time and only need access to functionality like analytics, time and expense management, etc.. Due to the advent of mobile development platforms, vendors have decided to offer mobile apps instead of add-ons or third party solutions for functionality that is not part of their core offering. Even though this trend is only in its infancy, vendors like SAP, Oracle, Microsoft, Sage, and even smaller vendors like SYSPRO, are starting to provide apps that can be easily plugged into their core ERP solutions.

Along with software solutions, professional services are an important part of the offering of any ERP vendor. Even though all of them provide some training, implementation, and support, most medium and large companies are in need of change management, business process modeling, re-engineering, and, sometimes, even organizational optimization. The more technology for software design and delivery becomes accessible, the more vendors will provide strong ERP functionality; the difference between the leaders of the future and the rest could very well be the services they provide.

## LEADERS

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Leaders include solutions provided by the following vendors: Epicor, Infor, Microsoft, Oracle, Plex Systems, Sage, and SAP.

### EPICOR ERP

Epicor now offers an integrated ERP solution, Epicor ERP. Launched in 2008 as Epicor 9, Epicor ERP is the result of a multiyear development project aimed at converging Epicor's multiple products into one product line. The new solution has been built on service-oriented architecture (SOA) using Microsoft® .NET technologies which, along with its embedded tools, provides for a flexible and extensible ERP system. It's more than 70 integrated modules provide functionality for manufacturing, distribution, retail, hospitality, and services companies.

Epicor ERP is offered in three Editions; Express, Standard and Enterprise. The Express Edition is packaged for smaller businesses, the Standard Edition is for mid-sized businesses with increased financial and operational complexity, and the Enterprise edition is for businesses with operations that span multiple companies and countries. All three of the editions are based on the same business logic and database design thus enabling customers to move from one edition to another. Epicor offers the same solution on-premise or in cloud, in both the single-tenant and multi-tenant SaaS model. To extend its footprint in manufacturing and distribution, Epicor acquired Solarsoft in September 2012. With the acquisition of Solarsoft, Epicor enhances its offering for process manufacturing and MES functionality, among others.

### INFOR LN

Infor LN is the flagship ERP solution provided by Infor which focuses on medium and large manufacturing, distribution, and services companies. One of the major strengths of the solution is its ability to integrate with other business software solutions such as ERP and PLM through the Infor ION Suite, which can also be used for business process and workflow management. Infor Workspace provides in-context business intelligence and a common look and feel across Infor products. The Dynamic Enterprise Modeling feature can be used to configure the solution based on the unique business processes and the specific needs of the company.

Infor made some important announcements in the past 12 months regarding Infor LN. The first announcement was its availability on the IBM Pure Systems platform. This platform provides tighter integration between Infor LN and other business software as well as better IT resource allocation to increase their efficiency. The availability of Infor LN on Pure Systems was announced in the second half of 2012. In July 2012, Infor LN was certified as International Financial Reporting Standards (IFRS) compliant, meaning the solution can be used successfully by companies that are, or intend to become, IFRS compliant.

### **MICROSOFT DYNAMICS AX**

Microsoft Dynamics AX is the most complete ERP solution offered by Microsoft for enterprises that provides a purpose-built foundation across multiple industries and along core ERP functionality for financial, human resources, and operations management. Its global network of partners has extended this foundation with packaged solutions and specialized services tailored to specific industries. The solution has a role-based user interface which makes it more intuitive and includes localizations for 36 countries. It offers flexible deployment options such as phased implementation on premise or in the cloud and can also be deployed as a two-tier ERP solution in larger enterprises.

The latest version, Microsoft Dynamics AX 2012, was launched in August 2011. Major functional enhancements in Microsoft Dynamics AX 2012 were provided for lean production in both discrete and process manufacturing. This solution offers improved features for project management, accounting for the public sector, and supplier relationship management, to name a few. Microsoft Dynamics AX 2012 R2 will be made available on December 1st 2012. This release includes new innovations such as functional capabilities for focus industries, improved business insights for all users, enhanced international operations, and simplified application lifecycle for IT operations.

### **ORACLE E-BUSINESS SUITE**

Oracle E-Business Suite targets both midsize and large enterprise companies by providing functionality for the management of financials, human capital, project and portfolio, procurement and supply chain, services, and customer relationships. Incorporating industry-specific best practices, Oracle also delivers more than 450 Oracle Business Accelerators for rapid implementation of Oracle E-Business Suite. To improve the user access to information, Oracle E-Business Suite can be combined with Oracle Endeca for enterprise search, with Oracle Exalytics for in memory performance analytics, and with Oracle Business Intelligence.

Oracle E-Business Suite release 12 was launched in 2007, followed by 12.1 in May 2009 and two other minor releases: 12.1.2 in December 2009 and 12.1.3 in August 2010. These releases delivered an improved look and feel for the solution, re-designed workflows for better productivity, and facilitated easier navigation with fewer clicks or steps needed to accomplish tasks. In the next year, Oracle E-Business Suite will provide enhanced functionality for discrete MES, asset performance management, and lean inventory management. Integration with Oracle Fusion Applications is currently underway for multiple applications and will be expanding into other areas (Nucleus Research *m142 – ERP and PLM Updates from Oracle OpenWorld*, October 2012).

### **ORACLE JD EDWARDS ENTERPRISEONE**

Oracle's JD Edwards EnterpriseOne is an integrated suite of more than 80 application modules for managing financials, projects, fixed assets, manufacturing, and order processing with a focus on manufacturing, distribution, services, consumer goods,

engineering and construction, and asset intensive industries. Oracle's JD Edwards EnterpriseOne Mobile Solutions allow users to access the information they need and perform tasks such as reviewing and approving purchase orders and expense reports. Advanced reporting is provided through the JD Edwards EnterpriseOne One View Reporting solution to cover all business operations areas, from financials and human resources to manufacturing and service management.

The last major release of Oracle's JD Edwards was 9.1, made available in April 2012. It provides enhancements to the user interface, mobile, and reporting capabilities. Oracle's JD Edwards EnterpriseOne Tools 9.1 was announced at Oracle OpenWorld in September 2012. It aims to reduce the costs and risks of implementations and upgrades and expands the options users have to personalize the solution. New mobile solutions will be available in the near future for self-service, business intelligence, enterprise search, and specific needs such as shop floor or warehouse management (Nucleus Research *m142 – ERP and PLM Updates from Oracle OpenWorld*, October 2012).

### **ORACLE PEOPLESOFT**

Oracle's PeopleSoft offers functionality for financial management, human capital management, supplier relationship management, project management, and supply chain management. PeopleSoft PeopleTools is a software development platform which can be used to implement and maintain all PeopleSoft modules. The most recent PeopleTools release 8.52 delivered usability enhancements for user productivity, including application search, WorkCenters and Dashboards, and enhanced reporting and analytical tools.

PeopleSoft 9.1 Feature Pack 2 was delivered in February 2012 and brings enhanced features for financial governance, healthcare materials management, and enterprise service automation. New mobile applications were released in October 2012 for expenses, approvals, and company directory. Feature Pack 2 also included many of the capabilities that are planned to be fully functional in the next upcoming major release (Release 9.2) such as global search, support for pivot grids, and support for applications using HTML5/CSS 3 (released in October for Android and iOS). Nucleus Research believes additional enhancements delivered with PeopleSoft 9.2 will further improve PeopleSoft's positioning on the usability axis for the next version of the Matrix.

### **PLEX ONLINE**

Since 2000, Plex Systems has delivered its ERP solution exclusively in the cloud as a multi-tenant model. Until recently, it was the only multi-tenant SaaS solution for manufacturing. Plex Systems started as a project for an automotive solution and has since expanded its functionality for industries such as aerospace and defense, high tech and electronics, industrial manufacturing, food and beverage, and precision metalformers. In addition to functionality for ERP, Plex Online offers modules for quality management, supply chain, manufacturing execution, customer relationship management, and business intelligence. The solution can also integrate with most leading PLM, Product Data Management and

computer aided design (CAD) products. Real-time integration is offered for hundreds of plant control equipment.

In the past year, Plex announced several important enhancements to the functionality provided by its Plex Online, such as enhanced features for electronics. In May 2012, Plex Systems introduced IntelliPlex, a business intelligence tool built on the WebFocus platform provided by Information Builders. A partnership with Adaptive Planning was announced in July 2012 to equip Plex customers with planning and reporting capabilities for manufacturing. Recently, Plex announced integration with Avalara for sales tax management. Also in 2012, Plex achieved compliance with the SSAE 16 standard for reporting on service organizations, and it received privacy certification with TRUSTe for online safeguarding of personal information.

### **SAGE ERP X3**

Sage ERP X3 is the flagship ERP solution provided by Sage, with a focus on midsized companies and localized for more than 50 countries. The solution is built on the Sage Application Framework for the Enterprise (SAFE) which makes it scalable and flexible in its implementation and maintenance. Sage ERP X3 offers preconfigured solutions for manufacturing (discrete and process), services, and distribution. In its latest major release in 2010, Sage ERP X3 provides an improved user experience with Webtop (a set of personalized widgets) and better search capabilities.

Sage launched Sage ERP X3 6.5 in October 2012 with extended cloud applications. The new version integrates with other Sage solutions delivered in the cloud, such as Sage Sales Logix for CRM, Sage Exchange for payment processing, and Sage Sales Tax for sales tax automation. The new version can also be deployed as a hybrid delivery model, which is a combination of cloud and on premise. Document management has also been improved. A new financial reporting solution is available under the name Sage ERP X3 Intelligence Reporting (Nucleus Research *m101 – Sage announcements from the Sage Summit*, August 2012).

### **SAP ERP**

SAP's flagship solution supports more than 25 industries and offers modules for financials, HCM, sales and service, procurement and logistics, product development and manufacturing, business management, and corporate services such as quality management, asset management, or product and portfolio management. SAP ERP is created on the SAP NetWeaver application and integration platform, which is based on service oriented architecture. Preconfigured solutions are delivered for each industry and the rapid deployment option can be employed for phased implementations and integration with other SAP solutions, such as CRM.

SAP ERP also benefits from the advantages of in-memory SAP HANA technology, which reduces storage costs by managing data in memory and not on disk, thereby increasing

the speed of data access and analytics. Mobile has been a major focus for SAP ERP, and there are now mobile applications which can be delivered for each line of business or industry. Analytics and business intelligence are also provided on mobile devices through SAP solutions such as SAP BusinessObjects or SAP Crystal Server. With the acquisition of Sybase in 2010, SAP accelerated the delivery of a robust mobile development platform to more easily deploy and manage mobile applications, and also to develop mobile business applications.

## **OTHERS TO WATCH**

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Other vendors whose activity and investment are likely to impact the ERP value matrix moving forward are: Aptean, Deltek, IFS, Netsuite, QAD, and UNIT4.

### **APTEAN ROSS ERP**

Aptean was created following the merger of CDC Software and Consona, in August 2012. The combined ERP offering consists of more than ten solutions, most prominently Ross ERP for recipe and formula-based manufacturers, and Made2Manage for discrete manufacturing. Aptean Ross ERP targets SMBs in industries such as food and beverage, chemicals, and life sciences. Version 7 of Ross ERP was released in April 2012 with functional enhancements and a new interface built on the .Net framework. Besides core ERP functionality, Ross ERP can also deliver solutions for content management, supply chain planning, product lifecycle management, event management, and customer relationship management.

### **DELTEK COSTPOINT**

Costpoint is Deltek's flagship solution for government contractors. Its latest version, Costpoint 7, was launched in December 2011 and has a new interface built on service-oriented architecture. From a functional perspective, Costpoint 7 offers enhancements for project management, accounting, invoicing, materials management, fixed assets, project manufacturing, and payroll. The latest version is cloud ready, and can be deployed in private clouds or hosted by Deltek. New solutions for mobile devices based on the Deltek Touch platform will be available by the end of the year for Costpoint, Vision, and Maconomy (Nucleus Research *m143 – Deltek Insight updates and announcements*, October 2012). Within the Costpoint family, Deltek updates its products for time and expense, analytics and reporting, and released PM Compass, a new integrated portal for project and portfolio management.

### **IFS APPLICATIONS**

IFS provides ERP and business software solutions for manufacturing, supply chain management, services and project oriented companies, and asset management. IFS adopted the strategy of offering one suite (IFS Applications) which includes modules for all the important needs of companies using ERP. The suite is built on service-oriented architecture (SOA), which makes it easier for customers to deploy and use only the

components that they require. Nucleus Research based its positioning of the solution on limited data, but nonetheless believes that IFS has the potential to be positioned further up on the usability axis in the next version of the matrix.

### **NETSUITE ERP**

NetSuite is one of the most important providers of ERP, CRM, eCommerce, and Professional Services solutions in the cloud. Unlike other cloud vendors, NetSuite also offers a cloud platform (Platform as a Service) which can be used to deploy, integrate and maintain various modules of the solution, along with the capacity to extend the functionality through customization using the SuiteCloud developer tools. Business intelligence functionality is delivered out of the box with SuiteAnalytics, which is also available on mobile devices. NetSuite recently announced a two-tier ERP strategy with Oracle so that companies can use Oracle E-Business Suite for their core ERP solutions and NetSuite for their subsidiaries. NetSuite can also be deployed with SAP ERP in a two-tier configuration model.

### **QAD ENTERPRISE APPLICATIONS**

QAD Enterprise Applications is an ERP suite targeting discrete and configured products manufacturing companies and industries such as automotive, life sciences, industrial products, electronics, consumer products, and food and beverage. In addition to ERP functionality delivered on premise, in the cloud, or as a hybrid model, QAD also offers modules for customer management, supply chain, service and support, asset management, and analytics. QAD enhances its ERP suite with a two-releases-a-year cycle, most recently delivering embedded business process management, enhanced analytics, functionality for the mobile user, and an improved Learning Center for training and documentation (Nucleus Research *m157 – QAD aims to become a strong competitor in the mid-market*, November 2012). QAD offers a new Easy On Boarding implementation strategy which aims at making it easier for customers to deploy and maintain ERP.

### **UNIT4 AGRESSO BUSINESS WORLD**

Agresso Business World is an ERP solution targeted at midsized services companies; and it provides functionality for accounting, procurement, project management, human resources, business process automation, field service, analytics, and reporting. The solution is also used by companies in industries such as retail and distribution, higher education, and local government. Its main advantage is its three-part (data, analytics, and delivery) VITA architecture supporting Business Living in Change (BLINC) with a post-implementation approach to ongoing business change without recoding. Agresso has a dynamic data model which allows its customers to quickly adapt to changes in their business. Agresso also provides flexible delivery models both on premise and in the cloud with Vita Cloud Angel.

## METHODOLOGY

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The Value Matrix is based on functionality and usability, the two core measures that Nucleus has found indicate an application's ability to deliver initial ROI and, ultimately, maximum value over time.

Usability composite scores are based on a number of factors including intuitiveness of the application, availability of role-based interfaces, training requirements, and productivity impact on users. Functionality composite scores are based on the breadth and repeatability of functionality in the core application, the availability and ease of integration of add-on functionality that delivers additional benefit, and the vendors' investment in innovative functionality outside the core that will deliver additional benefits.

The Matrix is divided into four quadrants: Leaders, Experts, Facilitators, and Core Providers:

- Vendors in the Leaders quadrant have invested in both functionality and usability features that are likely to deliver the greatest potential returns.
- Vendors in the Experts quadrant have invested in deep functional capabilities that, by nature, make the application more complex and thus require more training and expertise to use than Leaders.
- Vendors in the Facilitators quadrant have invested in making their applications intuitive and easy to use, driving rapid adoption with limited training requirements.
- Vendors in the Core Providers quadrant are point solutions or those that provide limited functionality at a relatively low cost, giving them a high value proposition when limited functionality is needed.

Companies can use this Matrix to assess their investment short list as well as to evaluate the case for maintaining an existing product that may lag behind the value offered by other options. Nucleus expects the center point of the Matrix, which represents the composite average point in the market, will move up and to the right over time as vendors make more investments in functionality and usability – effectively increasing the average value delivered across all products.