

TEC BUYER'S GUIDE 2016

ERP for Services

ERP FOR SERVICES

BUYER'S GUIDE

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About This Guide

The Technology Evaluation Centers (TEC) ERP for Services Software Buyer's Guide has been developed to help services organizations make an informed decision when purchasing enterprise resource planning (ERP) software. Services industries make up a large and growing portion of the economy, especially in developed countries. Yet, surprisingly, ERP solutions that target the nuanced needs of services organizations are not as numerous as those targeting manufacturing or other segments of the economy.

The term "services" organization is slightly nebulous. So, first we break down what we mean when we are talking about services industries. Next, we look at major technology trends such as social, mobile, and cloud, and what impact these are having on the ERP for services marketplace. The guide then introduces one of the latest exciting trends impacting this space—cognitive computing.

The guide will also help readers understand what is meant by an ERP solution and how a full-suite ERP solution differs from the best-of-breed approach to an organization's software landscape. The guide provides a detailed breakdown of the components that make up a complete ERP solution, and a listing of major ERP for services software solutions and how these solutions support these ERP components.

And finally, the guide includes a range of detailed and real-life case studies of how services companies have benefited from ERP software, along with a number of other resources to assist the reader in making an informed buying decision.

SERVICES INDUSTRY—A BROAD AND FRAGMENTED MARKETPLACE

“Services” industries are commonly defined as those that provide services rather than a tangible or manufactured product. Sometimes, services industries are simply considered as those that are “non-manufacturing.” Unfortunately, as a definition for the services industry, this broad-brush approach leaves a lot of blanks to fill in. Does this mean that services industries include any industry that doesn’t do manufacturing? Per recent accounts, manufacturing in the United States accounted for only 12.5 percent of the total U.S. gross domestic product (GDP) in 2013.¹ If someone says services industries are the non-manufacturing sectors of the economy, then does it mean that services account for the other 87.5 percent of the U.S. GDP? And does this mean that solutions for services industries support this huge portion of the economic output in developed economies? Not really.

The problem with defining the services industries in this way spills over into trying to find software solutions for services industries. The number of industries that fall outside of manufacturing and fall into services are broad and there are few widely agreed-upon definitions or lines that can be drawn around various services industries.

The manufacturing industries and modes of manufacturing are well defined. The manufacturing industries fall into process or discrete manufacturing modes. The discrete manufacturing modes can be further broken down into, for example, make to stock (MTS), make to order (MTO), engineer to order (ETO), and others. One can easily find tens of discrete manufacturing ERP solutions for each mode of manufacturing and even targeted at a specific standard industrial classification (SIC) code or *Nomenclature des Activités Économiques dans la Communauté Européenne* (NACE), or Nomenclature of Economic Activities, codes in the European Union. But surprisingly, although services industries encompass a vast array of businesses with varying demands, it is much more difficult to find an ERP solution that is built for a particular services industry.

¹Robert E. Scott, “The Manufacturing Footprint and the Importance of U.S. Manufacturing Jobs,” *Economic Policy Institute*, Jan 22, 2015.

To better understand services industries and the software that is built to support these industries, one needs a better definition. Economics articles break sectors of the economy into four categories: primary, secondary, tertiary, and quaternary sectors.² The primary sector includes industries that make direct use of natural resources and includes agriculture, forestry, and mining. The secondary sector includes the manufacturing and construction industries. The tertiary activities in the economy include transportation, electric, and gas services, and wholesale and retail trade. The quaternary activities include primarily finance, insurance, real estate, public administration, and other services industries (figure 1).

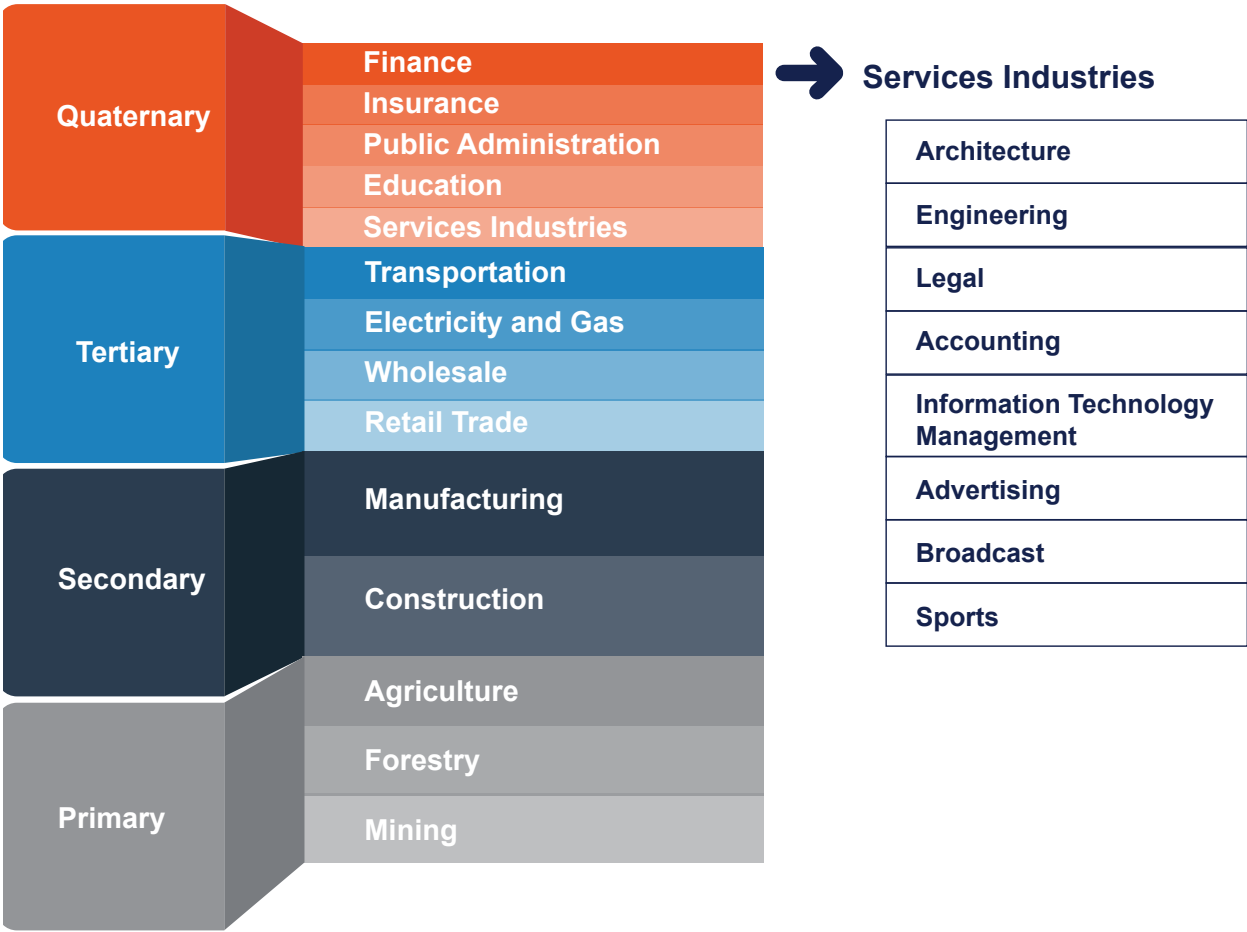


Figure 1. Traditional industry breakdown that shows services industries in the quaternary sector

²Zoltan Kenessey, U.S. Federal Reserve Board, "The Primary, Secondary, Tertiary, and Quaternary Sectors of the Economy," Journal of the International Association for Research in Income and Wealth, December 1987.

These four sectors of the economy provide a better starting point for narrowing down the definition of a services industry for the purposes of this buyer's guide and ERP for services software selection. Yet the quaternary activities are still fairly wide and cover many unique industries that provide different services. The financial services include retail, commercial, and private banking services, capital markets, and various non-healthcare insurance products. Healthcare services include payer and provider, managed care, hospital, and patient services, while public sector services are provided at the federal, state or provincial, and local level. Other services provided are for educational institutions of all levels. And finally, there exists a substantial list of other services industries, including professional services firms, architecture, engineering, and construction (AEC), and media and entertainment industries. This final list of services industries is defined by Microsoft as "talent-driven, project-centric, and intellectual-capital intensive" (TPI).

The bulk of the content in this guide—including the product comparison chart and survey results—is developed to speak to these TPI sectors of the economy. It's not that the other non-TPI services industries aren't important. The financial services, public sector, education, and healthcare services are critical to the economy. And while these industries do require some of the same ERP software capabilities as the TPI industries—such as financials or human capital management (HCM)—other unique needs like capital accounts for finance, or judicial services under the public sector are outside the scope of this guide.

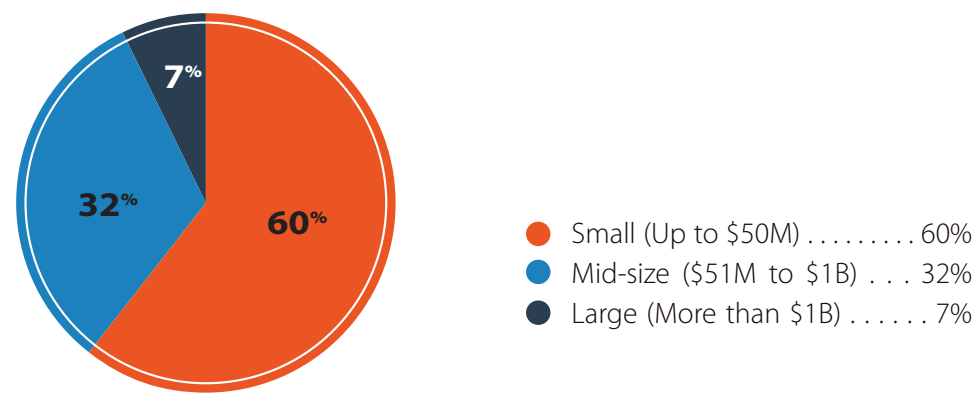
SERVICES INDUSTRY CHALLENGES

Services industries face a number of unique business challenges, including maximizing resource utilization, managing project costs, and hiring and retaining qualified staff. ERP for services software will help organizations manage these challenges and succeed in an increasingly competitive marketplace. Since the services industries are project-centric and talent-driven, the majority of the challenges revolve around staffing and managing projects.

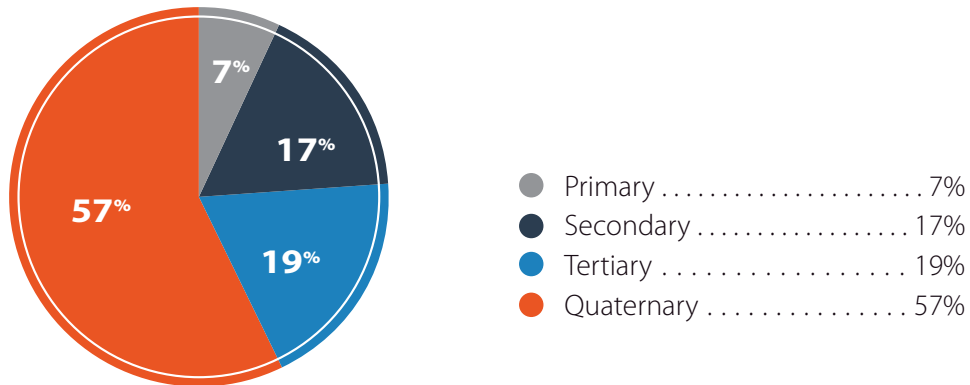
To better understand services industry business challenges—along with other services industry software market trends—TEC has developed and conducted a research survey focused on the services industry. The TEC services survey was developed with two goals in mind:

- 1. Help organizations benchmark themselves against others in their industry
- 2. Provide a voice for the customer to software vendors, and reveal customer concerns and directions

Business Size



Business Sector



Geography of Respondents



Values represent the number of respondents (more than one selection allowed)

The first question was: “What are your top business challenges?” This question was asked to determine which part of the business is the most challenging. The respondents were allowed to select one or more responses. The number one response received was that organizations are most concerned with maximizing resource utilization. Next—and not far behind—we see the challenge of project planning and execution. Managing project costs, managing customer relationships, and finding new business were in the next tier of concerns and scored equally among the respondents. Talent management expanding into global markets were not seen as challenging as the other problems. This is interesting because there is currently a lot of press and attention given to talent management, and particularly globalization.

Note that this question also indicates what area or component of an ERP solution would best help meet these particular business challenges. The survey results, shown in figure 2, imply that the major business challenges faced by organizations could be well serviced by having a robust ERP for services solution. Project planning and execution, resource utilization, and managing project costs are key capabilities that need to be centrally addressed by a complete services solution. Finding new business and managing customer relationships were also high on the respondents’ minds. This points to the need for a strong customer relationship management (CRM) component within the ERP solution. Talent management capabilities to support hiring and retaining qualified staff were somewhat lower on the list of challenges.



Figure 2. Top business challenges for services industry organizations (percentage of respondents)

The survey also asked respondents to identify their ERP-related initiatives during the coming year. Here, we wished to determine where organizations are focusing their efforts in the coming year. We see that nearly 50 percent of respondents are pursuing either a replacement or an upgrade to their entire ERP system. The next tier of initiatives includes time and expense management, CRM, project quoting and scheduling, and HCM. The bottom tier of responses is rounded out with marketing automation and subcontractor staffing solutions.

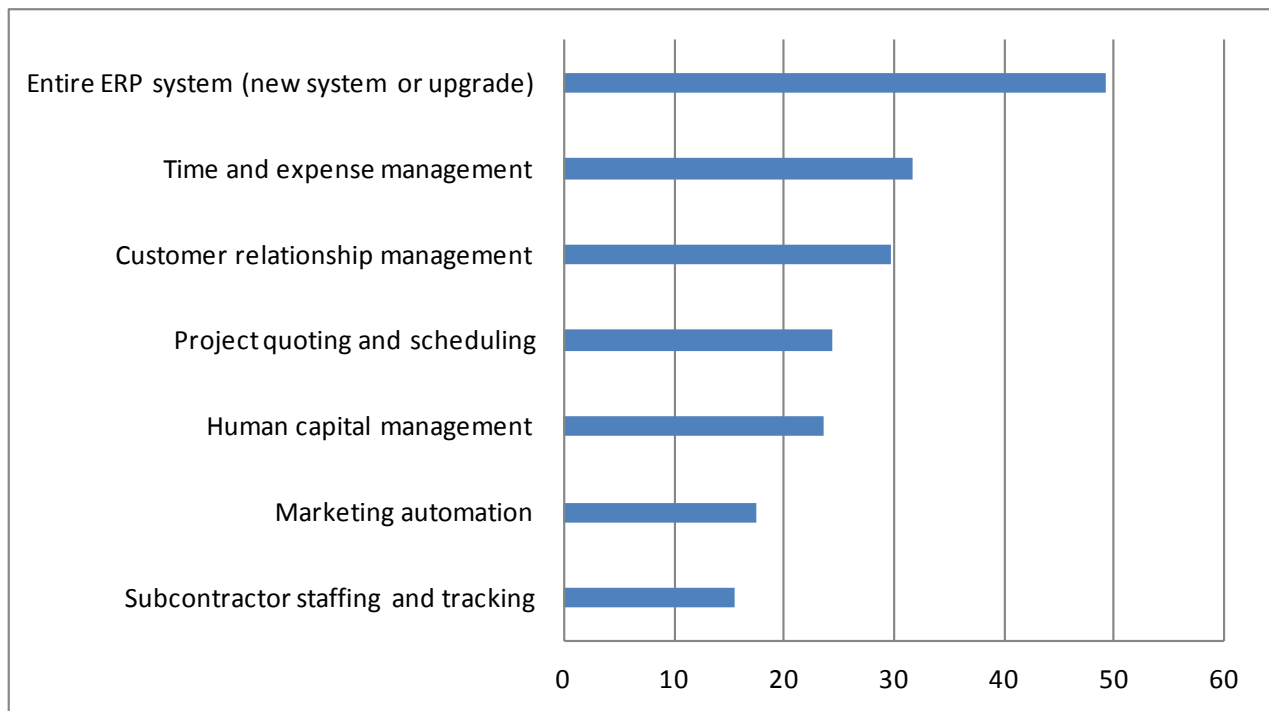


Figure 3. ERP-related initiatives in the coming year (percentage of respondents)

In the survey, we also sought to gauge the level of satisfaction customers have with both their software provider and vendor. The survey asked users: “What are your least favorite aspects of your current software?” Here we have some interesting results. With the years of effort that have gone into ERP systems, one would think that the user experience, flexibility, and scalability of the system would not be as high on the list. However, these results show that ERP solution vendors still have a long way to go toward meeting the expectations of the user community. Another interesting finding is that very few of the respondents really have a problem working with the ERP vendor. This seems contradictory, but it tells us that people have good relationships with the vendor, but they still would like to see more delivered.

Mobile device support wasn't seen as a major problem, with less than 30 percent of respondents seeing this as an issue. One other point is that the initial capabilities of the systems are less of a concern among users. This is because the solutions continue to mature in functionality. In other words, most solutions can provide solid capabilities like financial management, employee tracking, and so on. However, the solutions still fail to excite the respondents when it comes to the overall user experience.

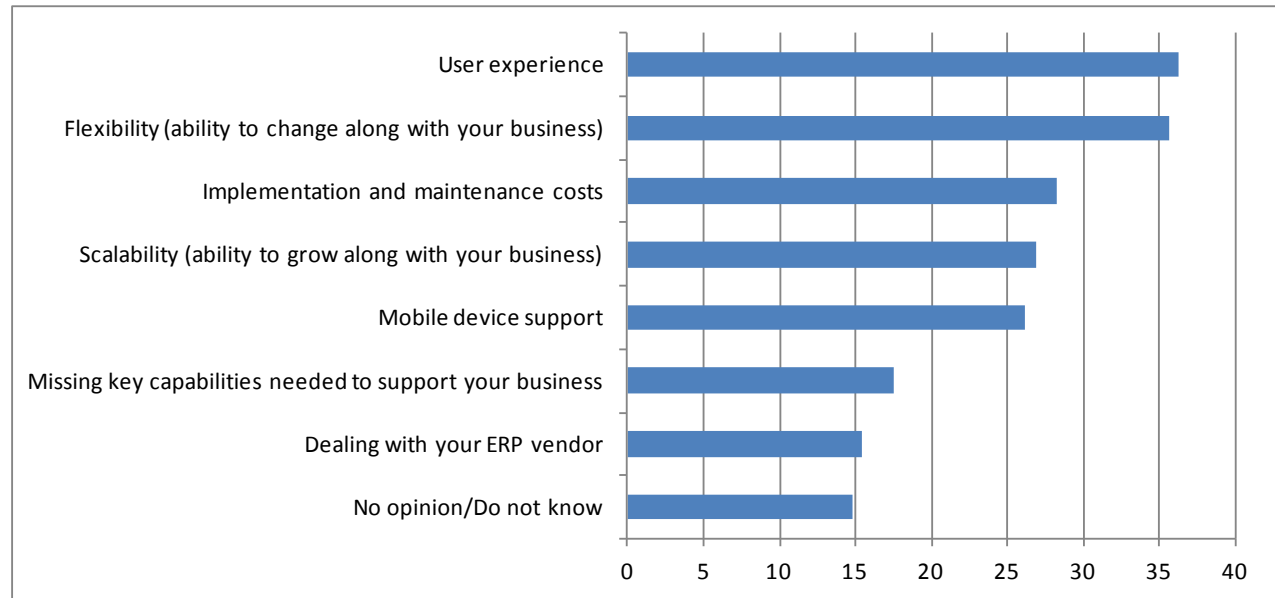


Figure 4. Levels of user satisfaction with aspects of current software (percentage of respondents)

TECHNOLOGY TRENDS

Social, Mobile, Analytics, and Cloud (SMAC)

Social, mobile, analytics and big data, and cloud—the technologies that have driven software changes over the last few years—will continue to have a major impact on ERP software over the coming years (figure 5). [Some](#) are even labeling the rise of these technologies the start of the next IT era. TEC has discussed these technologies in detail in its [2015 ERP for Wholesale and Distribution Buyer's Guide](#). In this guide, we will highlight how these technologies are impacting ERP for services software and the services industries.



Figure 5. SMAC

Social

Public social networks (Facebook, Twitter, Snapchat) and private, enterprise social collaboration tools are being used for more interactions. Services industries aren't necessarily as exposed to consumer scrutiny as certain other industries. For example, IBM's services division isn't under nearly the same level of public scrutiny as, for example, Coca-Cola, Volkswagen, or other consumer-facing products and brands. But, services organizations still need to be able to take advantage of social networks. Thus, ERP solutions need to enable marketing campaigns that incorporate social media platforms. Enterprise collaboration tools have not replaced email but rather have added another set of tools that people need to interact with. This may be because there are so many players in the field. SAP Jam, Microsoft Yammer, Salesforce Chatter, Infor Ming.le, and Deltek Kona are just a few of the players in this crowded space. No single tool has become the next Outlook, and it looks like this will continue to be the case.

Mobile

Mobile device use and adoption is continuing at a rapid pace. [Gartner](#) estimates that smartphone shipments will exceed 1.95 billion units in 2016. Software vendors are responding by moving to a "mobile first" development paradigm with future software development.

Vendors are following two paths in moving ahead with mobile first development. First, vendors can develop the applications with responsive design wherein the interface will adapt to the device used to work on the application. Most of this work is now being done using HTML5, because the language is built to run across multiple platforms and is supported by all leading browsers. HTML5 also supports multimedia formats such as audio, video, and image files.

In addition to a responsive interface that can run on any web browser, vendors will also develop native mobile applications. Native mobile apps are written on Apple iOS or Google Android operating systems. Vendors will develop native apps that are better suited to a smaller screen mobile device and also take advantage of unique device features such as the camera or global positioning system (GPS). Smaller vendors have to choose their direction wisely because they cannot afford to build extensive support for both of these mobile development options.

Analytics and Big Data

Not only are people creating more and more data every day, but the growing number of smart, connected devices are also churning out more and more data. [IBM](#) says that we are currently creating 2.5 quintillion bytes of data daily and a large portion of this data is unstructured. To take advantage of this data requires new analysis tools and improved database technologies. For ERP systems, we see vendors continuing to deliver richer analytics tools that enable users to easily visualize and interact with the data in the system. Most of these tools are also built to allow everyday users of the system to build sophisticated reports without needing the help of dedicated IT staff.

Predictive analytics capabilities are also starting to be added directly into ERP solutions. But, to realize the full power of predictive analytics, one needs to look to specialized analytics tools from vendors such as SAS, IBM, KNIME, and RapidMiner. These tools still have a fairly steep learning curve and remain within the purview of data scientists, but some “predictive” reports are starting to be introduced by ERP vendors for certain standard operational situations. Along with these major analytics vendors, other niche vendors are also offering predictive analytics for areas such as finance, human resources, or even student dropout factors. As this area matures, we look forward to seeing broader sets of predictive analytics reports integrated into the ERP vendors’ suites.

The underlying database technology landscape is also shifting in part to leverage the large amounts of unstructured data. SAP’s in-memory, column-oriented HANA database is shaking up the market and shifting customers away from Oracle and Microsoft, while Hadoop is becoming the face of big data and is being adopted by more [organizations](#).

Cloud

If asked to choose, we would have to say that, of the SMAC technologies, the cloud is currently having the most impact on the ERP market. The mobile revolution instigated by Apple with the iPhone in 2007 may have been the single most significant event in recent ERP history, but the cloud is now garnering a bigger mindshare among ERP vendors.

The cloud gives companies of all sizes access to a virtually unlimited amount of computing power, tools, and software. This is significant for smaller companies as it helps to level the playing field with larger competitors. The scope of cloud services available today includes many offerings for infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS). Accessing these powerful resources is almost as easy as turning on the kitchen faucet. All anybody needs is a credit card and an Internet connection to start using systems that not so long ago would have taken months just to get up and running.

Cognitive Capabilities

Cognitive capabilities are finally moving out of the labs and being applied to many problems, including how to make ERP systems more powerful. These cognitive capabilities emerged out of years of artificial intelligence (AI) development efforts and are now beginning to bear fruit. The current cognitive capabilities that are being used with ERP solutions include machine learning, computer vision, natural language processing (NLP), speech recognition, and expert systems for tasks such as planning and scheduling.

These technologies hold not only many promises but also potential risks. In 2015, in an [interview](#) with the BBC, theoretical physicist Stephen Hawking warned that, “The development of full artificial intelligence could spell the end of the human race.” Hopefully, that won’t be for

some time. For now, we'll briefly look at some of the cognitive capabilities and how they are being applied to ERP software solutions.

Machine Learning

In 1959, Arthur Samuel defined machine learning as a “field of study that gives computers the ability to learn without being explicitly programmed.” The application of machine learning has come a long way since 1959. One of the most famous products in this category is IBM's Watson. Watson uses a combination of machine learning, NLP, and other computational techniques to process massive amounts of unstructured data to arrive at possible best answers. After being crowned the undisputed Jeopardy champion, Watson is now helping physicians and medical practitioners give expert advice, make travel recommendations, and change veterinary care.

Machine learning is starting to be used in ERP systems to help automate relatively simple user tasks, such as recommending the optimal project plan based on past experience or the best supplier to use for a particular product. Predictive analytics (mentioned above) also uses machine learning to help predict future events.

Natural Language Processing (NLP)

A machine can interpret unstructured text in the same way people can turn text into an action. For example, a person would say, “Requesting a day off next Friday.” Currently, for a person to put the request into a system, they would go into the time-off request screen in the system, pull up the calendar to look for the following Friday, and book the eight hours of vacation time. An NLP engine interprets this text and can execute the proper commands for the user. There are now NLP tools that are available for vendors to leverage, including the Stanford NLP Suite and Apache OpenNLP.

Speech Recognition

Speech recognition, when combined with other cognitive technologies, is starting to hit the mainstream. Siri from Apple and Cortana from Microsoft start with the ability to recognize human speech. ERP vendors are currently working on how and where to integrate similar digital assistant services with their systems. ERP vendors have been slow to recognize the value of a digital assistant, but it seems like it's only a matter of time until we can tell our devices, “Create a new expense report for my trip to New York,” and the system will actually comply. Voice-prompted entry of transactions will soon be more prevalent.

Overall, these and other cognitive capabilities will continue to automate various common tasks. This is an expansive field of research and work. Forward-thinking vendors are researching how to apply these cognitive capabilities to their applications. Some of these, if done correctly, could truly be game changers.

ERP SOLUTION COMPONENTS—ERP VERSUS BEST-OF-BREED SOLUTIONS

ERP solutions are built as a unified suite of application components to manage an organization's business processes. The diagram below displays the major application components that make up an ERP for services software solution (the product comparison chart on [page 24](#) gives a more detailed breakdown of the major functional components).

The ERP solution application components are built together to form a single solution that manages all the business processes of the organization. In a best-of-breed solution, one or more of the individual components will be selected from different vendors with the goal of buying the best of the best for each application component.



Figure 6. ERP for services application components

Services organizations are often torn between attempting to deploy a single ERP solution that will manage all of the organizations' needs, and using a best-of-breed approach. There are pros and cons for either approach, but experience has taught us that most organizations prefer having a single, unified ERP solution to meet all of their organizations' needs.

One of the primary reasons for a single ERP system is that it provides a single source of truth for a business. The unified system of record across all business processes also gives executives insight, in real time, into business opportunities, in-progress projects, and completed projects. The report [2014 Project-based ERP Buyer's Guide](#) from SPI Research—drawn from their Professional Services Maturity benchmark—shows marked improvement in a number of key performance indicators (KPIs) for organizations using an integrated ERP solution. Most notably, this included a 27 percent increase in earnings before interest, taxes, depreciation, and amortization (EBITDA), and a 12 percent increase in revenue per employee, among other benefits.

A single solution also means that users have a single user interface for managing all daily activities—a user doesn't have to learn a new interface for different daily tasks needed to get things done. A single solution also reduces the IT landscape complexities and costs associated with having multiple best-of-breed solutions.

In researching this guide, one theme that came out of discussions was that many services organizations are using their "ERP" systems as little more than glorified financial packages. Services organizations will often have a separate tool for managing projects and portfolios (for example, Microsoft Project or Oracle Primavera P6), a popular expense management tool such as Concur, and a time and attendance product. These tools are then tightly or loosely tied to the financials of the "ERP" system.

More surprising is that many organizations are still relying on spreadsheets and manual processes to manage areas of the business. The project management office may be responsible for pulling together timesheet information and rolling it up to a master sheet that is then loaded into the financial system. Project status may be manually posted to a project portfolio system, which has a manual interpretation of project status. All these disconnected processes create delays and errors as the data is moved from one source to another and then rekeyed across systems.

In the survey conducted for this buyer's guide, TEC asked its user communities how they would describe their current software landscape. The choices ranged from a "single, unified ERP system" to a "patchwork of loosely integrated solutions". The results show that there is a fairly even split between users who have an ERP system as the core and users with loosely integrated systems (either disconnected best-of-breed or patchwork of solutions). While the survey also

revealed that more than half of the respondents are looking to either install a new ERP system or upgrade their current system, there is little evidence to indicate that most organizations will be able to get away from continuing to have a number of systems to support all the needs of their operations.

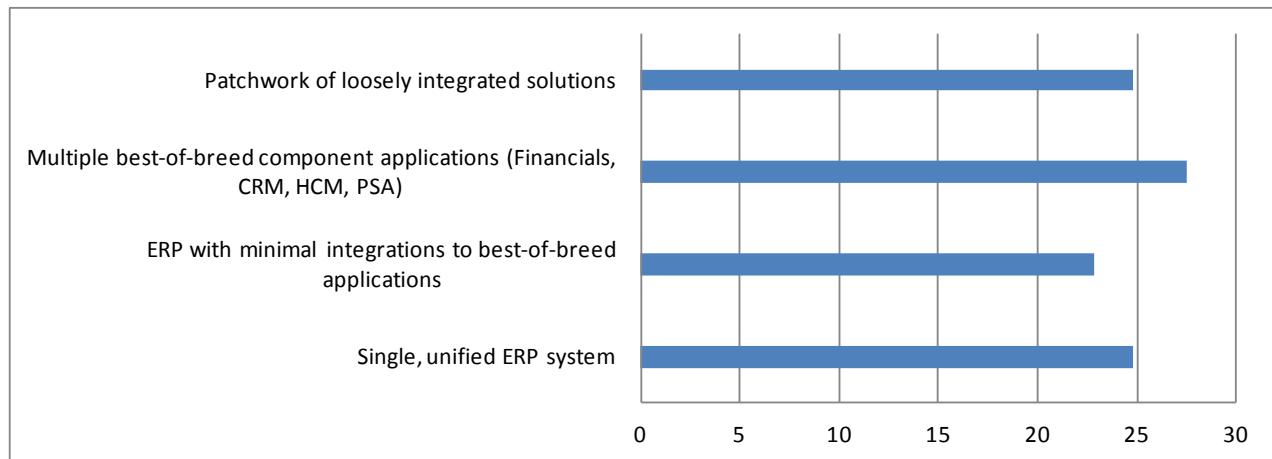


Figure 7. ERP for services survey—the current software landscape (percentage of respondents)

There are other classes of software that services industries need to look at, which include project portfolio management (PPM) and professional services automation (PSA) software. PPM and PSA software focus on the project and people parts of the services organization operations but often don't manage the back-office (financials and human resources) or the front-office CRM functions. Though this guide focuses on full ERP suites, PPM and PSA solutions can also provide an organization with a balance between having loosely coupled systems and an ERP suite.

Keep in mind, the unified ERP solution is only as good as its individual application components. An ERP solution with strong application components helps solve many of the major business challenges that services organizations face. The CRM component helps find new business and ensure that the new business will be properly staffed and executed. At the same time, if a new business opportunity cannot be properly staffed with existing personnel, an integrated HCM solution could aid in identifying a pool of possible candidates to staff the work. The project management tool should be able to provide support for all of the scheduling needs, including appropriate resource and capacity management, along with supporting extensive project costing. Only an integrated solution with solid component applications can provide benefits across all business processes within the services organization.

ERP FOR SERVICES SOFTWARE CAPABILITIES

Services industries by nature run project-centric operations. This is very different from manufacturing industries, which run primarily product-centric operations. ERP systems for services organizations must therefore be project-based. This means that a project needs to be part of almost every transaction in the system. Many ERP systems were built first for manufacturing industries and were conceived with a product-centric approach. Their purpose was to design products, manufacture them, and bill for them. When project-based organizations try to use product-centric ERP systems to track the full cost of every transaction in the system, they are forced to distribute the project information across system transactions via extensive system modifications or customizations. When evaluating ERP for services industries, it's critical that the system be designed for project-based operations first.

In this section, we'll define the ERP capabilities that are built in for supporting services organizations. This is a high-level description of the system capabilities that really only scratches the surface. There is much more that goes into the development of a full request for information (RFI) when an organization begins its ERP software selection process, and TEC's research questionnaire for the ERP for services software market contains more than 3,000 functional criteria. The descriptions in this section align with the capabilities featured in the product comparison chart.

Overlaying all these capabilities are the requirements some organizations have in order to support working with government agencies. Contracting for the U.S. Federal government in any industry requires that a company comply with the federal acquisition regulations (FAR). FAR is extremely complex and requires that the ERP system be built from the ground up to support these requirements. Similarly, the European Union and other countries have extensive government contract guidelines that an organization needs to follow to do business in these countries and regions.

Portfolio and Project Management

Portfolio and project management capabilities are where organizations realize the value of their chosen ERP for services solution. In this area, we break down significant areas of functionality as portfolio management, individual project management, resource and capacity management, project costing, subcontracting, and project financial performance tracking.

PPM allows an organization to look at groups of projects within a portfolio. For example, an IT consulting organization could have portfolios of pre-sales, infrastructure, and software development projects. This might be further grouped by other characteristics such as size, region, or some other attribute that is important to the organization. Grouping the projects into portfolios allows a company to view and manage the portfolios, as opposed to managing on an individual project basis.

For project management, we are seeing that services ERP software vendors differentiate themselves by adding more robust features around resource and capacity management and project costing and billing. All solutions have good support for project management basics such as building out the work breakdown structures (WBS) with tasks and milestones. Individual, generic, and group resources can be assigned to the task, and schedules are built using infinite capacity planning. As revealed in the TEC services survey, some of the biggest business challenges include maximizing resource allocation and managing costs. The ERP solutions that stand out are those that provide additional resource and capacity management capabilities, such as helping to maximize a resource across multiple projects, matching resources based on best fit, or allowing organizations to easily handle matrix management relationships. Additionally, being able to control costs and handle sophisticated billing scenarios are product differentiators.

Subcontracting support, previously a nice-to-have, is becoming a necessity in ERP for services solutions. Subcontracting is more than just bringing in an outside party to work on a project and then paying that party for the time worked on the project. Providing the subcontractor with full visibility into their job, tracking the subcontractor's skills and licenses, and subcontracting entire portions of projects are becoming the norm.

Time and Expense Management

Time and expense (T&E) management for services industries is like eggs and bacon for breakfast—a common, necessary activity. Time and expense entry might seem like a mindless activity: simply enter time into the timesheet against the appropriate project, submit for approval, and done. Same for expenses. But there are other key things to keep in mind when evaluating T&E management software. Time and expense management tools are one part of

the solution that must support “any device, anywhere” business operations. For T&E approvals, the software must also offer flexible approval processes. Here is where the ERP system’s tight integration with the human resources (HR) system is important. When the T&E components are integrated with the HR system, management approval can be seamlessly put in place along with alternate routings of approvals in case the manager is unavailable. Time and expense management solutions should help increase efficiency, increase productivity, and better improve the bottom line.

Front Office

The front-office components of an ERP for services solution include CRM and marketing automation. A CRM system is where a company manages all the customer contact information and conversations. Each sales lead can be tracked with information such as source, type, worth, status, and likelihood of closure. Here is where the company also manages project bids and proposals. Integrated marketing automation tools are an important part of an organization’s front-office toolkit. Marketing automation tools help create and track targeted marketing campaigns to help grow a business. Successful services organizations keep a close eye on their customers by using an integrated CRM system and marketing automation tools.

Back Office

Though often not viewed as the most exciting part of the organization, smooth back-office operations are critical for a services organization to be successful. Back-office components include financials, HCM, grant management, and service management. Financials includes the general ledger, accounts payable, accounts receivable, fixed assets, cost accounting, and cash management. HCM will include personnel hiring and management, benefit management, payroll management, employee self-service, and training.

Grant management is important for a number of services organizations, including those in the nonprofit sector and for higher education and research organizations. Finally, service management functionality helps companies manage customer support calls and service contracts, and also manage parts and inventory required to support the customer. These service management capabilities are not a common feature of ERP for services solutions. However, companies that must manage these types of services are a growing part of the economy, and services organizations may need to consider their need for service management functionality. Many IT companies, for example, provide a range of managed services. Another growing trend is manufacturing organizations that are switching from selling the manufactured product to selling the amount of time the product is in service.

Business Platform Capabilities

Top systems are built on a solid fundamental set of platform capabilities. Much like the foundation, plumbing, and electrical in a building, the business platforms are at the heart of all the operations of the ERP system. Included in the platform category are

- knowledge management,
- workflows, alerting, and notifications,
- reporting, analytics, and business intelligence, and
- enterprise social collaboration.

Globalization and Localization

As our data shows, globalization is not one of the top concerns for services organizations. However, as a company grows there comes a time when it may need to operate in multiple currencies and languages. In the age of globalization, even when not required, it might be beneficial for companies to operate in multiple languages. Supporting people who speak other languages can open up additional sales opportunities to help grow business and sales. When evaluating ERP solutions for multi-language support, make sure to look deep into how the vendor supports other languages. Some will say they support another language but really all they do is allow for an alternate language to be displayed on the screen for system functions, form, and field labels.

Delivery Models

Most vendors offer flexibility in delivery models. Vendors have on-premises, hosted SaaS, or private or public cloud options for a customer to choose from. It is also becoming the case that some vendors will offer only a SaaS delivery model. There are a number of pros and cons to the different delivery models, and an enterprise software buyer should carefully consider the short- and long-term ramifications of the different delivery models. For a more in-depth discussion of cloud and software delivery models, refer to the [TEC Cloud ERP Buyer's Guide](#).

	Adeaca Corp. Adeaca ONE Feature Release 15	Deltek Systems, Inc. Ajera 9	Deltek Systems, Inc. Maconomy 2.2.3	FinancialForce FinancialForce ERP Spring 2016
Functionality				
Portfolio and Project Management				
Portfolio management	S	S	S	S
Project management	S	S	S	S
Resource and capacity management	S	S	S	S
Project costing	S	S	S	S
Subcontracting	S	S	S	S
Project financial performance tracking	S	S	S	S
Time and Expense Management				
Time management	S	S	S	S
Expense management	S	S	S	S
Front Office				
Marketing automation	S	A (Deltek Ajera CRM)	NS	A (partners within the Salesforce ecosystem)
Customer relationship management (CRM)	S	A (Deltek Ajera CRM)	S	A (Salesforce)
Back Office				
Financials—accounts receivable (AR), accounts payable (AP), general ledger (GL)	S	S	S	S
Human capital management (HCM)	S	NS	S	S
Grant management	S	NS	S	NS
Service management	S	S	S	S
Business Platform Capabilities				
Knowledge management	A (Microsoft Dynamics CRM)	A (Kona)	S	A (Salesforce)
Workflows, alerts, and notifications	S	S	S	S
Reporting, analytics, and business intelligence (BI)	S	S	S	S
Enterprise social collaboration tool	S	A (Kona)	S	A (Salesforce Chatter)
Globalization and Localization				
Multicurrency capabilities	S	NS	S	S
Multicompany support	S	S	S	S
Multilanguage support	S	NS	S	NS
Delivery Models				
On premise	S	S	S	NS
Vendor-hosted software as a service (SaaS)	A (AX7 platform)	S	S	S
Private or public cloud platforms	A (AX7 platform)	S	S	S

S, Fully supported out-of-the-box | A, Supported via the indicated add-on or third-party product | NS, Not supported

	IFS IFS Applications 9	Infor CloudSuite Corporate 10	Microsoft Dynamics AX R3	NetSuite NetSuite ERP 2015.2
Functionality				
Portfolio and Project Management				
Portfolio management	NS ¹	A (Infor PSA)	S ³	NS
Project management	S	A (Infor PSA)	S	S
Resource and capacity management	S	A (Infor PSA)	S	S
Project costing	S	S	S ³	S
Subcontracting	S	S	S	S
Project financial performance tracking	S	S	S	S
Time and Expense Management				
Time management	S	A (Infor PSA, Infor XM)	S	S
Expense management	S	A (Infor PSA, Infor XM)	S	S
Front Office				
Marketing automation	NS	A (Infor MRM)	S ⁴	S
Customer relationship management (CRM)	S	A (Infor CRM)	S ⁴	S
Back Office				
Financials—accounts receivable (AR), accounts payable (AP), general ledger (GL)	S	S	S	S
Human capital management (HCM)	S ²	S	S	S
Grant management	NS	S	S	A (Fluxx Labs)
Service management	S	S	S ⁵	S ⁶
Business Platform Capabilities				
Knowledge management	S	A (HCM Edge)	A (SharePoint)	S
Workflows, alerts, and notifications	S	S	S	S
Reporting, analytics, and business intelligence (BI)	S	S	S	S
Enterprise social collaboration tool	S	A (Infor Ming.le)	A (Yammer, SharePoint)	S
Globalization and Localization				
Multicurrency capabilities	S	S	S	S
Multicompany support	S	S	S	S
Multilanguage support	S	S	S	S
Delivery Models				
On premise	S	S	S	NS
Vendor-hosted software as a service (SaaS)	S	S	S	S
Private or public cloud platforms	S	S	S	NS

S, Fully supported out-of-the-box | A, Supported via the indicated add-on or third-party product | NS, Not supported

¹ IFS supports some aspects of portfolio management, but is not a portfolio management application.

² IFS Applications supports key Hire to Retire processes but leverages ADP for payroll.

³ Extended via independent software vendor (ISV) solutions.

⁴ Extended with Dynamics CRM and Parature.

⁵ Extended via FieldOne and ISV solutions.

⁶ Additional support provided via third-party tools like FieldAware and FieldPoint.

	Oracle Oracle ERP Cloud Release 11	Oracle Oracle JD Edwards EnterpriseOne Release 9.2	Ramco Systems Ramco Services Resource Planning (SRP) RES 5.2 CU18
Functionality			
Portfolio and Project Management			
Portfolio management	S	S	NS
Project management	S	S	NS ⁸
Resource and capacity management	S	S	S ⁹
Project costing	S	S	S
Subcontracting	S	S	S
Project financial performance tracking	S	S	S
Time and Expense Management			
Time management	A (Oracle HCM Cloud) ⁷	S	S
Expense management	S	S	S
Front Office			
Marketing automation	A (Oracle Customer Experience Cloud) ⁷	A (Oracle Customer Experience Cloud)	NS
Customer relationship management (CRM)	A (Oracle Customer Experience Cloud) ⁷	S	S
Back Office			
Financials—accounts receivable (AR), accounts payable (AP), general ledger (GL)	S	S	S
Human capital management (HCM)	A (Oracle HCM Cloud) ⁷	S	S
Grant management	S	S	NS
Service management	A (Oracle Customer Experience Cloud) ⁷	S	NS
Business Platform Capabilities			
Knowledge management	A (Oracle Customer Experience Cloud) ⁷	A (Oracle Customer Experience Cloud)	NS
Workflows, alerts, and notifications	S	S	S
Reporting, analytics, and business intelligence (BI)	A (Oracle Analytics Cloud, Oracle EPM Cloud) ⁷	A (One View Reporting, Oracle BI, Oracle cloud products)	S
Enterprise social collaboration tool	S	A (Oracle Social Network)	NS
Globalization and Localization			
Multicurrency capabilities	S	S	S
Multicompany support	S	S	S
Multilanguage support	S	S	S
Delivery Models			
On premise	NS	S	S
Vendor-hosted software as a service (SaaS)	S	A (various partner offerings)	S
Private or public cloud platforms	S	A (Oracle Managed Cloud Services, select partner solutions)	S

S, Fully supported out-of-the-box | A, Supported via the indicated add-on or third-party product | NS, Not supported

⁷ Connects to other Oracle cloud products.

⁸ Project administration and profitability are supported, but not project planning and scheduling.

⁹ Capacity management is not supported.

	Sage Sage X3 9	SAP SAP Business One 9.2	Unit4 Unit4 Business World Milestone 5	Zavanti Zavanti ERP 11
Functionality				
Portfolio and Project Management				
Portfolio management	S	A (Beas Group, Variatec)	S	A (Planisware)
Project management	S	S	S	S
Resource and capacity management	S	S	S	S
Project costing	S	A (Beas Group)	S	S
Subcontracting	S	A (Beas Group)	S	S
Project financial performance tracking	S	S	S	S
Time and Expense Management				
Time management	S	A (Maringo)	S	S
Expense management	S	A (SAP Concur)	S	S
Front Office				
Marketing automation	S	S ¹⁰	NS	S
Customer relationship management (CRM)	S	S	A (various partners)	S
Back Office				
Financials—accounts receivable (AR), accounts payable (AP), general ledger (GL)	S	S	S	S
Human capital management (HCM)	NS	S ¹¹	S	S
Grant management	NS	S	S	S
Service management	S	S	S	S
Business Platform Capabilities				
Knowledge management	S	S	S	S
Workflows, alerts, and notifications	S	S	S	S
Reporting, analytics, and business intelligence (BI)	S	S	S	S
Enterprise social collaboration tool	S	NS	S	NS
Globalization and Localization				
Multicurrency capabilities	S	S	S	S
Multicompany support	S	S	S	S
Multilanguage support	S	S	S	S
Delivery Models				
On premise	S	S	S	S
Vendor-hosted software as a service (SaaS)	S	S	S	S
Private or public cloud platforms	S	S	S	S

S, Fully supported out-of-the-box | A, Supported via the indicated add-on or third-party product | NS, Not supported

¹⁰ Primarily campaign management.

¹¹ Supports primarily HR master data.

Product Profiles

Vendor: Adeaca Corp.

Product: Adeaca ONE

Version: Feature Release 15

Managing project-centric enterprises is different. It is all about milestones, timely decision making, and knowing the exact status of the project portfolio. Adeaca ONE is an ERP suite that supports business processes of project-centric enterprises and aims to provide C-level executives with insight to run and optimize their business. Adeaca ONE is built on the Microsoft Dynamics AX platform.

Vendor: Deltek Systems, Inc.

Product: Ajera

Version: 9

Deltek Ajera is an accounting and project management software built specifically for architects and engineers. Ajera is an integrated project management and accounting system that aims to provide accurate and up-to-date data, communication, and accessible reporting. Central to Ajera is its customizable dashboards, offering the business intelligence and instant access to information companies need for better insight and decision making.

Vendor: Deltek Systems, Inc.

Product: Maconomy

Version: 2.2.3

Deltek's fully-integrated enterprise solution Deltek Maconomy is designed to support the key processes of businesses that deliver project-based services to their end customers. Deltek customers using Maconomy come from all segments of professional services, including agencies, audit and tax, consulting, legal services, and scientific research. Maconomy supports a wide range of functions that power key processes across professional services firms, including financial management, project management, business intelligence, and social collaboration.

Vendor: FinancialForce

Product: FinancialForce ERP

Version: Spring 2016

FinancialForce is a cloud ERP vendor with apps built entirely on the Salesforce App Cloud. The company's financial management, professional services automation (PSA), and HCM offerings provide services-centric businesses with a platform that organizes sales, services, finance, and HR around customers. FinancialForce.com aims to allow businesses to be more responsive to customer needs.

Vendor: IFS

Product: IFS Applications

Version: 9

IFS develops and delivers enterprise software for ERP, enterprise asset management, and enterprise service management. IFS aims to bring customers in targeted sectors closer to their business, help them be more agile, and enable them to profit from change. IFS supports more than 1 million users worldwide from its network of local offices and through a growing ecosystem of partners. In addition to the processes supported by all business systems, such as finances, inventories, traditional manufacturing, and customer management, IFS Applications support the entire lifecycle of products, from construction to maintenance and aftermarket services.

Vendor: Infor

Product: CloudSuite Corporate

Version: 10

Infor's strategy is to deliver complete enterprise business management suites in the cloud that are tailored to industry. Infor's customers come from sectors like health care, public sector, hospitality, retail, financial services, insurance, banking, and professional services (including consulting, staffing, and other services businesses). CloudSuite Corporate was packaged and launched for broad market coverage with capabilities across HCM, financials, supply management, and enterprise performance management. Infor also offers industry-tailored CloudSuites, based on CloudSuite Corporate, for the healthcare and public sectors.

Vendor: Microsoft

Product: Dynamics AX

Version: R3

Professional services industry solutions from Microsoft have evolved over many years, with a number of key elements coming together recently to create a strong and integrated enterprise solution. Microsoft Dynamics AX offers a flexible suite of business solutions developed to help service professionals manage professional and intellectual capital, deliver timely and distinctive client service, and embed quality, efficiency, and risk management into business processes. With its enterprise solutions, Microsoft aims to enable firms to empower their most valuable assets—their people—and leverage them across the company to deliver consistently outstanding client experiences.

Vendor: NetSuite

Product: NetSuite ERP

Version: 2015.2

Using NetSuite, services firms can run their businesses on a single, unified platform. NetSuite ERP is a software-as-a-service-based business management system that includes accounting and financial management, inventory and supply chain order management, shipping and fulfillment, revenue recognition management, financial planning, human capital management, recurring revenue management, and financial analytics and reporting. NetSuite is built around a single customer record, so sales, support, accounting, shipping, and billing all use the same information for every interaction.

Vendor: Oracle

Product: Oracle ERP Cloud

Version: Release 11

Oracle ERP Cloud supports robust business and financial operational requirements—including financials, procurement, and project portfolio management—and is designed to provide modern functionality and infrastructure for increased productivity, lower costs, and improved controls. Regardless of company size, previous on-premises experience, and geographical locations, companies can use modern best practices for cloud with infrastructure and applications designed from the ground-up, incorporating security, integration, personalization, completeness derived from standards, globalization, business insight, and a full complement of digital capabilities. For customers needing modular solutions, Oracle's open architecture and multiple operating system options provide benefits from its products in every layer of the stack.

Vendor: Oracle

Product: Oracle JD Edwards EnterpriseOne

Version: Release 9.2

Oracle's JD Edwards EnterpriseOne is an integrated applications suite of comprehensive ERP software that combines business value, standards-based technology, and deep industry experience into a business solution with a low total cost of ownership. EnterpriseOne is the first ERP solution to run all applications on Apple iPad. JD Edwards also delivers mobile applications. It is suited for organizations that manufacture, construct, distribute, service, or manage products or physical assets.

Vendor: Ramco Systems

Product: Ramco Services Resource Planning (SRP)

Version: RES 5.2 CU 18

Ramco is a fast-growing enterprise software player, providing multi-tenanted cloud and mobile-based enterprise software in the areas including HCM and global payroll, and ERP. Part of the Ramco Group, Ramco Systems focuses on innovation and culture to differentiate itself in the marketplace. Ramco SRP is tailor-made for the services industry, aiming to help organizations become more profitable by leveraging the increasing value of human assets achieved through a more skilled, more billable workforce. It addresses the end-to-end needs of the services lifecycle, from lead management, up until contract management, project execution, rate card management, resource management, timesheeting, and invoicing.

Vendor: Sage

Product: Sage X3

Version: 9

From small start-ups to larger organizations, Sage software solutions are designed to help companies manage their business processes. Sage X3 was designed to give companies a simpler, faster, and more flexible business management solution. It aims to be simpler to use and cost-effective, with self-service, fast adoption, and minimal software management. Sage X3's multitier, service-oriented architecture (SOA) and Web-native design can help businesses reduce IT infrastructure costs and expand business opportunities.

Vendor: SAP

Product: SAP Business One

Version: 9.2

SAP provides business software applications and services to companies of all sizes in more than 25 industries. Today, more than 89,000 companies in over 120 countries run SAP software. SAP Business One was designed to help companies gain greater control over their SME or subsidiary, and is business management software designed to grow with the company that implements it. This single solution streamlines key business processes, from accounting and CRM to supply chain management and purchasing.

Vendor: Unit4

Product: Unit4 Business World

Version: Milestone 5

With pre-defined templates based on industry best practices, Unit4 customers can reduce ERP implementation time by up to 60 percent. Customers could benefit from rapid time to value while meeting specific industry challenges. The unique roles and business processes of services firms are supported in the Unit4 PSA solution. The PSA solution unifies ERP, PSA, and HCM, aiming to help services businesses secure project profitability, optimize resource utilization, and shorten service to cash flow in order to achieve revenue and margin targets.

Vendor: Zavanti

Product: Zavanti ERP

Version: 11

Zavanti ERP provides a full lifecycle ERP for project-based businesses, from project feasibility, budgeting, quantity take off, estimating, job costing, sub-contract management, HR and payroll, customer relationship management, plus all the standard financials modules. Zavanti ERP operates from a single database, allowing real-time project control and analysis. Users can manage multiple projects and companies from this database with ease, including the complexities of intercompany transactions and reporting. Zavanti ERP could be ideal for property developers, property owners and managers, construction, engineering, and other project-based companies.

TEC Resources

Articles

[3-Step Guide to ERP for Small Businesses](#)

[More than “Talent”: Exploring Talent Management and Workforce Management as a Continuum](#)

[The Makings of a Great ERP User Experience](#)

Software Industry Notes

Deltek: [Deltek 3.0 Takes Shape—Software Crafted with Project-centric Organizations Firmly in Mind](#)

FinancialForce: [FinancialForce ERP Unifies Cloud PSA, CRM, SCM, and HCM Software for Service-centric Organizations](#)

Infor: [Infor—Putting Innovation at the Center of Business](#)

Microsoft: [Microsoft Dynamics AX at Microsoft Convergence 2014](#)

NetSuite: [NetSuite Cloud ERP Software Gaining Traction with Larger Enterprises](#)

Oracle: [JD Edwards ERP Products Thriving Under Oracle](#)

Unit4: [Unit4 Launches Self-driving ERP Software for Project-based Businesses](#)

TEC Software Reviews

[Adeaca's Advanced Projects for Microsoft Dynamics AX](#)

[NetSuite ERP for Services](#)

[Zavanti ERP](#)

Related White Papers

[Monetizing Services in the New Hyperconnected World: Shifting Business Models from Products to Services](#)

[Professional Services Business Process Alignment](#)

[The SaaS ERP Applications Landscape](#)

[Top 10 Reasons to Buy a New ERP Now](#)

ERP for Services Software Evaluation Tools

Request for Proposal (RFP) Templates

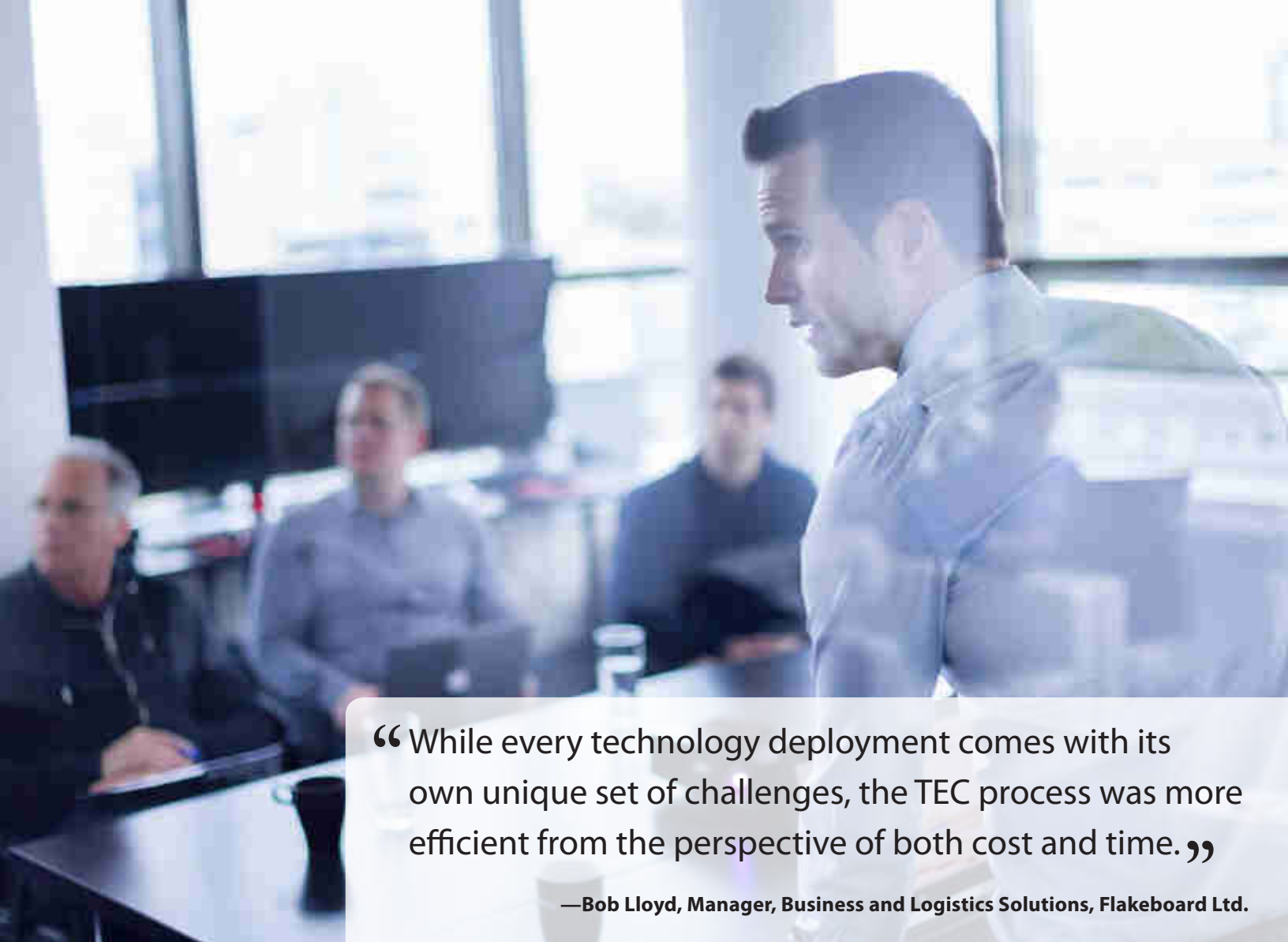
[Get detailed, customizable enterprise software feature lists for your ERP for services software evaluation.](#)

Software Evaluation Reports

[Get side-by-side comparisons of ERP for services enterprise software solutions.](#)

In-depth Software Evaluation

Use TEC's online software evaluation system, TEC Advisor, to see how ERP for services software solutions address your company's unique business requirements. [Start your online evaluation now.](#)



“While every technology deployment comes with its own unique set of challenges, the TEC process was more efficient from the perspective of both cost and time.”

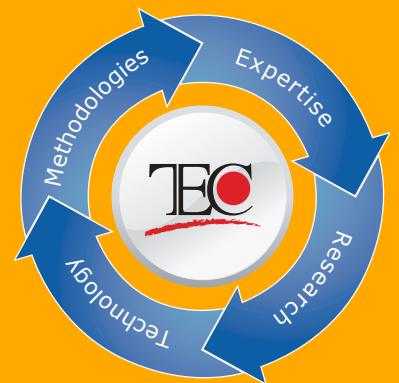
—Bob Lloyd, Manager, Business and Logistics Solutions, Flakeboard Ltd.

TEC's Enterprise Software Selection Services

Technology Evaluation Centers (TEC) is the impartial advocate for the enterprise software purchaser. TEC helps companies like yours choose the enterprise software solutions that best meet their unique business requirements. Our selection services can help ensure the success of your next software selection project—quickly, impartially, and cost-effectively.

TEC's approach combines comprehensive research, industry-leading decision support technology, a proven selection methodology, and the expertise of our analysts. We can help you

- bring objectivity and transparency to the selection process,
- choose the solution that best satisfies your specific business requirements,
- reduce the cost, risk, and duration of your selection project, and
- offer rational financial justifications, and provide a clear audit trail.



selectionservices@tec-centers.com
www.technologyevaluation.com

TEC Helps Financial Services Holding Company Select Best-fit Integrated ERP System in Only 6 Months

Company:

- Davidson Companies is a US financial services holding company offering a breadth of integrated brokerage, capital markets, money management, trust, and wealth management services.

Geography:

- Headquartered in Great Falls, Montana (USA)
- Offices in 24 states, with the majority in the West and Midwest

Markets Served:

- Davidson Companies provides financial services, including banking, investment, and brokerage, to a wide range of clients, from individuals to businesses and public-sector organizations.

Software Requirements:

- Replace inefficient system of multiple, redundant applications with several best-of-breed solutions or a new, fully integrated enterprise resource planning (ERP) system
- Functionality to support administrative and reporting capabilities—including financials, human resources (HR), compensation management, and business intelligence (BI)—across five business units
- A robust back-office infrastructure to facilitate administrative functions, eliminate laborious workarounds, and ensure timely financial reporting

Users:

- At the time of the software selection project, there were approximately 200 users in five business units (including 15 users from accounting, 4 from HR, and 3 from payroll)

Software Evaluation Project Needs:

- An experienced and impartial third party to support a selection team

Software Evaluation Expert:

- Technology Evaluation Centers (TEC), a firm that helps private- and public-sector organizations select the best enterprise software solutions for their unique business needs—quickly, impartially, and cost effectively

Benefits:

- TEC's comprehensive three-phase software selection methodology helped Davidson Companies quickly go from a clean slate to a signed contract in only 6 months.
- Davidson Companies leveraged TEC's experience of more than 300 delivered evaluation and selection projects and opted for an integrated ERP solution rather than three separate software systems. The TEC Advisor evaluation and selection application helped Davidson Companies compare vendor offerings and provide extensive supporting documentation to the executive team.

Time for a Better System

Founded as a small brokerage firm in 1935, Davidson Companies has matured into a leading financial services holding company composed of five subsidiaries. The flagship company, Davidson & Co., acquired several smaller financial companies in the last seven to eight years, and merged with Crowell, Weeden & Co. in 2014. Davidson & Co. specializes in brokerage services, investment banking for merger and acquisition advisory, capital raising, institutional sales and trading, and company research. Davidson Companies's smaller subsidiaries provide similarly specialized services:

- Davidson Trust Co. offers wealth management and trust services.
- Davidson Investment Advisors offers professional money management services.
- Davidson Fixed Income Management offers fixed-income services to mostly institutional clients.

In 2010, after several acquisitions, Davidson's back-office infrastructure was no longer keeping pace with the company's exponential growth. The company simply did not have the timely data it needed for effective bookkeeping and reporting. Each month, it would take Davidson two to three weeks to close its books.

"At the time, we were using a general ledger system that was incorporated into our brokerage clearing system," explains Karen Brandvold, Davidson's Vice President of Financial Analysis. "To produce financial reports, our staff had to take information from multiple sources and then manually input the collective data into spreadsheets."

Executives at the company could not ignore the requests of its recent hires, who were used to more efficient systems and were pushing for better resources. Davidson needed administrative capabilities that would provide more timely and effective information across all business units, which in turn would use this data for monthly financial reporting. The company also needed a solid HR system that could integrate with its current payroll software to optimize time and attendance tracking as well as commissions management.

In order to nurture its steady growth, Davidson executives knew they had to find a better software system.

Impartial Approach Critical to Davidson Decision

Davidson appointed Brandvold to spearhead the software project and lead a support team of 15 people. Her search for software packages tailored to the financial and brokerage industry led to her to Technology Evaluation Centers (TEC). TEC's website provides an online resource for thousands of IT articles and white papers. Its ample documentation on accounting, HR, and BI helped Brandvold get a clearer view of the vendor landscape, but the direction toward best-fit software for Davidson remained blurry. "Many of our accounting and HR staff hadn't had the opportunity to participate in a software selection project before," she recalls.

Davidson lacked the internal know-how to identify which vendors were best suited to meet its diverse requirements. Brandvold turned to the expertise of a TEC software selection consultant for help. After initial sessions, Brandvold quickly realized that TEC's structured and impartial approach to software selection could simplify the daunting task ahead.

"It was critical to have an objective, third party that could help identify our business requirements and then provide options for vendor solutions," says Brandvold. TEC's methodology combines a structured approach to requirements gathering, extensive data on vendor software functionality for thousands of enterprise solutions, a state-of-the-art online decision-making platform ([TEC Advisor, to compare ERP solutions](#), for example), and the experience of its industry analysts and decision experts.

Brandvold was eager to leverage TEC's expertise to jumpstart the project, but needed to ensure she was conducting the same due diligence as other brokerage firms. Although TEC had not supported a software selection project for a brokerage firm before, the software selection expert was confident of a successful outcome given its diverse cross-industry experience. "We guarantee best-fit software selection, *that is our industry*," says Michael Thaw, director of TEC Selection Services. "Our analysts and decision experts are proficient at matching processes across industries to build a technical and functional requirement set that both clients and vendors understand."

“Without TEC we would have proceeded to purchase up to three separate solutions. The project was off to a great start.”

-Karen Brandvold,
Vice President of Financial Analysis,
Davidson Companies

Reassured that TEC's methodology would help Davidson with an impartial software selection, Brandvold signed on for an extended software evaluation and selection project with TEC.

One Software System Is Better than Three

At the onset of the software selection project, Brandvold knew what Davidson needed: "everything." During the initial project orientation sessions, Brandvold communicated the need for a long list of systems to support Davidson's multi-faceted organizational structure and diverse client markets. Top priorities included a general ledger (GL) and financial reporting system, human resources information system (HRIS), time and attendance tracking, compensation management, budgeting, and forecasting functionality. Brandvold had come up with a long list of 21 vendors and was inclined to perform an evaluation for best-of-breed financials, HR, and BI systems.

When TEC project delivery manager Valentin Beranek reviewed Davidson's extensive project needs, he saw the opportunity to merge duplicate functionality into a single solution. He recommended that Davidson evaluate an ERP solution with integrated functionality, and compare it side-by-side with best-of-breed solutions. "Without TEC we would have proceeded to purchase up to three separate solutions. The project was off to a great start," says Brandvold.

TEC proceeded to build a customized functional and technical requirement set listing criteria for financials, HR, BI, and compensation management systems. It included more than 4,500 software features and functions—an overwhelming amount that was more than what Brandvold originally had in mind. However, it addressed critical software modules that Davidson would have overlooked otherwise. "The goal is to educate the client about functionality and how it affects their business," says Beranek. "We enhance the ability of our clients to make decisions—we don't make them on their behalf."

TEC's guidance helped Davidson complete the arduous task of requirements gathering in only one month. "Our project delivery manager provided us with invaluable insight and kept us on track," says Brandvold.

“Our project delivery manager provided us with invaluable insight and kept us on track.”

-Karen Brandvold,
Vice President of Financial Analysis,
Davidson Companies

Selecting the Winning Option in 6 Months

Once Davidson's requirements and priorities had been established, Beranek reviewed the completed requirement set carefully and proceeded to load the criteria into TEC Advisor. Because of the extensive vendor data that TEC accumulates from hundreds of software projects and ongoing [certification reports](#), TEC Advisor instantly generated a long list of best-of-breed and integrated software packages. Davidson was able to conduct a preliminary side-by-side comparison before sending off formal requests for information (RFIs).

Although best-of-breed packages showed considerable shortcomings in areas outside the company's niche market, Davidson did not want to miss out on functionality from tier-one vendors, and asked TEC to issue RFIs to 20 vendors in all. Thanks to the pre-populated data in TEC's online database, TEC was able to gather all the responses within one month—in spite of summer sluggishness. Beranek then loaded the completed RFIs into TEC Advisor for an in-depth software evaluation and gap analysis, which narrowed the list of solutions from 20 to just 4.

Davidson further narrowed the list to 3 solutions through web demonstrations from the two vendors that had scored the lowest in TEC Advisor. This allowed Davidson to achieve its target of just three on-site demonstrations. TEC helped the company develop demonstration scripts, as well as a homogeneous scoring system to eliminate all bias from the process. "The vendor demos were very helpful and eye-opening for many of our personnel who were unfamiliar with the existing in-house solutions," says Brandvold.

TEC compiled the vendor demonstration scores, along with reference checks and additional market data (corporate profiles, product development information, and implementations, as well as maintenance and support information) and loaded all the data into TEC Advisor for a final in-depth analysis.

In the end, the decision proved to be a simple one for Davidson. And it only took 6 months—from beginning to end—to make a rational, justifiable, and above all impartial software selection. "We would not have made our decision within our original time frame had it not been for the TEC services," says Brandvold.

Davidson's solid selection led to a smooth 6-month implementation process. The company launched its best-fit ERP solution in May 2011.

“We would not have made our decision within our original time frame had it not been for the TEC services.”

-Karen Brandvold,
Vice President of Financial Analysis,
Davidson Companies



CASEBOOK



AGILITY GROUP SHARPENS COMPETITIVE EDGE WITH IFS

Basing a company's processes on a common ERP solution provides not just a solid foundation for future growth; it was a direct necessity, according to Norwegian-based Agility Group. Apart from the competitive advantages that come with increased control, there are operational benefits such as a fifty percent reduction in time spent on reporting and a decrease in administration.

"In general terms, the most important thing we have achieved by implementing IFS Applications is that we can safely say to our customers that we are in complete control of the entire process." These are the words of Finn Rasmussen, Vice President Business Systems at Agility Group, and he should know. He has been involved from the beginning, when the ERP solution was first procured up until today when the Agility Group is reaping the benefits of its investment.

GROWTH AND STOCK EXCHANGE LISTING

In 2004, Agility Group faced a major challenge. An aggressive growth plan and listing on the stock exchange in the offing, which would see the consolidation of several operations, placed enormous demands on the group's future IT support. "The changes demanded entirely new levels of swift, reliable reporting of corporate information," said Rasmussen. "With these came the realization that we required a common set of ERP software if we were to succeed in getting a better overview of the company".

After an evaluation that took in 12 different ERP vendors Agility Group decided to opt for IFS Applications just before the end of 2005. The decisive factors were IFS' competence and experience in the industry and the fact that IFS has successfully delivered solutions to several companies that were similar to Agility Group.

CONCRETE GOALS FOR IT SUPPORT

Agility Group opted for the standard solutions in IFS Applications—and expectations in respect of the new ERP software were high. The company's goals were extremely concrete: the new business software from IFS should lead to savings by simplifying administration, and the enhanced control would make Agility Group better equipped to compete for bigger contracts.

ABOUT AGILITY GROUP

Agility Group is a full-service engineering, procurement and construction company targeting the global oil & gas and process industries. Situated at 10 different locations in Norway, as well as in Shanghai, China, it has about 1,100 employees and reported revenue of Nkr 1.5 billion in 2009.

"Using IFS Applications really gives us a competitive edge; partly because it means that our most critical processes are run in a common solution and partly because the ERP software in itself offers a great degree of agility."

Finn Rasmussen, Vice President
Business Systems at Agility Group



©Photo Agility Group

THREE-PHASE ROCKET

IFS Applications was implemented in three separate phases, all of which have now been rolled out into the organization: IFS Applications' components for project management, time & attendance, purchasing, material management, human resource management, and manufacturing.

"IFS Applications now supports Agility Group's two main business areas: engineering and manufacturing," says Rasmussen. "Our operational situation is very good, with very little downtime. Our users were somewhat skeptical to begin with, but today they can see that everything has changed for the better."

UNIFORM PROJECT MANAGEMENT

By standardizing and streamlining the company's processes, Agility Group has ensured that the data used as a foundation for making business-critical decisions is always reliable. The ERP software from IFS has also resulted in smoother administration processes.

Rasmussen again, "There's no doubt that we are working more efficiently, with increased control and considerable time-saving. For example, the time required for reporting has been halved, time that we are using to do other important tasks."

PROJECT MANAGEMENT—A COMPETITIVE ADVANTAGE

The various activities that Agility Group is involved in are run in project form, and all projects are now run via IFS Applications.

"We are seeing benefits in financial management in particular. We can retrieve information about our financial trends at corporate level, or even at individual level, such as liquidity related to a specific project," says Rasmussen.

Rasmussen believes that Agility Group is completely dependent on having an extensive suite of ERP software like IFS Applications if it is to win major customer contracts at all.

"Using IFS Applications really gives us a competitive edge; partly because it means that our most critical processes are run in a common solution and partly because the ERP software in itself offers a great degree of agility."

FULL UTILIZATION

Agility Group has put a turbulent year behind it, which included a financial crisis and changes in the ownership structure. Now, however, it's 'full steam ahead', with Agility Group looking to develop profitability even further with handheld devices for time & attendance reporting and material management.

"We achieved our goals. Now the entire Agility Group is using one and the same system. IFS Applications is supporting us on our journey as a company. And thanks to the agility of the solution, we get rapid access to the functionality we require as the company changes," Rasmussen concludes.

BENEFITS

- Better overview of details and macro-level provides competitive advantages
- Time used for reporting halved
- Enhanced resource management and optimization
- Uniform, reliable data for better decision
- Agile ERP software that facilitates future change processes



"There's no doubt that we are working more efficiently, with increased control and considerable time-saving. For example, the time required for reporting has been halved, time that we are using to do other important tasks."

Finn Rasmussen, Vice President
Business Systems at Agility Group





Specializing in geotechnical construction, Keller Foundations is the North American subsidiary of U.K.-based Keller Group PLC. Keller Foundations includes Hayward Baker, Case Foundation Company, McKinney Drilling Company, Anderson Drilling, HJ Foundation Company, Keller Canada, and Suncoast Post-Tension.

Results

- Enforcement of standard operating procedures
- Improve business insight and reporting
- Streamline business processes
- Achieve economies of scale on subsidiary rollouts
- Enable ongoing growth

Industry

Construction

Country or Region

United States and Canada

Customer Size

Around 4,500 employees

Number of Users

1,000 employees

Connect with Keller Foundations



www.kellerfoundations.com

Construction Company Supports End-to-End Processes, Growth with ERP

"We saw Microsoft Dynamics AX as the solution that would take us to the next level as a business. It provided the range of modules we needed, so we wouldn't have to keep building point solutions, while also offering the flexibility to meet our industry requirements."

Brian Seymour, CIO, Keller Foundations

From tunneling support to ground water control, the services of geotechnical construction companies like Keller Foundations lay the critical groundwork for major construction projects worldwide.

Now comprising six companies and generating around U.S.\$1 billion a year in revenue, Keller Foundations —just 14 years back —comprised only two companies and generated around \$120 million a year in revenue.

When it was a much smaller company with fewer business entities, Keller Foundations could rely on its construction accounting solution, CMS from Computer Guidance Corporation. But with much of its growth coming through acquisition, the company soon found itself with multiple accounting packages and reporting systems, requiring duplication of effort and tedious consolidation and reconciliation to analyze finances at the corporate level.

Adding to this complexity, Keller Foundations had developed a number of point solutions over the years to tackle various line-of-business needs, such as human resources (HR), enterprise resource planning (ERP), and customer relationship management (CRM), which could not be handled by its existing system.

"Following acquisitions and assimilations, we were at a point where we could not, with our existing technology, support our current organization or any future growth," says Brian Seymour, CIO for Keller Foundations. "Converting one of our newest acquisitions to the system was such a challenge that we decided not to convert the next acquisition. We were heading in a direction where we were going to end up with a number of financial packages."

At this critical point, Seymour notes, "We brought in outside consulting to review our existing IT infrastructure, and discovered that we needed to very seriously begin looking at deploying an ERP system to support our



Brian Seymour

CIO

As assistant controller and then controller of Hayward Baker, a part of Keller Group, Brian Seymour helped lead the implementation of the company's construction accounting system.

Fourteen years later, as CIO of Keller Foundations, Seymour led the deployment of Microsoft Dynamics AX at the company. With the initial deployment taking only six months, Microsoft Dynamics AX now spans two of the company's largest subsidiaries, comprising over 60% of the total operation.

Connect with Brian Seymour



growing organization. It was no longer about providing a corporate accounting package, but providing tools for all the operations, which had been neglected for quite some time."

Choosing Microsoft Dynamics AX

Keller Foundations began to evaluate leading construction-oriented ERP packages, including those from CMiC, Viewpoint Construction, and Penta. The company also looked at the latest version of CMS. These smaller, construction-focused packages posed a problem, however. Explains Seymour, "Although we certainly had to fulfill the requirements of a construction business, our strategic goals were about meeting the needs of a complex enterprise, while providing a catalyst for organizational change through standard operating procedures enabled and enforced by the ERP."

Seymour also notes that as a significant portion of the Keller Group, he had concerns with putting a billion-dollar-a-year business in the hands of companies that were significantly smaller in comparison. Many of the applications that were strictly construction-focused offered few options to extend the functionality of the solution inherently. At the same time, Keller Foundations wanted to provide tools for all of its operations, not just accounting.

To support its myriad business needs, Keller Foundations then looked at Microsoft Dynamics AX on the suggestion of its parent company, which had reported success with other Microsoft Dynamics products in the UK and Australia. "We saw Microsoft Dynamics AX as the solution that would take us to the next level as a business," says Seymour. "It provided the range of modules we needed, so we wouldn't have to keep building point solutions, while also offering the flexibility to meet our industry requirements."

Deploying Microsoft Dynamics AX

Working with its Microsoft partner, and after developing core functional requirements across all areas and business units, Keller Foundations underwent an accelerated, six-month deployment of Microsoft Dynamics AX. The company went live with all aspects of the system at the start of 2011, and continued to tailor the system over the course of the following year to refine functions and improve efficiencies.

Supporting Accounting and Operations

With Microsoft Dynamics AX in place, Keller Foundations now supports the following key business functions, among others:

- **Project management and financial reporting.** Keller Foundations developed a project management dashboard that enables project managers to view all their projects and project costs, and then drill down into those costs to the individual invoice, or to the laborer and all their hours, or even to the equipment involved. Drawing on this information, the company can also perform weekly reporting on percent completion based on units of production. With all information

"From a purely IT perspective, it's about a week of work to configure a new business in Microsoft Dynamics. Then the business users undergo training, and they're able to start cutting checks in week one."

Brian Seymour, CIO, Keller
Foundations

in one system, the company can report on finances with ease, whether for internal use or for tax purposes or according to U.S. or U.K. Generally Accepted Accounting Principles (GAAP).

- **HR and payroll.** Bringing its HR functions into Microsoft Dynamics AX from disparate applications reduced redundant data entry and the inherent possibility of errors. Keller also tailored the payroll capabilities to meet the requirements of each state jurisdiction as well as to account for the differences in rules for union and non-union employees. These changes alone will save Keller significant dollars by ensuring the accuracy of payments that were previously made through manual calculations, and by avoiding fines that resulted from mispayments to required entities.
- **CRM.** Keller Foundations rebuilt their existing internally developed CRM capabilities by using the CRM module in Microsoft Dynamics AX and will soon be using it to manage marketing campaigns. This not only ensures the accuracy of data but also allows staff to work in one system throughout all phases of a project life cycle.
- **Time-keeping.** Keller Foundations staff in the field record their time in Microsoft Excel spreadsheets. When they connect to the Internet, time-keeping information is uploaded to Microsoft Dynamics AX through Atlas, from Globe Software, which enables integration between Microsoft Dynamics AX and Microsoft Office, eliminating duplicate data entry.
- **Resource handling** Microsoft Dynamics AX currently tracks as many as 18,000 pieces of equipment, which can now be paid for by associating them directly to projects. The integrated resource management module ensures that highly specialized equipment can be used efficiently across all companies.
- **Purchasing.** When project managers kick off a new project and assign items to that project, they now initiate a workflow that sends the request for those items on to the next person for approval based on a defined hierarchy and approval limits. After they are approved, items are posted to inventory as received, and costs are recognized as used on the project.

Benefits

With Microsoft Dynamics AX, Keller Foundations has the broad capabilities it needs to support a multi-company enterprise, while still having the specificity of a solution tailored to its industry. Since standardizing on Microsoft Dynamics AX, the company has improved business insight and significantly streamlined reporting. Keller Foundations has also used its ERP deployment as an opportunity to streamline a range of business processes, and has even achieved economies of scale in the deployment process itself as it brings more of its subsidiaries into the system and continues to grow.

Improve Business Insight and Reporting

Having all financial and operational data in Microsoft Dynamics AX has led to significant improvements in business visibility while greatly easing reporting. Looking back on the deployment, Seymour says, "Our interactive project recap launched directly from a project management dashboard was the capstone of the project. Before Microsoft Dynamics AX, project information was just numbers on a report. Now those numbers mean something. We can see in a great deal of detail what makes up a number, and now there's no excuse for not having it."

Streamline End-to-End Business Processes

By supporting its entire operation with a single solution, Keller Foundations has dramatically cut the need to rekey information while standardizing processes companywide. This has led to numerous improvements in accounting and corporate finance, as well as big changes in payroll, resource handling, HR, and all the other business functions the handled by the system.

The ability to continually tailor and configure Microsoft Dynamics AX has also boosted productivity. Says Seymour, "We can go as far as to make required fields that people forget to fill in turn red. And right there, that's the reason and power behind Microsoft Dynamics AX. Even a small change that saves 400 people 30 seconds a day has a major impact on the business."

Achieve Economies of Scale, Enable Growth

As Keller Foundations continues to bring its subsidiaries onto Microsoft Dynamics AX, it has found significant economies of scale in deployment times. Although the initial deployment took six months to complete and then a year to tailor, the deployment time for subsequent companies has been considerably shorter after individual business units gathered their business requirements. Says Seymour, "From a purely IT perspective, it's about a week of work to configure a new business in Microsoft Dynamics. After the business users undergo training, they're able to start cutting checks in week one."

Now looking to future growth, Seymour adds, "We really want Keller Foundations to be an efficient operation that is supported for the long term. Microsoft Dynamics AX gives us the ability to scale out, support our operations, and instill the discipline we need to do that."

Next Steps

- [Connect with Microsoft Dynamics](#)
- [Become a Dynamic Business](#)
- [Read about other global construction companies that have grown and thrived on Microsoft Dynamics AX](#)

For more information about Microsoft Dynamics, go to: www.microsoft.com/dynamics

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The Dynamic E&C Firm: Designed and Built for Change

Microsoft in Engineering & Construction



Built for change

Buildings evolve with occupants' intended uses, within physical and economic constraints. When designed to accommodate "upgrades" in various component elements, buildings can achieve longer and more productive lifespans.* By analogy, this principle applies also to the design of organizations and the people, process, technology and culture elements that comprise them – elements that accept change at varying rates and thereby constrain overall change. Thus, sustained growth depends on flexibility, agility and adaptation to changing business objectives at many levels or layers within an organization.†

With owners demanding faster project completion and burdening providers with more risk, Engineering and Construction (E&C) firms have responded with innovations in prefabrication, building information modeling (BIM), integrated project delivery (IPD) and design-build (D-B) practices. However, each innovation takes time to take root as "front office" professionals specify needs for translation into new operational processes that must then be embedded into "back-office" administrative systems – all subject to acceptance by prevailing firm culture. So, change takes at least as long as the slowest or least flexible participant in the chain.

How often have great ideas died slow deaths waiting for operations and administration to accommodate enabling process or transactional changes? How often has inflexible technology been the root cause? Far too often. This is why more E&C firms are upgrading or replacing outmoded business systems to improve end-to-end process alignment, control and risk management across front- and back-office activities.

Microsoft embraces the proposition that technologies should enable business process flexibility, support organizational change, and foster rapid adaptation to evolving operational and market needs. Indeed, this is a guiding principle fueling the Microsoft approach to modern business solutions and our vision for the Dynamic E&C Firm, designed and built for change.

Proactive and forward-looking technology can connect people to their work, bringing forward insights that enable better decisions and guiding processes that optimize results. Agile software empowers adaptation to changing economic and market conditions. It supports a firm that can anticipate rather than react to rapid change, and supports the optimal alignment of people, assets, systems, and data. Microsoft Dynamics delivers a system of engagement that helps firms stay current with leading edge practices and value-chain integration in the E&C industry.

* Frank Duffy articulated and Stewart Brand further developed a concept called "shearing layers," the idea that buildings may be designed to anticipate and tolerate change at various time horizons for component elements. For more, see Stewart Brand's book *How Buildings Learn: What Happens After They're Built* (Penguin Books, 1995).

† In the world of information technology, IBM as well as research and advisory firm Gartner adapted shearing layers to outline principles for design of software and systems that adapt with the needs of businesses.

Shifting industry topology

Distinguishing between engineering and construction firms used to be a simple question of whether the firm assumes responsibility for the physical build-out of structures. Engineering firms invest work-in-process professional hours on projects but do not perform project buyout with subcontractors or tie up capital in materials procurement. Construction firms assume responsibility for the latter, turning designs into physical structures and incurring both materials carrying and labor-related work-in-process costs.

With rapid expansion of D-B practices, general contractors (GC) have acquired or contracted design capabilities to move into upstream phases, offering Owners a single contract and “single throat to choke.” Meanwhile, engineering firms that were already providing estimation and procurement services are pushing further into Construction Management (CM) to take on end-to-end project oversight. Contiguous to the E&C space, many GCs are also well down the path of developing downstream facilities maintenance and management services to build stable annuity revenue flows. As a result, demarcations between E&C, Facilities Management and Real Estate services providers are beginning to blur.

This softening of traditional boundaries is perhaps an inevitable result of vertical integration for economies of scale and entry into adjacent markets for economies of scope. However, owners are playing a very active role in fostering change by testing different approaches to bundling of outsourced services for improved efficiencies and risk management in the end-to-end building lifecycle. Market and competitive forces have come together in the pressure-cooker economic environment of recent years to break down boundaries and accelerate value-chain integration. Survival favors adaptable organizations that can flex to new opportunities, manage risk and align people, process, technology and culture.

Tactical fundamentals

Macro shifts in the industry inform business direction and executive decision-making, but they are not highly actionable. The need for process flexibility and ability only becomes real at tactical operational levels where E&C firms share a common set of persistent business challenges:

Business Development: Not all revenue is good revenue; the right clients and projects yield better, more sustainable business results; and the best deals are those where you help the client shape the project and RFP. But ambitious sellers and dedicated problem solvers want to respond to every new opportunity and interesting client challenge, so it takes sophisticated cultural alchemy to channel all of that individual initiative into productive activities.

To generate profitable growth, firm leaders need to establish clear priorities and risk controls, aligning opportunity management, review and escalation protocols. And once processes are in place, leaders need to equip marketers and seller-doers with the tools necessary to determine who-knows-whom and who-knows-what to assemble the right pursuit teams rapidly, influence project formulation, create outstanding execution plans,



and deliver compelling proposals that distinguish the firm from the competition.

"We had no real visibility on our sales pipeline and we were just relying on the data that was passed up in monthly reports."

**Les Cate, Business Manager
Norfolk Electrical Communications**

Documents & Resources: Project proposals, contracts, designs, transmittals, submittals, subcontractor certifications, change orders and so many more digital and hardcopy documents flow through E&C firms every day. Unfortunately, jurisdiction-specific forms, non-standard document formats and owner- or contractor-specified technology requirements impede that flow of project-related content. Project progress regularly founders on the shoals of document completion and transmittal challenges.

"Even though we are in the construction business, we are also in the information management business. The longer it takes to find and share documents, the longer it takes to finish projects, so creating a top-notch ECM [enterprise content management] system became a mission-critical objective for us."

**Patrick Miller, Vice President –
Director of Application Development
JE Dunn Construction Company**

More critically, project viability hinges on having the right professionals, subcontractors and equipment to get the job done. Challenges in capacity planning and tactical resource scheduling therefore have the most visible day-to-day impact on an E&C firm's ability to execute. Translating pipeline and backlog into expected design skill and trade labor needs as well as associated recruiting and subcontracting plans over the next six to twelve months requires experienced human

resources or practice management professionals with integrated insight into sales and operations.

Projects & Job Sites: On-time, on-budget and profitable delivery demands the right client engagement, project scope, plan, leadership, resources, execution, oversight and more. So much has to be done right, and so little need go wrong for failure along any critical vector.

E&C firm leadership recognize that consistent application of proven methodology and best practice is an important factor in getting projects right at every step. In practice, however, many architects feel a creative calling, engineers seek technical improvement on past results, and tradesmen optimize for throughput. Moreover, even the best-laid plans and standard operating procedures encounter project- and context-specific realities at the job-site that require flexibility and adaptation rather than mindless adherence to protocol.

Pursuit of excellence in project execution necessarily becomes a balancing act between mindful application of repeatable practices and intelligent innovation in response to local feedback. Which places individual professionals, intermediate managers and the project manager solidly in charge of delivering results. Leadership's responsibility then is to provide the tools, rules and exception paths to support efficient and effective project execution at every level in the organization.

"To gauge and manage our performance, we need to be able to get project details recorded and distributed to our project managers as soon as possible. Without this vigilance, even a small project that veers off track can become a big problem for our profitability."

**Jim McAleer, Controller
EwingCole**

Financial Controls: Project cost, time, quality, safety, risk and other controls are de rigueur and broadly accepted methods like Earned Value Management (EVM) offer quantitative foundations for monitoring and oversight. Easy availability and transparency of measures and targets help push decision-making closer to where execution takes place, accelerating project delivery. Unfortunately, discipline- and role-based decisions still tend to happen in siloes that mask interdependencies and cascading effects. So for both technical and financial decisions, empowerment requires guardrails or collaborative methods like IPD to bubble decisions up to the right logical level to avoid unintended consequences.

At the business group and firm-wide level, challenging economic times and owner buying-power in a competitive market have left many E&C firms holding portfolios of projects that were won at higher than desired risk levels. Whether looking at aggregate utilization, realization and staff retention rates across an engineering practice or broad liquidity, margin and committed cost ratios in a construction company, CFOs and line leaders need to know which levers to pull to find solid

ground. For many firms, the next few years will be a time to build a backlog of higher margin and lower risk deals at various durations that bring Key Performance Indicators (KPIs) back into the green and balance an uneven scorecard.

“Our project managers need up-to-date information on labor and materials costs so that they can preserve margins on our projects... We wanted to standardize the procedures and reports used in our 15 affiliate companies.”

John Jordan, CFO
The Truland Group

These combined challenges—capturing the right projects, coordinating content and resources, balancing repeatability with adaptation in project execution, and stabilizing overall business economics—are practical areas where E&C firms can invest in designing and building for process flexibility and in laying a foundation for improved organizational agility and risk management.

Strategic concerns

As E&C firms successfully address core operational challenges, leadership attention quickly shifts to broader market and strategic concerns. While issues vary by region and offering portfolio, four transformational trends will shape the competitive survival and success of firms:

Client Expansion: Industrial and manufacturing enterprises are becoming increasingly multimarket, multiregional, and global as competition drives a blend of specialization and economy of scale. Where process standardization is furthered by consistency in structural design, as for example in petroleum processing or chip fabrication, clients demand consistent design and CM expertise from global engineering firms and, where practical,



global GCs operating across far-flung jobsites. These clients value provider alignment to their energy or high-tech manufacturing needs on a global scale.

By contrast, commercial and public sector entities seek efficiencies by working repeatedly with a short-list of E&C providers that have deeply local

design, construction, manufacturer and code compliance expertise. As these owners and operators consider new projects, they value the predictability that comes from working with increasingly multi- and full-service local providers.

Whether a global, regional or local operator, E&C firms often need to decide if they should follow a major client into a new market. Staying close to the firm's best clients helps ensure access to future projects and reduces competition at bid or tender. If a firm decides not to bid on a key client project, this may give a strong player in a contiguous market a beachhead for relationship development and competitive entry into the firm's core market. But expanding operations to serve a client in a contiguous geographic market or in a new class of project can be a huge drain on resources with an uncertain return. Whether growing through partnership, acquisition or organic expansion, firm leadership need to balance near-term liquidity concerns against longer-term competency-development opportunities.

This client-driven and strategic decision-making challenge is fueling adoption of business intelligence tools that provide a 360-degree view into clients and project portfolios. And these insights are in turn setting the priorities and risk management practices that guide business development efforts toward sustainable results for the firm.

"We ended up having all this knowledge sitting just in senior managers' heads. Besides the inherent inaccessibility, there was always the risk of them walking out the door and taking all the knowledge with them."

Jenni Campbell
Business Systems Manager
Decmil

Changing Workforce: While market-facing leaders wrestle with demand-side challenges, delivery-oriented leaders are concerned with supply-side trends, where a changing workforce adds complexity to the growth equation. Difficult economic conditions notwithstanding, a generation of skilled engineers and construction professionals are retiring or will soon retire in many developed economies. In industrializing and emerging economies where large infrastructure and development projects are underway and more are expected, educational systems cannot deliver trained talent quickly enough to keep up with demand. And even then, no level of classroom learning can fill the need for people with years of on-the-job experience.

"We are seeing growth all over the world and it's difficult to transfer knowledge to all these locations, especially remote locations... The cost of fixing poor decisions is extremely high in our business."

Joar Handeland, CIO
Aker Solutions

Engineering firms are capitalizing on increasingly digital generations of professionals to make expertise available virtually around the world, improving global utilization of a limited talent pool. However, even the most networked organization still faces cultural diversity and inclusion challenges, and most engineers need to be feet-on-the-ground at jobsites at some point. Meanwhile, construction companies face intensely local challenges as they contend with generational divides in trade and labor pools, and rapid technological changes in building techniques that can quickly obsolesce established practice. This pace of change tends to benefit next-generation talent that is motivated to learn and apply new methods, but it also fosters mobility and talent churn as individuals jump between employers in rapidly growing markets.

Engineering firms, GCs and subcontractors alike all face this human capital challenge. And the combination of demand-side “client expansion” and supply-side workforce demographics is forcing E&C firm leadership to find new ways to recruit, assign, develop and retain expertise.

Collaborative Execution: At a tactical project level, technology-driven improvements in joint access to digital design documents (e.g., BIM and IPD), real-time tracking of building materials in transit to the jobsite, and other information-sharing capabilities are enabling more dynamic project teams that cut-across architect, engineer, builder, subcontractor and owner boundaries. With growth in D-B practices, projects are seeing increasing overlap between design, detailing, estimation and buyout activities, which serves to compress time to project completion and asset utilization.

“In competitive bid situations, fees are always under pressure, so we needed to find a way to achieve a new level of remote collaboration that would also be cost-effective... What was different with the [project] was enabling both the Zeidler and Snøhetta teams to work on the same BIM model at the same time, as if they were in the same office.”

Ian Fairlie, Network Architect
Zeidler Partnership Architects

The challenge for E&C firm leaders is that this reduction in time between initial outlay and first economic return – a measure called “time to value” (TtV) in the technology industry – is of growing importance to owners. Just as E&C firms hate to see capital tied up in unbilled Work-in-Process (WIP), owners want to see accelerated returns on invested capital and will differentially reward those firms that can commit to shorter project timelines. This growing emphasis on speed may simply reflect the business realities of most industries

today, but the trend is certain to force evolution in the way that all construction industry participants operate.

Agile Adaptation: E&C firms that used to plan for and execute change on their own timetable find that today’s complex market dynamics deliver many disruptive surprises. Indeed, deep project planning competencies honed in capital projects can get in the way of the rapid adaptation required to compete and succeed as a business.

Recognizing this, many firm leaders are asking this question: how can we identify problems early and act quickly, delivering operational visibility and decision-making authority to front-line managers while implementing policies and controls that can evolve rapidly with market demand and changes in the available talent pool? In short, how can we create an agile and resilient organization that flexes to its environment?

The right executive vision and commitment to cultivate aligned cultural norms comes first. However, at operational and administrative levels, there must also be the right supporting processes and enabling systems – systems designed and built for change. This is where Microsoft and our solutions for the Dynamic E&C Firm can help firm leadership build for the future.

“Although we certainly had to fulfill the requirements of a construction business, our strategic goals were about meeting the needs of a complex enterprise, while providing a catalyst for organizational change through standard operating procedures enabled and enforced by the ERP.”

Brian Seymour, CIO
Keller Foundations

Building the Dynamic E&C Firm

Microsoft is uniquely positioned to help E&C firms transform into dynamic organizations that are market responsive, collaborative, and able to realize the full potential of their people. To ensure that we build for the future, Microsoft focuses on delivering innovative, proactive, modern business solutions that offer flexibility and interoperability. Firms can deploy individual elements to meet specific needs or a fully integrated business suite, and can add and subtract functionality to meet tomorrow's challenges. Taken in sum, Microsoft business solutions deliver on the promise of enabling people to do their best work whether in the office or on the job site and whether in project delivery, functional or administrative roles.

Freeing individuals to drive results

At the heart of every organization are the people who make things happen. People garner insight from business applications to drive decisions that advance organizational objectives. They manage relationships internally and externally to drive relevant actions forward. The most successful firms are powered by individuals who are contributing fully, able to make a difference, and committed to their organization's success. Microsoft can help individuals and organizations realize their full potential and drive significant impact by offering an end-to-end business solution that is flexible and easy to use.

Microsoft is deeply committed to helping professionals and staff perform at their best and achieve greater job satisfaction through improved ability to collaborate with colleagues and productively serve clients. For this reason, we emphasize easy-to-use tools designed to work the way people work. Our tools are built to work together seamlessly, supporting and linking key levers of the business and enhancing both individual performance and firm-wide operations.

Capitalize on talent and catalyze innovation

Today, our E&C industry solutions can help firms capitalize on all available talent by enabling job scheduling and balanced resource utilization across time zones

and business units. For example, we give human resource directors the ability to maintain central profiles of employees and subcontractors that can be shared across subsidiaries and locations to make it easier to identify human capital assets that may be tapped to deliver services. With powerful competency and availability-based search capabilities, practice managers and schedulers can rapidly find and assign the right person for the

right job at the right time and place. And at an even deeper level, resources can be hard-booked or soft-booked to jobs or proposals-in-process to manage the human capital supply chain that is at the heart of every E&C operation.

We support increasingly virtual and diverse project teams with rich planning and collaboration environments that help reduce administrative overhead and focus the project team on the job at hand, catalyzing creativity and innovation. And we help firms harness these capabilities to cultivate unique client experiences and evolve repeatable yet highly distinctive and client-responsive service experiences across distributed teams. So project managers can focus on client relationships while easily delivering job estimates based on vetted and adjusted templates for common design and build requests. Project managers, in turn, can focus on team dynamics while taking advantage of work-breakdown structure templates for project planning, sophisticated budgeting and cost controls, time and expense entry and approval workflows, and

Cultivate unique client experiences

project analytics. And team members can spend less time onboarding and more time getting to know each job and executing on tasks.

Compress
time to insight
and action

We then embed increasingly industry-specific information and performance measures into our solutions to help compress time to insight and action. By putting richly

contextual and role-specific information at their fingertips, we help individuals ranging from office-based to job-site tradesmen and from project accountants to compensation analysts work smarter, streamlining and accelerating project execution and firm operations. Financial leaders in particular can build on integrated project management and accounting, sales and marketing, and human capital management functionality to obtain a complete and holistic view of their business. They can streamline reporting and improve accountability across the organization while ensuring compliance with risk management practices through consistent business processes and policies across all locations.

Importantly, Microsoft constantly strives to deliver reduced total cost of ownership for organizations that adopt our solutions. To this end, our solutions build on the business processes and technology investments that many firms already have in place—the everyday business practices and associated productivity tools like Microsoft Project, Excel, Outlook, SharePoint, and Windows that users are already familiar with. This reduces the time needed for training and change management through easy and intuitive user experiences that foster productivity, firm-wide adoption, and a faster return on investment.

The result is a portfolio of integrated-by-design solutions that equip and indeed free individuals to do their best work within an increasingly connected organization and wider ecosystem. With this holistic approach to business solutions, Microsoft can help E&C firms design and build for change and thereby elevate both individual and organizational performance.

Building blocks for the Dynamic E&C Firm

To execute on our vision, Microsoft presently focuses on five solution areas or logical sets of business capabilities that are core to how E&C firms operate and to how they may design and build for change:

Business Development: *Prioritize among project opportunities and make risk-appropriate pursuit decisions with consistent pipeline and proposal management processes.*

Our objective is one seamless end-to-end experience from lead generation to opportunity management to project scoping and initiation, including tactical management of proposals, contracts and change orders for projects already in execution. Like all others in our portfolio, this solution works directly with standard Microsoft authoring and collaboration tools to offer a familiar user experience that improves adoption and thus adherence to organizational processes and stage-gate

“Effectively tracking and managing key accounts and opportunities is a core success factor for our business development. Microsoft [Dynamics] CRM and the SharePoint integration support this goal. The system also organizes data so that there is clear ownership and accountability.”

**Thomas Doerr, Project Delivery
Director in Corporate Marketing and
Communications
CH2M HILL**

controls for risk management. Adoption drives pipeline data, which improves leverage of business development resources, backlog estimation, and forecasting of capacity requirements and revenue results. Adoption also improves firm-wide insight into who-knows-whom and who-knows-what, making it easier to out-network the competition and grow next-level client relationships. In short, a more cohesive approach to business development.

Document Management & Collaboration: *Streamline project execution across distributed internal and external teams with secure role-based content management and real-time communications.*

Taking the familiar client- and project-centric collaboration portal as the foundation, this solution improves team coordination and communication around proposal, contract, project plan, design document, building model, transmittals and other materials – governed as appropriate by version control, change audit history, and formal records management. In

"I'm using a tablet device with Lync paired to a Bluetooth keyboard on a high-speed train in England while talking to someone in Pune, India, 5,000 miles away. These collaboration tools are fantastic!"

David Nietz, CIO
MWH

"All sites share the same look, feel, and navigation structure, so owners, architects, and subcontractors involved in more than one project will always know exactly where to find what they need."

**Patrick Miller, Vice President –
Director of Application Development**
JE Dunn Construction Company

keeping with IPD objectives, the solution enables extranet and cloud-based exchanges with subcontractors, joint-venture partners, owners and facility operators. It also enables real-time communication with instant messaging, screen sharing, voice-over-IP calling and video conferencing capabilities accessed contextually within a given project team site or a specific document undergoing concurrent edits by multiple subject matter experts.

People & Equipment: *Optimize utilization of all available assets with firm-wide tools and processes for identification and assignment of resources.*

Value creation starts with people. The right person assigned to the right project at the right time. Of course, the right person also needs the right tools and equipment to arrive at the job site in time for the appointed task. This solution addresses the recruit-to-retire lifecycle for employees as well as tracking of education, certification, expertise, project experience and other factors that inform best-fit project assignment.

Equipment and broader asset management follows with implementation-specific variations by AEC domain and application. By incorporating enterprise social for rich interest group connections and search capabilities that traverse Human Resources, Project Management and Accounting, as well as Project collaboration systems, the solution delivers powerful capabilities to identify and leverage the right expertise for any given situation.

"If employees need expertise on concrete used in North Sea drilling rigs or research on high-stress bolts, they can find it quickly, no matter where it's located or what form it's in."

Joar Handeland, CIO
Aker Solutions

Projects & Job Sites: *Drive repeatability and profitability into every project and job site activity with reusable planning templates, configurable cost controls, and standard as well as ad hoc reporting.*

From the high-level handshake with business development during scoping and budget quotation, through project detailing, contract and buyout, job-site construction and final handover, the Project Manager bears the burden of profitability. Our solution works to lighten that burden by giving PMs the tools they need to streamline the entire process. Whether working on a small residential or a major capital project in civil engineering, PMs, accountants, site superintendents and the myriad of specialists and subcontractors on the project can enter data and transactions into one unified project management and accounting system that delivers real-time views into the status and trajectory of the project. With the ability to publish projects and subprojects as best practice templates for reuse or just search for, find and reuse a successful past project, the solution offers a wide array of time saving capabilities and process automations that help team members design and execute profitable projects.

Financial Control: *Know how your complex business is performing with “anytime anywhere” access to essential metrics and role-specific business processes.*

Most E&C firms have a complex portfolio of legal entities and larger organizations need to support employee activities in multiple locations and countries with the attendant exposure to multiple currencies and compliance regimes. Settlement of cross-charges for intercompany resource assignments can complicate roll-up of project costs and revenues. Moreover, reporting by project type, industry, geography and other perspectives can be challenging, especially for firms that are operating on multiple niche or geo-specific financial systems. Microsoft’s solution combines project accounting and financial management in one system, enabling drill-

“Acquisitions are quite difficult in the HR and Finance areas, but when we have [Microsoft Dynamics AX] in place then we can say in 90 days you’re on AMEC standard systems.”

Russ Harker
MDAX and Convero Program Advisor
AMEC plc

down from general ledger to underlying project-level transactions. With consolidation reporting and analysis for hierarchies of companies, the system delivers deep visibility into operations while also offering configurable project and financial controls through key performance indicators, notices and escalations, and workflows for automated procedural review and management approval. Power, flexibility and a familiar user experience in one package – a foundation for the Dynamic E&C firm.

“With our new Project Wizard system, we can create a budget for a new project in just one-tenth of the time it took us previously. Microsoft Dynamics AX and Office SharePoint Server 2007 work together to eliminate many of the inefficiencies in our processes so that people can focus on tasks that add value to the business.”

Jim McAleer, Controller
EwingCole

“Employees can do a lot more with the new solution themselves. Our controller experiments with the reporting functionality, creating new reports to investigate various scenarios. With our old system, we had to get a database administrator to modify reports, but now we can do it faster by ourselves.”

John Jordan, CFO
The Truland Group

At the heart of each of these solutions are a set of direct-from-Microsoft offerings that include Microsoft Dynamics products with capabilities purpose-built for E&C and project-centric enterprises. We also extend these foundational products with specialized and complementary features from industry partners to address the unique needs of specific disciplines within the engineering and construction community. For reference purposes, the matrix below drills one level deeper into our solution offerings.



Customer experiences on the path to the Dynamic E&C Firm

Many E&C firms are using integrated business solutions from Microsoft to further strategic business objectives while designing and building for change. For a cross-section of customer stories based on quotes captured in preceding sections, please follow the links embedded in case study titles below:

- **Norfolk Group Limited:** [CRM System Streamlines Sales Process for Electrical Services Provider](#)
- **JE Dunn Construction Company:** [National Construction Firm Manages \\$1 Billion in Projects with New Collaboration Solution](#)
- **EwingCole:** [Architecture Firm Strengthens Project Management with Integrated Solution](#)
- **Truland Group:** [Electrical Contractor Improves Visibility Across 15 Business Units with Centralized ERP System](#)
- **Aker Solutions:** [Oilfield Expert Supports Rapid Growth, Quality Decisions with Global Knowledge-Sharing Platform](#)
- **Decmil:** [Engineering Firm Rides the Resources Boom More Professionally with Microsoft's CRM](#)
- **Zeidler Partnership Architects:** [Architectural Firms Collaborate Virtually, Avoid \\$90,000 in Hardware and Travel Costs](#)
- **Keller Foundations:** [Construction Company Supports End-to-End Processes, Growth with ERP](#)
- **CH2M HILL:** [CH2M HILL Optimizes Business Development Performance with New CRM Solution](#)
- **MWH:** ["Wet Infrastructure Firm" Uses Collaboration Solution to Achieve Competitive Edge](#)
- **AMEC plc:** [Global construction giant speeds consolidation of acquired businesses to achieve tighter company integration](#)

The power of choice

Business solutions from Microsoft are designed to give E&C firms the power of choice, through a flexible adoption model. Firms have the opportunity to acquire and implement different solution elements as their own specific business needs and timetables require. For example, a firm could start by deploying solutions for Projects & Job Sites (including project management and accounting) and Financial Controls (including core financials), or by deploying more generic components such as expense management or employee profile, competency, and performance management.

Microsoft also offers organizations a choice in technology. E&C firms may choose to deploy a solution on premise, in the cloud, or as a hybrid of both, depending on needs and budgets. And IT leaders can often accomplish similar business outcomes using different combinations of software, selectively building on an existing installed base of Microsoft products to reduce the incremental cost of new solutions.

Conclusion

Microsoft solutions for the Dynamic E&C Firm have evolved over many years, with a number of key elements falling into place recently to create what we submit is the strongest and most integrated enterprise solution offering in the market today – further distinguished by unmatched business flexibility, time-to-value and low total cost of ownership results for customers. When assessing Microsoft as a strategic technology provider for your next operational excellence or business transformation initiative, we invite you to consider the following:

- **Dedicated R&D Industry Team:** Our Microsoft Dynamics unit has a dedicated team charged with building out the roadmap and industry-specific functionality for project-centric organizations. Furthermore, there are dedicated resources charged with looking 5 to 10 years into the future to identify major market trends that will affect this industry and to assess how we can help customers prepare to address them.
- **Industry-Dedicated Partners and Partner Management Team:** A number of partners have built their business around delivering Microsoft industry solutions to E&C firms, and they are vitally important collaborators in Microsoft's industry strategy. We ensure ongoing alignment between these partners and Microsoft R&D through a team of dedicated partner management professionals.
- **Industry-Specific and Microsoft Certified Partner Solutions:** We often work with partners to build targeted software features that extend our code base for niche uses while eliminating the need for costly integration services. For example, we take advantage of partner code to deliver equipment rental solutions. To ensure that these solutions are of the highest quality, we require partners to certify their offerings through the Certified for Microsoft Dynamics (CfMD) program, which includes code reviews and sets precise standards.
- **Dedicated Industry Marketing and Business Development Teams:** We continue to invest in industry-aligned marketing programs and resources to engage more closely with customers, trade associations, and thought leaders and to improve the industry-specificity and relevance of our offerings over time.



Microsoft Solutions for the Dynamic E&C firm

Microsoft Dynamics is a line of integrated, adaptable business management solutions that enables you and your people to make business decisions with greater confidence. Microsoft Dynamics works like and with familiar Microsoft software, automating and streamlining financial, customer relationship, and supply chain processes in a way that helps you drive business success.

United States and Canada toll free: (888) 477-7989

Worldwide: (1) (701) 281-6500

www.microsoft.com/dynamics

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INTEGRATED NETSUITE ENVIRONMENT BRINGS EFFICIENCIES TO ALL OF MIPRO ENTERPRISE'S BUSINESSES

For a diversified company like MiPro Enterprises, relying on disparate systems that can't communicate represents a huge obstacle, yet that's the situation in which MiPro found itself. A lack of integration between Workday Financial Management and NetSuite OpenAir meant manual processes and unacceptable delays were unavoidable realities. MiPro couldn't generate accurate, real-time views across the business, and that was just what it needed.

"Integration between NetSuite ERP and OpenAir makes it much easier to get information. We're able to forecast, project and budget more effectively."

Bernadette Sprawka, Managing Partner/CFO, MIPRO Consulting



LACK OF INTEGRATION KILLS EFFICIENCY

Integrated SRP pays off

By combining NetSuite ERP and OpenAir, MiPro now enjoys an integrated, real-time SRP solution for its two services businesses. IT services provider MiPro Consulting and healthcare job placement firm Staff Connections both have dramatically improved their efficiency and scalability, and are enjoying rich new reporting capabilities.

Improvement everywhere you look

MiPro's services businesses have streamlined everything from resource management to billing, and the parent company has cut three days from its monthly financial close process. Meanwhile, NetSuite ERP has also benefited MiPro's business brokerage and property management firms.

Primed for efficiency

Adopting an SRP solution opened opportunities to improve efficiency and customer service. Standardizing on OneWorld for ERP improved MiPro's visibility and management capabilities across all of its businesses.



Company Snapshot

Company: MIPRO Enterprises

Location: Milford, Mich.

Revenue: 18.8 M

Employees: 130

Industry: Professional Services

Users: 158

Country: 1

Other solutions considered:

Intacct, FinancialForce, Sage ERP

Systems replaced:

Workday Financial Management

NetSuite products implemented:

NetSuite OneWorld

NetSuite ERP

OpenAir PSA

Implementation partner:

NetSuite Professional Services

Case Study

The Rancon Group: Building Efficiencies to Support Growth

The Rancon Group acquires, develops, and sells residential, commercial, industrial, and resort assets on behalf of its investors. It controls \$280 million in property.



THE CHALLENGE:

The Rancon Group needed a modern financial solution to manage all aspects of its growing, diversified business. It wanted more robust reporting and analytics to empower finance to provide its management team with critical information, when and where needed. It also hoped to streamline business processes and increase automation with an integrated financial and project management solution.

THE SOLUTION:

Oracle ERP Cloud, including Financials, Project Portfolio Management, and Procurement

THE RESULTS:

With enhanced reporting capabilities, the Rancon Group derives better information from its accounting data in a fraction of the time. This eliminates the need for time-consuming reconciliation, freeing up accounting staff time for analysis. Additionally, the company has gained granular insight across the business and delivers real-time information to the field via mobile devices. The Rancon Group has seen an increase in productivity by enabling finance to quickly report enterprise-wide information such as individual company cash balances, a process that before took up to two hours.

"We now have a 360-degree view of our entire organization and have greatly expanded our reporting capabilities."

—Steven Van Houten
CFO, The Rancon Group

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Integrated Cloud
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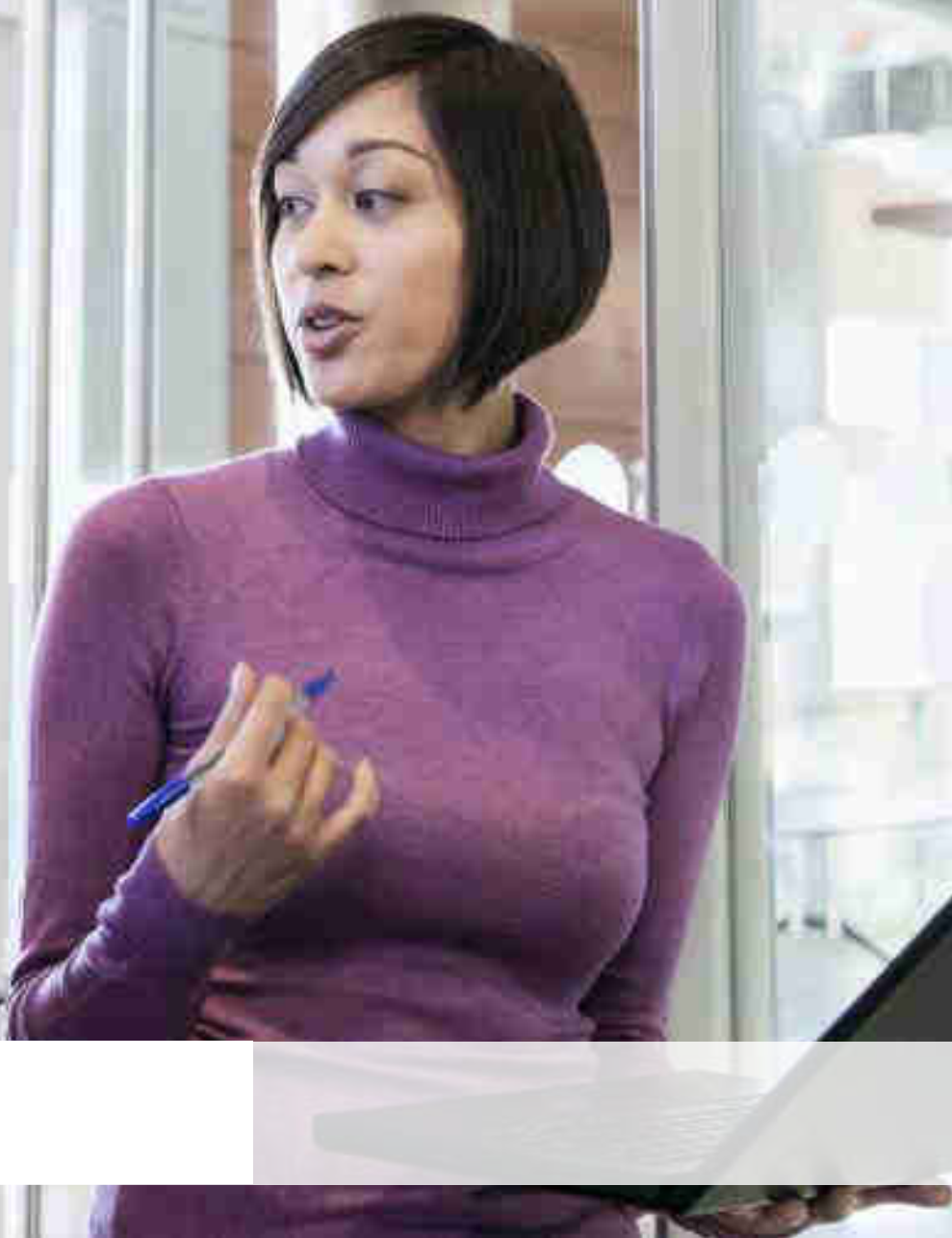
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Best Practices for ERP Cloud Migrations

A CFO Guidebook



ERP in the Cloud is Critical for Digital Transformation

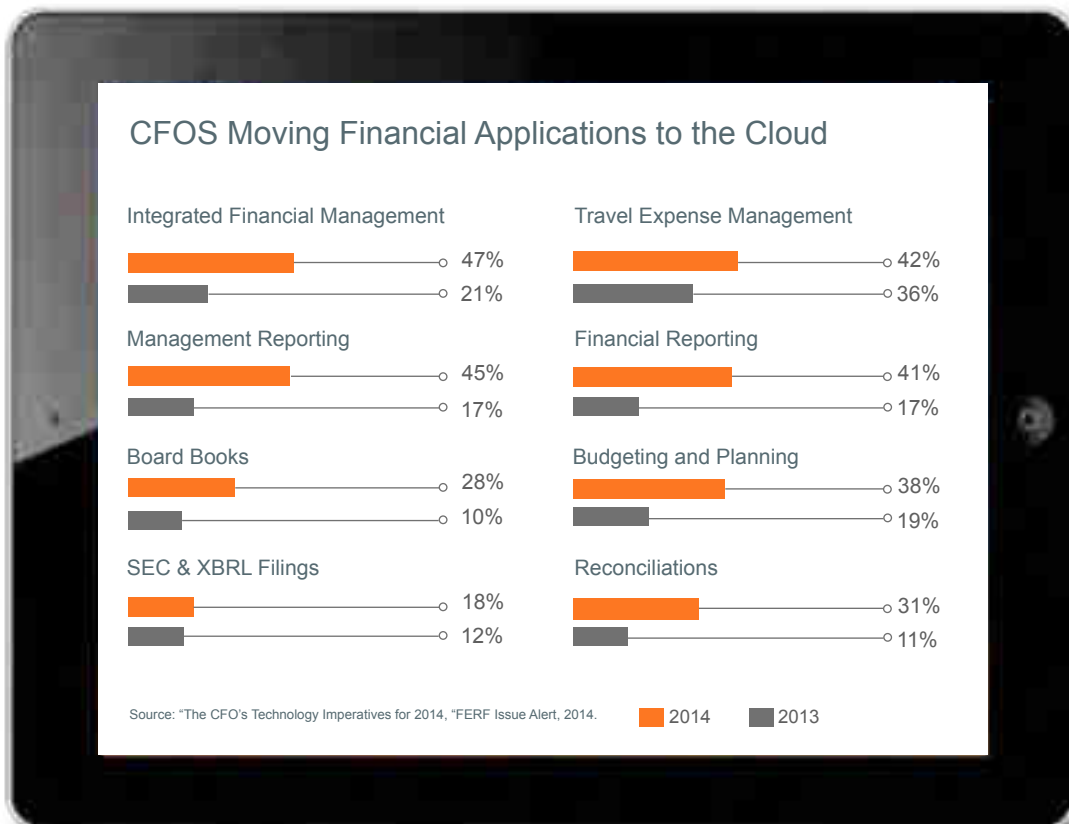
In a survey of 2015 business priorities, digital transformation of the business topped the list (*Inside the 2015 Boardroom Priorities*, Constellation Research, December 2014). Digital opportunities span every function of the business. Customer- and talent-facing functions tend to get the most attention, but in fact, digitizing core operations can have a greater impact on operational efficiency and cost-reductions than anywhere else (*Finding Your Digital Sweet Spot*, McKinsey & Company, 2013).

It's little wonder, then, that more and more CFOs are looking to the cloud for their enterprise resource planning (ERP) needs. The Financial Executives Research Foundation (FERF) found that CFOs made a significant

jump in moving their financial applications to the cloud in 2014 (Figure 1). Cloud applications of choice include financial management, travel expense management, reporting, budgeting and planning, procurement and more.

While ERP in the cloud is seen as more mainstream and less risky than it used to be, there are still pitfalls along the path to the cloud. In this guide, we'll discuss best practices to migrate safely to the cloud, and get the most value out of your cloud implementation.

Figure 1
Year-over-year comparison of the number of CFOs surveyed who are moving financial applications to the cloud
("The CFO's Technology Imperatives for 2014," Financial Executives Research Foundation)



Smooth Flying Ahead?

You understand the benefits, you've made the business case, and you've selected a vendor. You're ready to start your journey to ERP in the cloud. Now what?

While it's true that CFOs are *embracing the cloud* in growing numbers, the move carries its own challenges. According to Deloitte Consulting, it's important to understand how cloud implementations are different from traditional, on-premise projects (Figure 2).

ERP cloud can help you achieve measurable business value, but realizing this value isn't a given, and safe passage to the cloud is not guaranteed. Accordingly, we recommend the following best practices to get the most out of your cloud migration:

1. Understand up front the business value that the cloud can deliver to your organization.
2. Take an incremental, iterative approach to cloud deployment.
3. Configure, don't customize.

RE/MAX Holdings Inc., the familiar real estate franchisor, needed an upgrade from its aging ERP systems. As a result of the company's IPO in 2013, "our financial information has become transparent," said Karri Callahan, acting CFO and corporate controller. In addition, the company's growth plans required embedded controls and extensive reporting capabilities. RE/MAX signed up for Oracle ERP and EPM Cloud to help meet the company's planning and reporting demands. "Oracle offered us pre-integrated, state-of-the-art cloud services," Callahan added. The online applications also addressed another corporate imperative: supporting its franchisees. "This was a compelling value, since we prefer to invest in technology innovations for our brokers and agents rather than maintaining separate systems," Callahan concluded. (*"CFOs Jump to ERP Cloud to Accelerate and Integrate,"* Forbes.com, Jan. 30, 2015)

Figure 2
Key Differences between Cloud and On-Premise Implementations (*Smooth Flying Ahead: Safe Passage to Oracle ERP in the Cloud, Deloitte, 2015.*)

- The design process in a cloud implementation is typically more agile—more like prototyping. This allows the business to rapidly see the results of design decisions, which often boosts the rate of adoption and sign-off.
- The cloud by nature means configuration rather than customization. Because few changes can be made to the system, business processes need to be streamlined and standardized, a discipline that often leads to efficiency gains and productivity improvements.
- In a cloud implementation, providers continuously improve their systems, practically eliminating the need to wait for the "next release cycle" to address deficiencies or add new capabilities. This enables quicker fixes and updates, allowing customers to fully utilize the most current functionality.



“

Evaluating the cloud is about more than just TCO [total cost of ownership]; it should really be about creating business value. You can start with shareholder value: what are the opportunities for your company to be more competitive, to differentiate yourself? It could be that you need to free up working capital, in which case Oracle ERP Cloud enables significant improvements in operations like procure to pay, project to close, tax deductions and so on. Whatever the business driver is, you need to make sure your ERP cloud solution has the capabilities to deliver on it.”

Mike Brown,
Principal, Deloitte Consulting LLP

Best Practice No. 1:

Understand Up Front the Business Value that the Cloud can Deliver to your Organization

Many companies think of the cloud in terms of cost savings alone, and don't often take the time to map their unique processes to the value they can gain from a move to ERP cloud. As a result, many don't get the business value they had hoped from their cloud deployments. Before you begin your migration, take the time to understand your unique business model and where the cloud fits in.

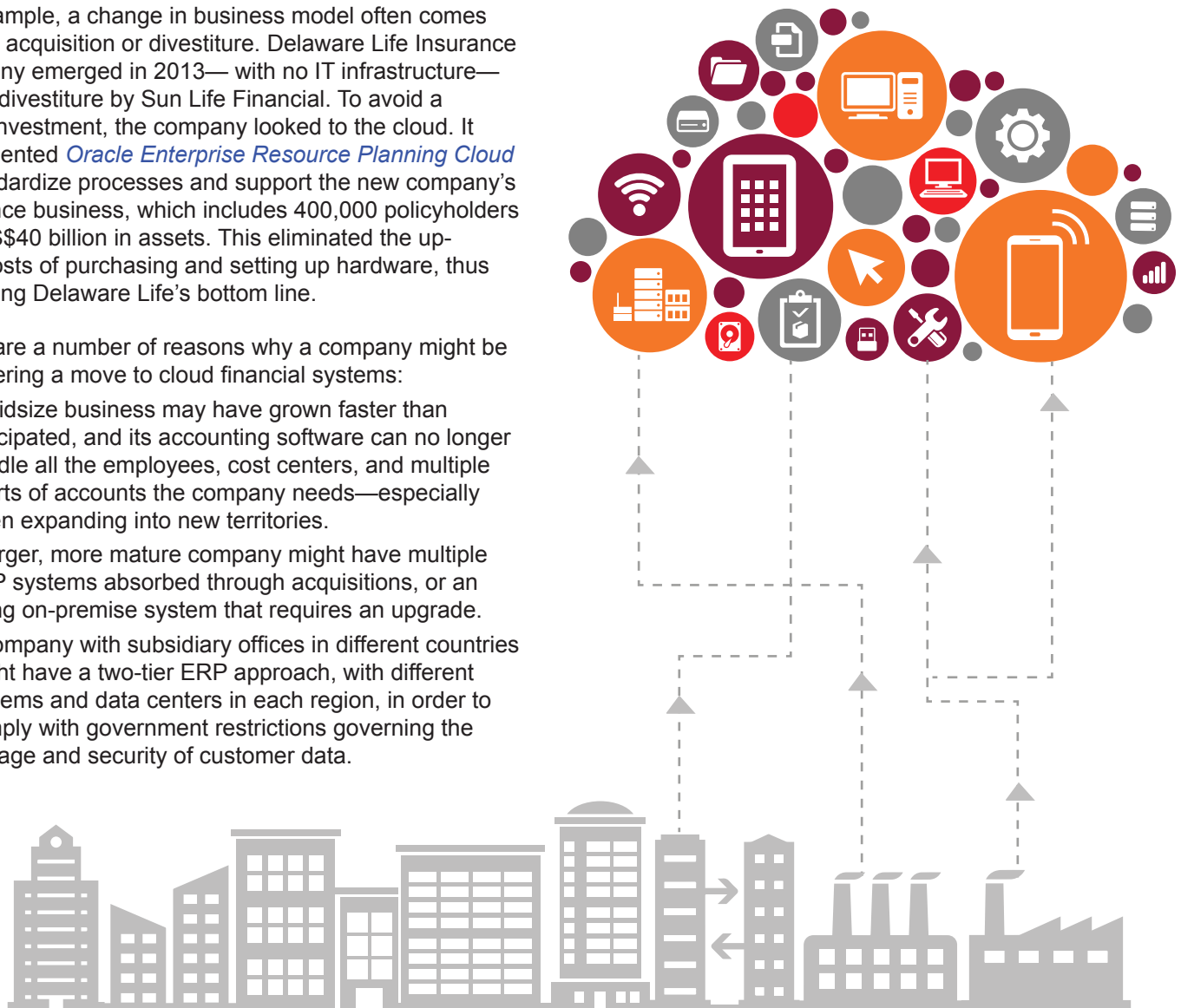
For example, a change in business model often comes with an acquisition or divestiture. Delaware Life Insurance Company emerged in 2013— with no IT infrastructure— from a divestiture by Sun Life Financial. To avoid a big IT investment, the company looked to the cloud. It implemented *Oracle Enterprise Resource Planning Cloud* to standardize processes and support the new company's insurance business, which includes 400,000 policyholders and US\$40 billion in assets. This eliminated the up-front costs of purchasing and setting up hardware, thus improving Delaware Life's bottom line.

There are a number of reasons why a company might be considering a move to cloud financial systems:

- A midsize business may have grown faster than anticipated, and its accounting software can no longer handle all the employees, cost centers, and multiple charts of accounts the company needs—especially when expanding into new territories.
- A larger, more mature company might have multiple ERP systems absorbed through acquisitions, or an aging on-premise system that requires an upgrade.
- A company with subsidiary offices in different countries might have a two-tier ERP approach, with different systems and data centers in each region, in order to comply with government restrictions governing the storage and security of customer data.

When looking at a possible cloud migration, assess the key factors of your own operating model and examine how an ERP cloud can benefit the business. For example, if your company has a subsidiary model, an ERP cloud can give you the advantage of using the same software globally, while storing customer data in the vendor's regional data centers—thus remaining compliant with government restrictions.

Similarly, if you're a mature company in need of an ERP system upgrade, you can bypass the long (and often arduous) process of an on-premise rollout in favor of a move to the cloud. And if your midsize company has plans for even more growth and expansion, you might want to bypass the mid-tier ERP systems and leapfrog from QuickBooks into an enterprise-class ERP that you won't outgrow. Such a choice is much easier and more affordable in a cloud model than with traditional, on-premise options.



Once you've aligned your cloud model with your business model, you can start assessing, which business functions should move to the cloud. Discuss the current state of your business, identify the IT challenges that are holding you back, and compare those challenges to the capabilities of the cloud applications you're considering.

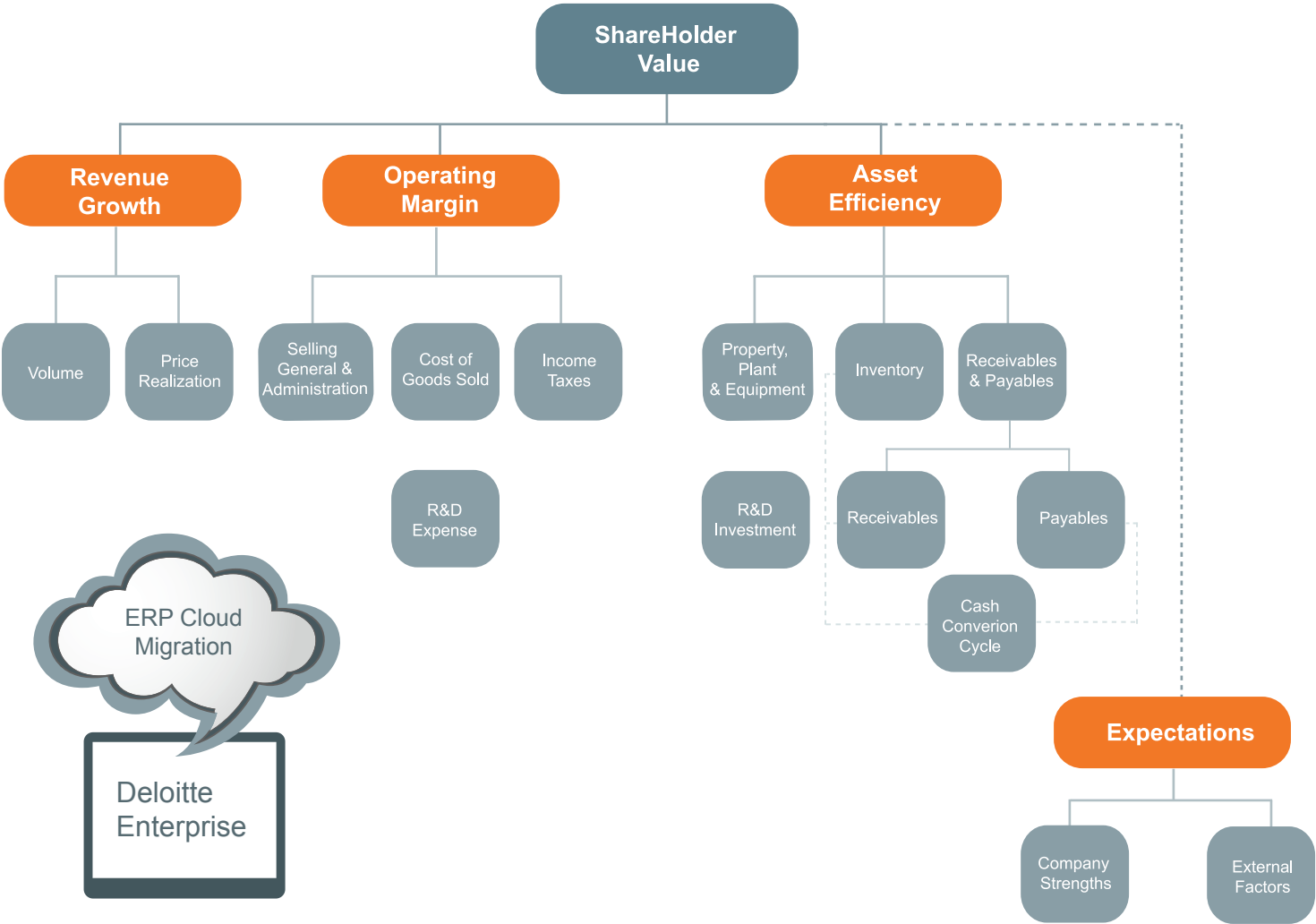
"With our clients, we do what we call an Enterprise Value Map," said Mike Brown, Principal, Deloitte Consulting LLP. "We look at all the company's operational drivers and link them to bottom-line value. Then we examine each one of those drivers—such as receivable days, payable days, income tax, etc.—and figure out, how a shift to ERP in the cloud could impact those numbers. If you can simply reduce your average payables by a couple of days by moving ERP to the cloud, that's a big impact on business value."

Whether the business benefits of the cloud come from reduced days payable, a faster close period, or other improvements, it's important to identify those drivers before you begin your migration to the cloud. If you begin your migration project without knowing where the cloud will have the biggest business impact, you're likely to be disappointed in the results.

“ We planned our journey to the cloud in phases. The phased, incremental approach mitigated that risk, making it easier to manage business change. We defined and proved out the solution, built skills and expertise, provided feedback to development about the user experience, and incrementally added new functionality.”

Corey West
Executive Vice President, Corporate Controller & Chief Accounting Officer, Oracle

Example of Deloitte Enterprise Value Map™
(Safe Passage to the Cloud: ERP Cloud Migration Best Practices, 2015).



Best Practice No. 2:

Take an Iterative, Incremental Approach to Cloud Deployment

One of the obvious benefits of the cloud is that you don't need to install anything, so you can get your system up and running faster. An agile approach to bringing the new system online can help you take advantage of this speed.

Start with small teams piloting small units of work, to establish whether the new cloud ERP meets your main business requirements. "We do what we call a 'conference room pilot' approach," said John Doel, Principal, KPMG. "We sit down with the end users and ask them to perform typical processes that they need to do on a regular basis. From this, we can validate the design or look at configuring the system a little differently."

Additionally, don't migrate your ERP history: limit the migration to open GL balances, projects and employees. This will reduce the amount of time and work required for the project.

"Data migration is a key consideration," said Scott Curry, vice president at Emtec Inc. "There's more to it than importing and exporting spreadsheets." Curry explained that the most common challenge is dirty data. "Give your team enough runway to clean the data," he advised.

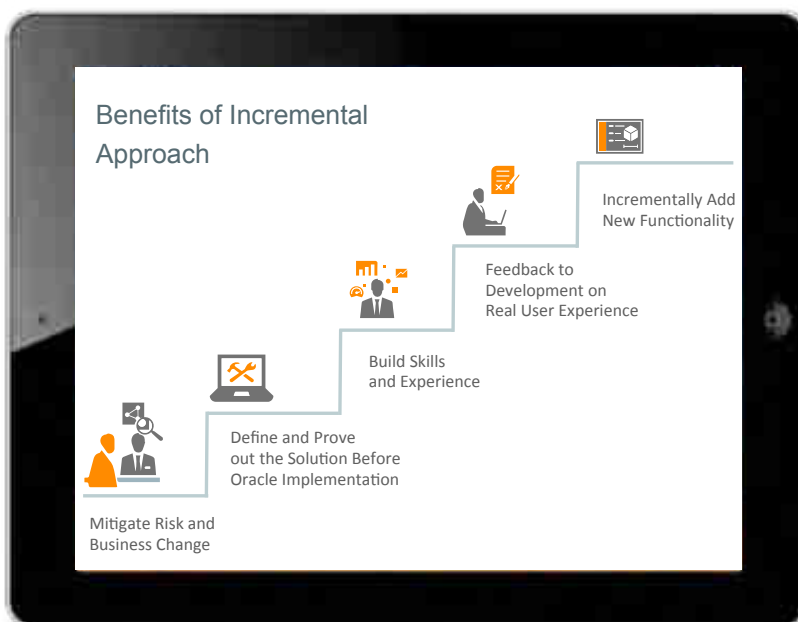
"Every company has multiple sources of data, which inevitably leads to duplication and inconsistencies. You don't want to migrate information that you don't need."

Oracle itself followed this advice when moving its finance operations to the cloud. Always ahead of the technology curve, Oracle began its migration in 2012, when ERP cloud was still seen as a huge risk.

Oracle chose to begin with its Indian subsidiary, which was running on a separate instance of the company's on-premise ERP. This two-tiered approach to ERP is commonly found among companies with regional subsidiaries, which need the ability to comply with country-specific regulations; yet it leads to disparate data, integration challenges, and a lack of visibility and oversight from head office. By migrating ERP to the cloud in India first, head office gained the ability to create a global general ledger, chart of accounts, and reporting hub. Oracle's Indian subsidiary, meanwhile, maintained its ability to meet local requirements to store customer data in country.

"ERP cloud has helped our business in a number of ways," said Corey West, Oracle Executive Vice President and Corporate Controller. "It has improved the user experience, giving us functionality that never existed before. The social and mobile capabilities really impact how people do their jobs, including how we communicate during the close process. We've enhanced data security, streamlined consolidation, improved insight and reporting—and we've reduced the close cycle by one day."

Overview of Oracle's approach to ERP cloud migration (*Safe Passage to the Cloud: ERP Cloud Migration Best Practices, 2015*)



“When we looked at how to integrate our business processes with the Oracle ERP Cloud we really found two things. One was that there was flexibility within the system to adapt to our business processes. But in addition, when we looked at the core functionality that was built into Oracle ERP Cloud, there were cases where we thought, ‘Hey, that’s better than the way we do it.’ And so we made the decision to change our business process because we felt that the way that the Oracle ERP Cloud handled it was better than the process that we had designed ourselves.”

Steve Van Houten
CFO, The Rancon Group

Best Practice No. 3: Configure, Don't Customize

One of the advantages of the cloud is that it enforces standardization across the business. There's no point in ten offices performing the same task in ten different ways out of habit. However, if you want to create competitive advantage in the digital age, you need to do some things differently from the way your competitors do them.

An ERP cloud solution should make it easy for you to configure your business processes to deliver that all-important competitive advantage.

Tip 1: Select a cloud vendor with a platform that enables you to configure, and ensures that your configurations are upgradeable.

With some cloud providers, if you want to extend the software a little differently to suit your unique business needs, you have to do it using the vendor's proprietary languages—which very few developers are familiar with, and which only allow designs within strict limitations. This is where standards-based platform as a service (PaaS) becomes critical.

When it comes time to extend and enrich your applications for the way you run your business, you want to take advantage of a widely available talent pool. This means using industry-standard development languages such as Java, and readily available connections to your databases, other clouds, and systems. And it means cloud-based documentation: Whenever you make changes to your applications, connections and processes, those changes can be tracked and stored in the cloud. No more hunting for documentation when the time comes to make changes to mappings, and no more reliance on integration specialists who may have left the company long ago.

“Oracle allows a much broader range of configurations than other ERP cloud software we’ve worked with. Many cloud ERP software vendors force a set of pre-defined structures on clients that do not offer flexibility long term as the business grows and/or evolves requiring the software to evolve with the business. With Oracle, you have the ability to leverage embedded leading practices while providing configuration flexibility. For example, when you create a field, it’s tied to a functional area, so other parts of the system know how the new piece of information relates to them. This isn’t true with many other cloud vendors. And, the embedded Oracle reporting and analytics capabilities are stronger.”

Scott Curry
Vice President, EMTEC INC.

Tip 2: Whenever possible, embrace the standard best practices already in the application.

If all you want is to migrate your old, on-premises processes to the cloud, then you're not really getting all the benefits of a modern ERP cloud. Of course every company will have some unique processes, but if you start by focusing on the small percentage of business processes that make up the exceptions, you run the risk of kicking off your project with delays, objections, and frustrations.

Instead, start with the best practices that a modern ERP delivers. This will get you to the cloud faster, establish some early wins, and in the long run, will help make your business more efficient by streamlining some old processes that likely haven't kept up with your business anyway.

Configurations depend on your industry, growth pattern, personnel and business requirements. Emtec's Scott Curry gives the example of two companies that are similar in size and industry yet have different sized accounting teams—one with double the accounting staff. "The company with fewer accounting people runs its businesses very efficiently and has leveraged the software to standardize and automate business functions, while the other company built in process complexity and leveraged people instead of software."



Tip 3: Limit configurations to those that enhance your unique competitive advantage.

Solairus Aviation is a company that manages private jets for large corporations and wealthy individuals. The company has a unique business process that sets it apart from the competition: it manages every aircraft as a project.

“We’re a turnkey company that provides our clients with flight department management,” explained Mark Dennen, Solairus Aviation’s CFO. “We manage all aspects of their airplane, including finding them hangar space, buying fuel, assigning pilots—we take care of everything. We’re not a transportation company, we’re a service business. And part of that is providing our clients with a monthly financial summary of the cost of operating their aircraft.” (*Oracle Customer Reference Forum with Solairus Aviation, April 15, 2015*)

When Solairus began operations in 2009, it was running on QuickBooks and spreadsheets. Five years later, it had outgrown those systems. “When we started kind of trying to figure out what we needed, having a project module was important to us,” Dennen said. “We treat every aircraft as a project, and we treat every trip the aircraft flies as a task. We’re reporting expenses on a trip-by-trip basis to our customers. We needed a flexible billing module that would let us take all of the costs accumulated in that project, and be able to turn it into a customized invoice.” (*Ibid.*)

One of the advantages that Solairus offers over competitors is its ability to track every expense associated with a particular aircraft, right down to the pilot’s hotel bill on a given date, during a given trip. “Right now, we provide a PDF or an Excel version of this invoice and we e-mail it to the client,” Dennen explained. “But by the end of this year, we want to put the invoices on a portal where clients can log in to view their bill. And if a client looks at a transaction and says, ‘Hey, wait a second, what is this aircraft part you bought that cost \$12,000?’—they’ll be able to click a hyperlink and see the invoice for that part, and they’ll be able to see that it was approved by their maintenance supervisor, and that it was installed on their specific aircraft, not somebody else’s.

“That capability is absolutely going to set us apart from any one of our competitors because no one is doing that. I don’t think anyone is even thinking about doing that.” (*Ibid.*)

This is the kind of business process that is worth configuring in your ERP cloud, because it provides a distinct competitive advantage. Other, less valuable processes can be discarded in favor of the standards available in the ERP cloud application.

Tip 4: Before implementing, work closely with your implementation partner to understand what’s available in the system and how it can deliver the reports and analytics you need.

One of the greatest benefits of a modern ERP cloud is that it provides powerful and easy-to-use reporting and analytics capabilities for a variety of users, whether they’re senior executives, line managers, employees, or frontline process experts. In the past, teams may have had to wait for reports to come out of a separate data warehouse, or wrestled with spreadsheets or Access databases that proliferated across different departments and showed conflicting data.

Today you can understand your business in real time directly from your ERP cloud, with advanced multidimensional analysis and data visualization that show you relevant insights quickly. To that end, look at reporting and analytics early in the implementation plan. Decide which information you need, how you want your reports to look, and who will have access to what level of information. Providing early reports to line-of-business managers is a great way to turn skeptics into fans.

“

For CFOs or other executives in my position, the key takeaways are to be actively involved early and, if you can, throughout the entire process. Get the team involved. Make sure that they’re as excited about the product as you are. Keep the energy going, because your team will start to get burned out, they’ll be working overtime, they’ll run into obstacles and frustrations. Be a cheerleader and support for those folks as they start to get a little weary. Doing things to make them feel appreciated will go a long way. If you can build the excitement and stay involved and show them that the project is important to you, as well as to the organization, then the chances of success are great.”

Mark Dennen,
CFO, Solairus Aviation
(*Oracle Customer Reference Forum with Solairus Aviation,*
April 15, 2015)



Conclusion

In order to make all of the above happen, you need strong executive support and stakeholder buy-in. It might seem obvious for any IT project, yet it remains the most frequently cited best practice among our clients: no matter the size of the company, executive sponsorship is critical.

Employees throughout the company must see and hear from the C-suite frequently, so that they understand that the project is a strategic priority for senior management. Without this constant communication, it can be difficult for employees and front-line managers to embrace the change. They may think there's nothing wrong with the way they're doing things now, or they may be uncertain about the implications of the change.

The people who use your ERP systems every day are the most important people on your team; if they don't buy into it, the solution won't be a success. Show them the new applications early on, so they can get comfortable with the user experience. Involve them in the small, incremental conversions discussed above, so that they are part of the early successes. Consult with them about the reports they want to see coming out of the system. By the time your ERP cloud project goes live, users will have already adjusted to the new processes, and change management will be minimal.





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Best Practices for ERP Cloud Migrations: A CFO Guidebook
September 2015
Lynne Sampson

Deciphering the world of social media, One conversation at a time

Semeon Analytics captures the **essence** of conversations within their context enabling **precise** interpretation and actionable **insights**

Unlocking the impact of social intelligence, for business success

Natural Language Processing powered by multilingual **semantic analysis**; we understand Arabic as well as we do English.

Filtering Techniques perfected to **reduce noise**, weed-out spam and listen to the **conversations that matter most**.

Unique patented algorithms to measure and ingest large scale unstructured data turning it into relevant **concepts**.



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INGEROP

Unit4 ERP supports 4000 engineering projects and business growth.

Engineering firm centered around five business areas: infrastructure, town planning/public transportation, water & environment, buildings, energy & industrial facilities. It is specialized in large engineering projects. The group undertakes project management and technical engineering.



PROFESSIONAL SERVICES



Vertical expertise

Required a system with superior project management capabilities.



VALUE DELIVERED

20% revenue growth attributed to system and process improvements.

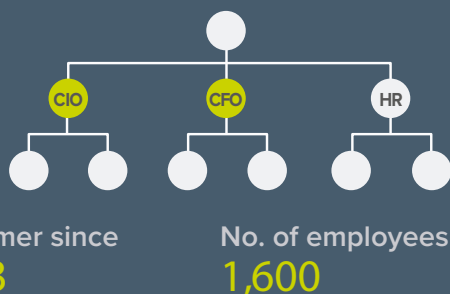
50% Increased project visibility & profitability.

“UNIT4 Business World allows us to optimize the management of our current projects. Its flexibility allows us to integrate the specificities of our business, view the progress of our projects and monitor the profitability easily. We now have a practical and economical solution to meet the challenge of our growth in France and abroad,” *Marc Maria Martin, INGEROP.*



OPERATES IN

France
International



Revenue
€189m

Customer since
2003

No. of employees
1,600

Why did they need to change?



CHANGE PRESSURES

- Governmental Regulations and Compliance
- Reorganization and Restructuring
- Mergers and Acquisitions
- Business Process Change
- Financial Management-Driven Change



ROADBLOCKS

The old finance system wasn't suitable for the growing business today. It's project management capabilities were limited which meant INGEROP was not operating efficiently.

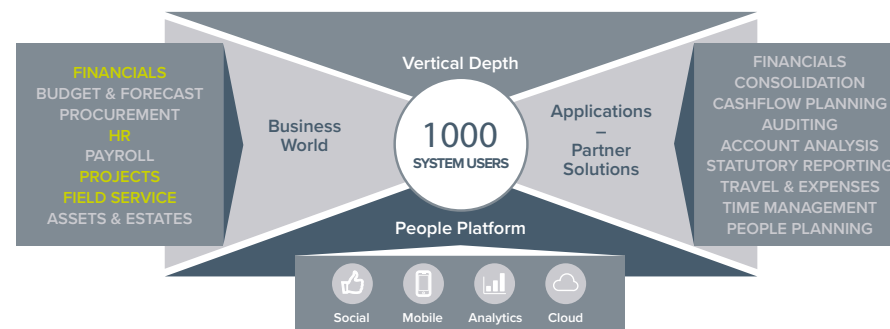


RISKS

Failure to manage projects well with supporting systems could lead to project failure and failure to win business, while keeping project teams happy.

How did Unit4 help?

In the face of rapid growth, INGEROP needed a solution capable of managing, in full project mode, up to 4000 engineering projects at the same time including small and very large projects.



What were our USPs?

Monetary savings

INGEROP achieved 20% revenue growth without increasing headcount.

Improved operations

Standardised processes group-wide. In-depth visibility of complex project management producing high efficiency ratio.

Efficiency and governance

The organization has become more agile across the board. Projects are better managed, customer better serviced and project teams are happier.



VENDOR DIRECTORY

Vendor Directory

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A3 Software	a3ERP	www.woltersklower.es/software-de-gestion/a3erp-gestion-pymes
AB pro	ONE GOAL atmosphere	www.abprosystems.com/Productos/atmosphere.html
Acumatica	Acumatica	www.acumatica.com/solutions/services-industry-cloud-erp
Adeaca Corp.	Adeaca ONE	www.adeaca.com
BizAutomation	BizAutomation.com	www.bizautomation.com
BQE Software, Inc.	BillQuick	www.bqe.com
Deltek Systems, Inc.	Ajera	www.axium.com/products/about-ajera-software.aspx
Deltek Systems, Inc.	Costpoint	www.deltek.com/products/costpoint
Deltek Systems, Inc.	Maconomy	www.deltek.com/products/maconomy
Deltek Systems, Inc.	TrafficLIVE	www.deltek.com/products/trafficlive
Deltek Systems, Inc.	Vision	www.deltek.com/products/vision
Dynacom Technologies, Inc.	ERP Edition	www.dynacom.com/en/our-management-solutions/erp-edition.html
Entry Software Corporation	TeamHeadquarters	www.entry.com
Epicor	Epicor ERP	www.epicor.com/solutions/erp.aspx
Exact	Exact	http://exactonline.com
EXEControl Global Solutions	EXEControl	http://software.execontrol.com
FinancialForce	FinancialForce ERP	www.financialforce.com
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IFS	IFS Applications	www.ifsworld.com
Infor	CloudSuite Corporate	www.infor.com/cloud/cloudsuite-corporate
Informat Software	MAÎTRE	http://informat.net/en/maitre-eng
Jeeves Information Systems	Jeeves ERP	www.jeeveserp.com/en
Microsoft	Dynamics AX	www.microsoft.com/dynamics/ax
Microsoft	Dynamics SL	www.microsoft.com/dynamics/sl
NetSuite	NetSuite ERP	www.netsuite.com/portal/products/netsuite/erp.shtml
Odoo	Open Source ERP	www.odoo.com
Oracle	Oracle E-Business Suite	www.oracle.com/us/products/applications/ebusiness
Oracle	Oracle ERP Cloud	https://cloud.oracle.com/en_US/erp-cloud
Oracle	Oracle JD Edwards EnterpriseOne	www.oracle.com/us/products/applications/jd-edwards-enterpriseone
Oracle	Oracle PeopleSoft	www.oracle.com/us/products/applications/peoplesoft-enterprise
Ramco Systems	Ramco Services Resource Planning (SRP)	www.ramco.com/industries/professional-services

Vendor Directory

Company	Solution(s)	Website
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Sage	Sage 300c ERP	www.sage.com/us/erp/sage-300
Sage	Sage X3 ERP	www.sage.com/us/erp/sage-x3
SAP	SAP Business All-in-One	http://go.sap.com/product/enterprise-management/business-all-in-one.html
SAP	SAP Business ByDesign	http://go.sap.com/product/enterprise-management/business-bydesign.html
SAP	SAP ERP	http://go.sap.com/product/enterprise-management/erp.html
TOTVS	TOTVS	http://en.totvs.com
Unit4	Unit4 Business World	www.unit4.com/applications/erp/business-world
WorkBook Software	WorkBook	http://workbook.net
Workday	Workday	www.workday.com
YASH Technologies	ServicesOne	www.yash.com/sap-all-in-one/servicesone-sap-business-all-in-one-solution-for-professional-services.php
Zavanti	Zavanti ERP	www.zavanti.com/enterprise-resource-planning-erp-financials

About the Author



Ted Rohm is a senior research analyst at TEC focusing on ERP manufacturing solutions. He has over 20 years of experience in large-scale selection, design, development, and implementation projects, primarily in the biotech/pharma industry.

Prior to joining TEC, Rohm worked for a number of companies including Oracle, Syntex, and Genentech (now part of The Roche Group). Rohm worked with Genentech for 13 years, starting as a senior programmer analyst responsible for building custom applications using the Oracle Tool suite in support of sales and marketing and product distribution. He then became senior manager of commercial systems, where he directed the development, deployment, and operations of enterprise-wide applications for the sales and marketing departments. Rohm was the principal systems architect during his last few years at Genentech, focusing mainly on the implementation of SAP ERP and its integration with other systems.

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