

CLASH OF THE TITANS 2016

An Independent Comparison of SAP,
Oracle, Microsoft Dynamics and Infor



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Introduction

Panorama Consulting Solutions, an independent and vendor-neutral enterprise resource planning (ERP) consulting firm, developed its annual ***Clash of the Titans*** analysis to compare the “titans” of the enterprise software industry: SAP, Oracle, Microsoft Dynamics and Infor. The analysis is based on all solutions offered by the four vendors and is not segmented by industry. The report provides a quick read on the high-level characteristics of each vendor and insight into respondents’ experiences with the chosen software. Panorama is in no way affiliated with SAP, Oracle, Microsoft Dynamics, Infor or any other software vendor or reseller.

Clash of the Titans 2016 includes analysis of responses collected via the Panorama Consulting website from June 2014 to October 2015. The dataset includes 519 respondents who have selected or implemented SAP, Oracle, Microsoft Dynamics or Infor ERP solutions.

Panorama Consulting developed ***Clash of the Titans 2016*** by analyzing quantitative and qualitative data regarding SAP, Oracle, Microsoft Dynamics and Infor ERP implementations. The report includes findings on a variety of factors such as vendor market share, implementation durations and payback periods summarized by vendor. Also included in this report are metrics regarding selection trends and business benefits realization.

As should come as no surprise, the battle for dominance in the Tier I market continues as SAP, Oracle, Microsoft Dynamics and Infor each seek to grow their global user base. Each of these four vendors are quick to adapt to the ever-changing needs of their clients, anticipating and capitalizing on economic trends and developing offerings for verticals outside of their original target markets.

Oracle

Oracle was originally known for its database systems rather than its ERP systems. The organization expanded its share in the ERP market through organic growth and a number of high-profile acquisitions including JD Edwards, PeopleSoft, Siebel CRM and the like. Given this particular growth model, Oracle has become a configurable and flexible option and offers a best-of-breed option for its customers.

Oracle has grown primarily through acquisition of best-of-breed point solutions and has made considerable progress merging the JD Edwards Enterprise One functionality into Oracle EBS. Oracle EBS is comprised of over ten product lines, each of them with several modules that are licensed separately.

Oracle's other key ERP offerings include JD Edwards and PeopleSoft. JD Edwards supports the manufacturing industry especially well. It is an integrated applications suite of comprehensive ERP software that supports a wide variety of business processes with one common database. JD Edwards EnterpriseOne has an open platform, which provides for a broad support for different operating systems, databases, and middleware from Oracle and other vendors.

PeopleSoft targets large organizations, especially in the public sector and financial services sector. PeopleSoft has eight different application solutions such as financials, supply chain, HR, CRM and so on, among which HR and CRM solutions are the most desirable. Before being acquired by Oracle, the PeopleSoft suite was based on a client-server approach with a dedicated client. The current PeopleSoft version is based on a web-centric design, which allows all of an organization's business functions to be accessed and run on a web browser.

Oracle offers its solutions with different deployment models, including both on-premise and on-demand. Examples include E-Business Suite On-Demand, PeopleSoft Enterprise On-Demand and JD Edwards EnterpriseOne On-Demand, all of which are hosted applications but are not true SaaS applications. There is a move to provide "virtualization," which is Microsoft terminology for the cloud environment.

Oracle's best-of-breed approach sometimes allows for more flexibility to accommodate changing business needs, but this strength can become a weakness when it becomes harder to enforce standardized processes across a larger organization.

Based on qualitative and quantitative input from our clients as well as our own implementation experience, some of Oracle's functional strengths include:

- Strong finance and accounting functionality
- Advanced pricing module supports complex pricing scenarios
- E-portal provides for easy interaction with customers and suppliers
- Well-built IT architecture
- Strong product configurator
- Good functionality for production operations

SAP

SAP began as an ERP software provider and today is the leading player in the ERP market. SAP developed close relationships with a variety of alliance partners, which fueled its growth through the 1990s and 2000s. There are an abundance of third-party developers who supply numerous add-on programs that work in conjunction with SAP products. SAP also offers ERP solutions appropriate for all sizes of organizations.

Based on SAP's technology platform NetWeaver, SAP Business Suite is a set of integrated business applications that provides industry-specific functionality and scalability. Although very powerful, SAP can be more difficult to change as a business evolves. This is both a strength and a weakness: on the one hand, it is tightly integrated and helps enforce standardized business processes across an enterprise, but it can also be more difficult to modify the software to adjust to evolving core processes and requirements.

SAP's core offerings include SAP Business All-in-One and SAP Business One.

SAP Business All-in-One is a comprehensive, integrated enterprise software that offers industry-oriented solutions. All-in-One focuses on small- to mid-sized organizations with up to 2,500 employees. SAP Business All-in-One is template-based, and a configurable derivative of SAP Business Suite. It offers more than 700 industry-specific solutions by deploying their "best practices."

SAP Business One is a single, integrated application designed for small organizations with less than 100 employees. It mainly supports retail, wholesale, services and manufacturing. With third-party add-ons, SAP Business One is able to support a variety of industries and functions.

In order to meet the needs of small or mid-size businesses, SAP offers SAP ByDesign. Available in United States, Germany, France, the United Kingdom, India, and China, SAP ByDesign supports organizations with 100 - 500 employees. As a SaaS-type on-demand system, SAP ByDesign has low upfront costs and may require fewer IT resources than traditional ERP software.

Based on qualitative and quantitative input from our clients as well as our own implementation experience, some of SAP's functional strengths include:

- Strong product development functionality
- Ease in supporting Make-To-Order processing
- Integrated retail module
- Clear visibility to goods-in-transit orders
- Good quality control and quality assurance functionality
- Good compliance with SOX and tax regulations
- Strong cash management functionality

Microsoft Dynamics

Already established as the premier supplier of operating systems and business software, Microsoft Corporation entered the arena of ERP software through acquisition. In 2000, Microsoft acquired Great Plains, one of the first accounting packages in the USA that was designed and written to be multi-user and to run under Windows as 32 bit software. This was soon followed by the 2002 acquisition of Navision, a Danish software organization who offered an accounting and ERP solution offered for Microsoft's Windows 2000 Professional operating system. Navision had merged with Damgaard Software in 2000. Damgaard's product was Axtapa, a highly respected accounting system and ERP solution originally brought to the United States from Europe by IBM in 1996. Written completely in Java, Axapta was designed to be a complete ERP solution which included advanced distribution, process and discrete manufacturing, built-in CRM capabilities, and within an integrated development environment. The products maintained their own identities under Microsoft and were originally marketed as Microsoft Business Solutions, until being changed to Microsoft Dynamics ERP in 2006.

Microsoft Dynamics GP, the former Great Plains product, is designed for small to mid-sized business desiring a simple, out-of-the-box software solution. Microsoft Dynamics NAV, the former Navision product, is designed for small- to mid-sized businesses that need broader functionality and the ability to customize their software solution. The former Axtapa product, now marketed as Microsoft Dynamics AX, is the flagship of the Microsoft Dynamics offerings, and is geared toward larger, enterprise-wide implementations. Other products within the Microsoft Dynamics product line include SL (formerly Solomon), which is designed for project-oriented businesses, and CRM.

Microsoft Dynamics has historically relied upon its large network (10,000+) of partners to develop extended and industry-specific functionality beyond the core products. However, the recent AX 2013 release incorporates into the core offering industry-specific functionality for manufacturing, public sector, service industries and distribution. Additionally, this release incorporates significantly improved "cloud" capabilities.

Based on qualitative and quantitative input from our clients as well as our own implementation experience, Microsoft Dynamics' functional strengths include:

- Ease of customization
- High flexibility
- Ease of integration
- Familiarity of user interface
- Strong inter- and multi-organization support
- Strong multicurrency and localization capabilities
- Data dimension-enabled tracking of physical moves and financial transactions
- Strong MRP and trade capabilities

Infor

Infor builds beautiful business applications with last mile functionality and scientific insights for select industries delivered as a cloud service. With 13,000 employees and customers in more than 200 countries and territories, Infor automates critical processes for industries that include healthcare, manufacturing, fashion, wholesale distribution, hospitality, retail and public sector. Infor builds its applications with a modern, standards-based architecture that embraces open source technology and provides customers with unmatched flexibility, scale and power.

Infor differentiates itself by building last-mile functionality for each of its targeted industries directly into vertical, and even micro-vertical, applications. Working directly with customers and industry thought leaders, Infor identifies the critical needs of specific industries and pre-packages functionality into its applications. The result is that companies can reduce or even eliminate the need for costly customizations that prolong implementations and complicate future upgrades.

Infor has made a major investment in being able to deliver these industry-driven solutions in the cloud. Partnering with Amazon Web Services, Infor provides secure, flexible and cost-effective cloud hosting options that can increase business agility and dramatically simplify IT landscapes. Whether customers want to deploy on-premise, in the cloud or a combination of both, Infor has the infrastructure and resources to support whatever choice is best for their businesses.

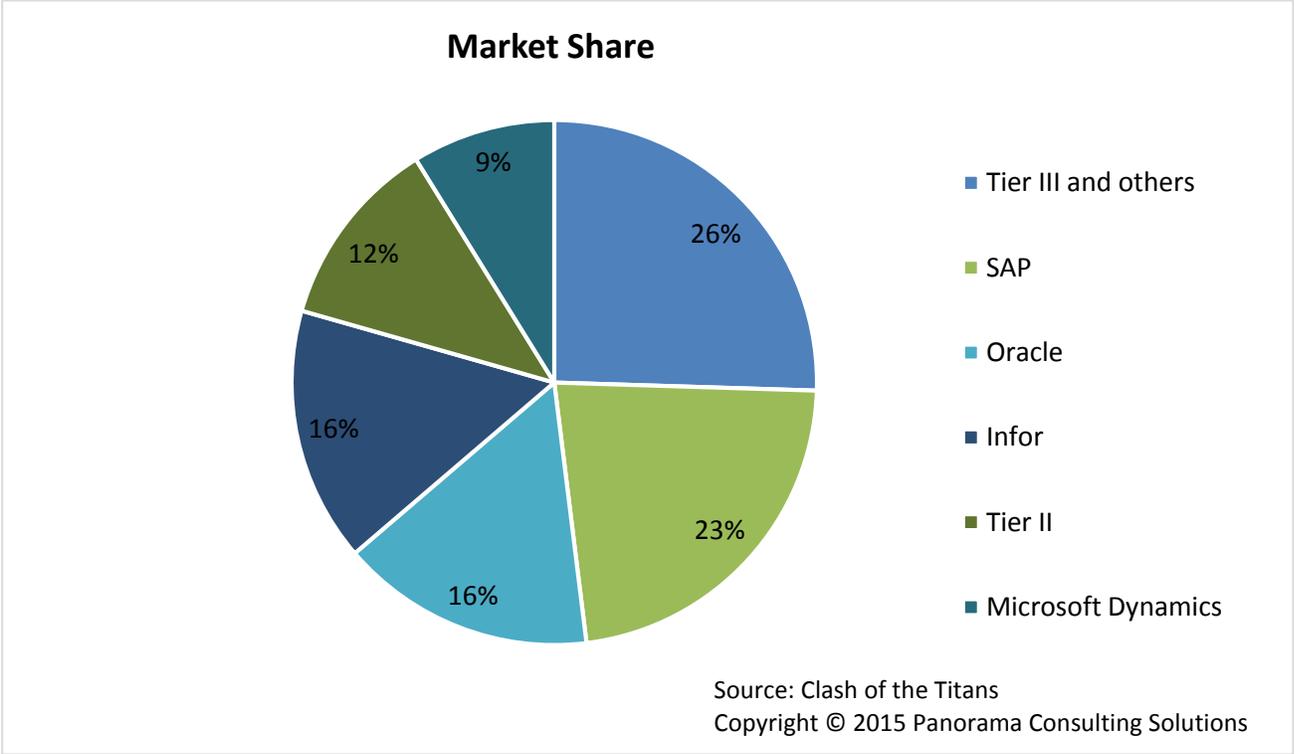
Other major areas of investment include user experience and data science. Infor has pioneered a revolution in enterprise usability through its in-house creative lab, Hook & Loop, which has grown into one of the largest creative agencies in Manhattan since its inception in 2012. Staffed with "left-brain creatives," the team at Hook & Loop draws from unique and

eclectic backgrounds, like fashion design, digital animation, and storytelling, to re-imagine the experience of using enterprise software, helping customers move from forms-based, data intensive interfaces to beautiful, intuitive, touch-and-gesture-based experiences.

Recognizing that companies have enormous amounts of data but lack the knowledge and resources to make that data work for them, Infor also recently formed Infor Dynamic Science Labs to help embed science and machine learning directly into Infor applications. Based outside M.I.T. in Cambridge, MA, Infor has employed some of the best and most innovative data scientists to help customers uncover opportunities and recommend next steps that drive improvements in all areas of business, from recruiting and staffing to asset management and pricing.

Market Share

Clash of the Titans 2016 provides market share statistics based on the frequency each vendor was selected by organizations represented in our annual survey. The graph below shows the overall market share distribution for the time period from June 2014 to October 2015.



The data show that SAP holds 26-percent of total market share, Oracle holds 16-percent, Infor holds 16-percent and Microsoft Dynamics holds 9-percent. Tier II solutions represent 12-percent of the market, while Tier III and others represent 26-percent of the total market.

Listing and Selection Comparisons

Short-listing is the process of culling the long list of potential ERP vendors to between two and four potential solutions. Among the key data points in this report are the rates that SAP, Oracle, Microsoft Dynamics and Infor are short-listed and the rates that each vendor is selected after short-listing.

The data reveal that SAP is the most commonly short-listed ERP system of the four in our study (short-listed by 45-percent of respondents). SAP is followed by Oracle at 31-percent, Microsoft Dynamics at 18-percent and Infor at 8-percent

Rates of Being Short Listed	
Vendor	Frequency
SAP	45%
Oracle	31%
Microsoft Dynamics	18%
Infor	8%

After being short-listed, the popularity of the four vendors slightly shifts. SAP has the highest rate of selection after short-listing (21-percent) with Infor following closely at 19-percent, Oracle at 14-percent and Microsoft Dynamics at 9-percent. During the last few years, SAP has continued to hold the top position for selection after short-listing.

Selection Rates When Short-Listed	
Vendor	Frequency
SAP	21%
Infor	19%
Oracle	14%
Microsoft Dynamics	9%

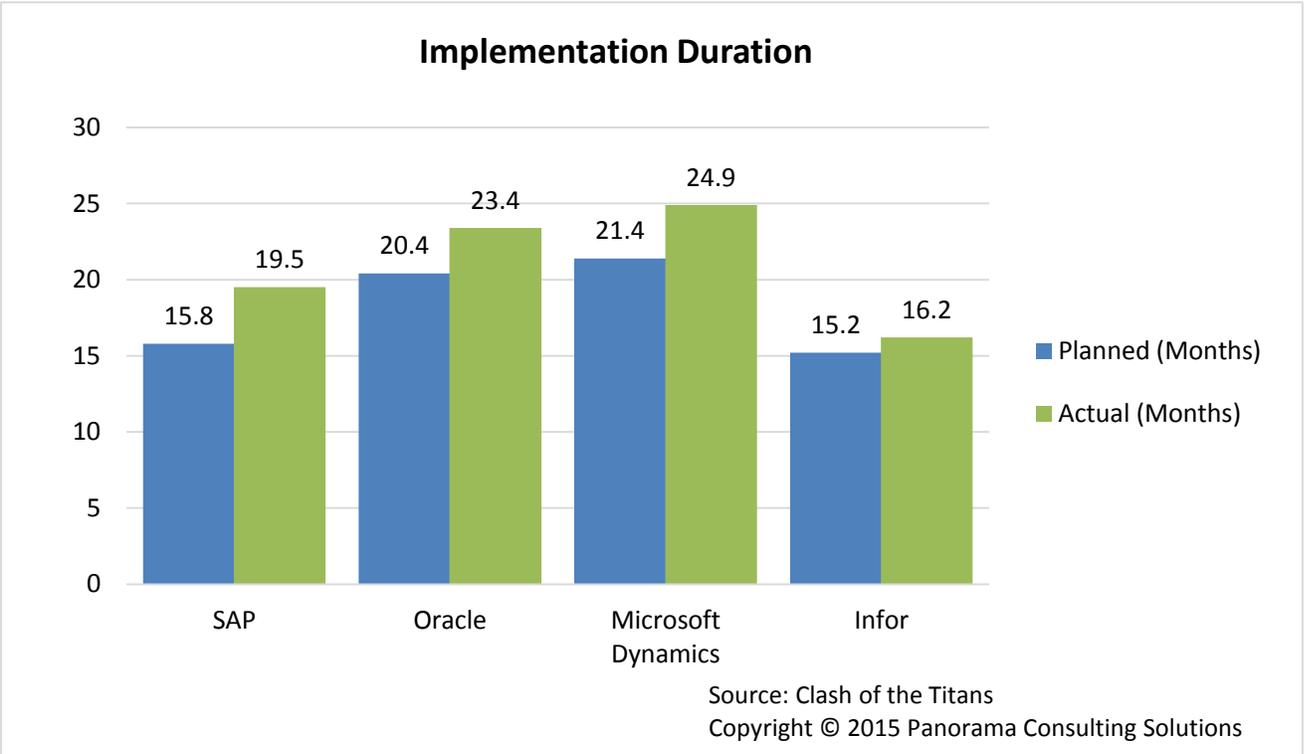
The fact that SAP is short-listed at such a high rate suggests that its name recognition and widespread use persuade organizations to consider SAP solutions. While both the short-listing and selection rates are strong for SAP, there is no evidence that every organization makes the right decision by choosing SAP. Many organizations simply do not have the proper methodologies or skillsets in place to effectively assess ERP systems. Rather than considering these findings to be indicative of the suitability of the product offerings, it is useful to view them as broader data regarding trends in the sales cycle experienced by the four vendors.

Implementation Duration

Implementation duration can be directly correlated to project scope, resource availability, the type of software purchased and the fit and functionality of that software. Further affecting duration are the number of solutions that SAP, Oracle, Microsoft Dynamics and Infor each provide for different verticals, industries and needs as well as the levels of customization each organization chooses.

Compared to our previous report, each of the four vendors increased in implementation duration. Microsoft Dynamics implementations, which averaged 12.5 months in 2013, increased to 24.9 months this year. Oracle implementations, which averaged 22.5 months in 2013, saw a slight increase to 23.4 months, as did SAP from 18.5 months to 19.5 months. A small increase in implementation duration may be attributed to changes in project scope and resource availability. More significant increases may be attributed to unclear requirements or excessive customization.

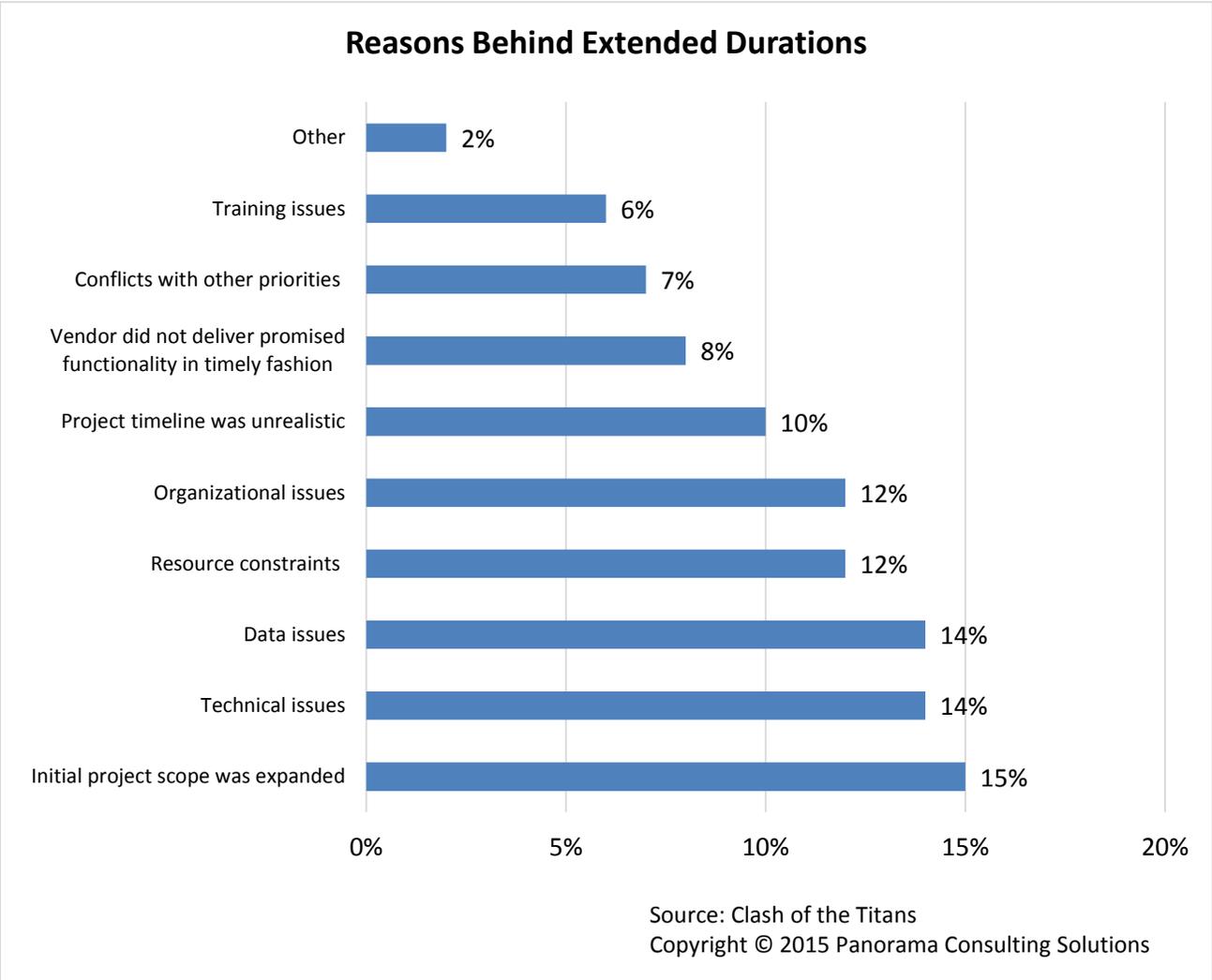
This year, Infor has the shortest overall implementation time (16.2 months), followed by SAP at 19.5 months, Oracle at 23.4 months and Microsoft Dynamics at 24.9 months.



Please note that implementation duration periods begin at the time of purchase of the software and end upon full functionality. Several variables affect implementation duration, including scope, size and complexity of the organization implementing the software as well as the specific solution and deployment model chosen.

Extended Durations

The most common reason for extended durations is the extension of initial project scope (15-percent). Respondents also indicated that technical issues and data issues contributed to project delays. These are common issues suffered by organizations that rush into implementation without taking the time to properly plan and set realistic expectations.

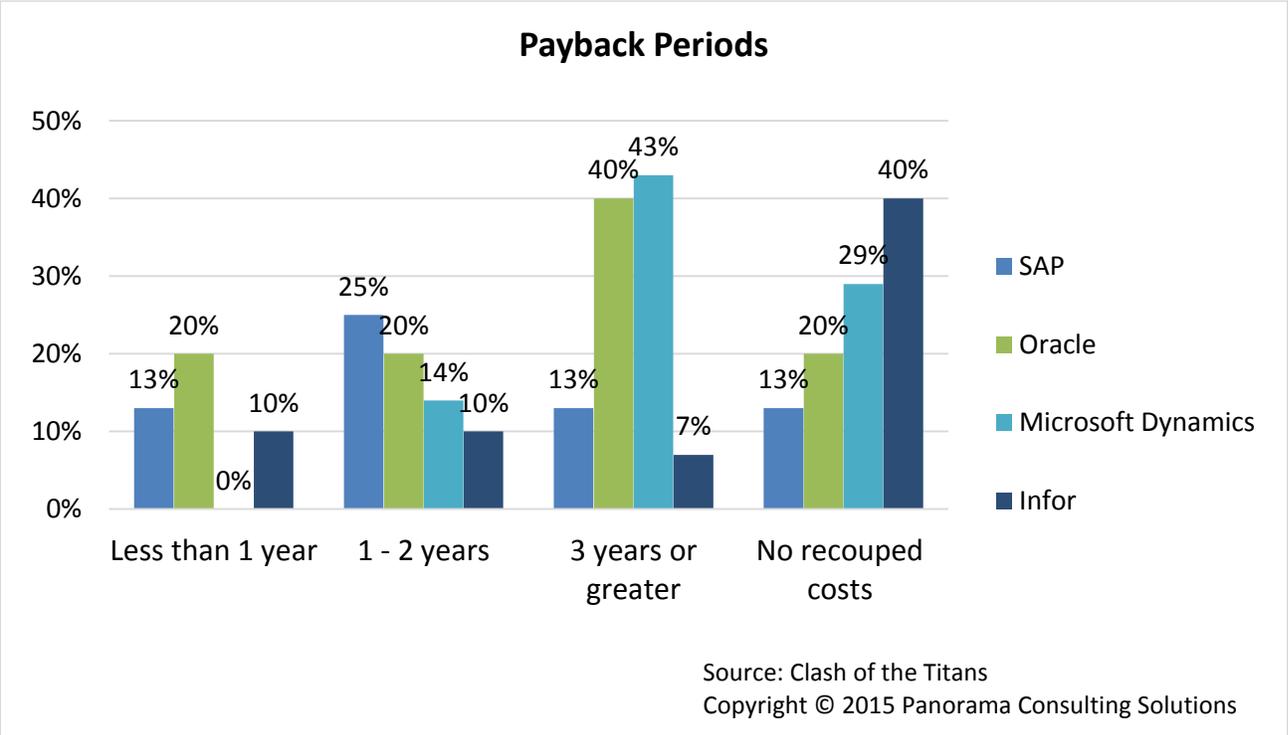


While the top reason for extended durations continues to be the extension of project scope, this percentage has decreased during the past few years. This may indicate that more organizations are investing time in project planning which ensures that the scope of all project components, including organizational change management, are considered upfront.

Payback Periods

Payback is defined as the point in time when the organization recoups its initial investment on the project. This metric can only be determined if key performance indicators (KPIs) and baseline measurements are put into place prior to implementation.

Panorama’s research shows that payback typically happens after three years. It takes time for people to learn a new system and use all of its functionality so it may take just as long to realize benefits.



Please note that numbers do not always add up to 100-percent because not every respondent answered every question.

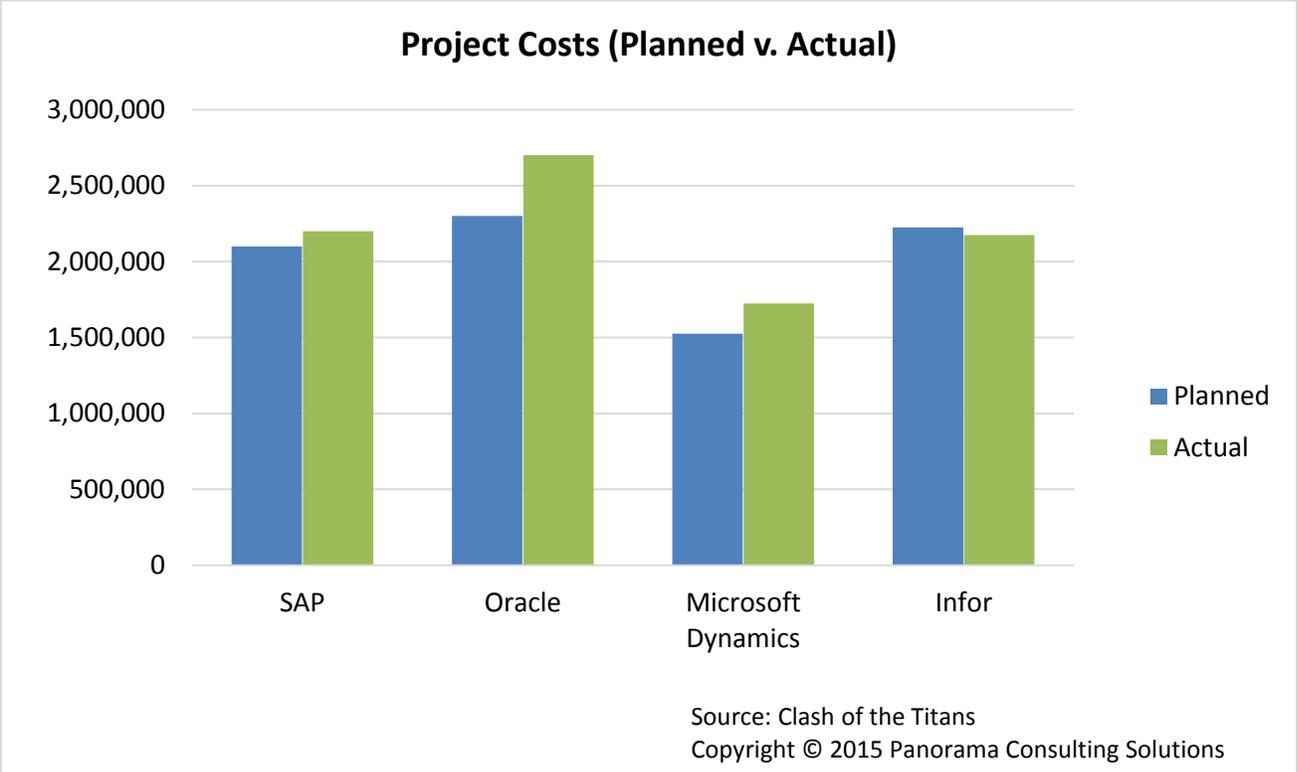
The vendor with the most respondents receiving payback in less than a year is Oracle (20-percent), followed by SAP (13-percent). However, compared to SAP, Oracle has a higher percentage of implementations that take three years or more to provide payback. A large percentage (40-percent) of organizations implementing Infor reported no recouped costs, and a large percentage (43-percent) of organizations implementing Microsoft Dynamics reported three years or more until recouped costs.

Significant customization may contribute to long payback periods, while using out-of-the-box functionality and best practices with minimal customization can result in shorter payback periods.

Project Costs

Organizations that plan for all components of a successful implementation will reduce their risk of budget and timeline overruns or increased resource and staffing needs.

SAP, Oracle and Microsoft Dynamics projects all show an increase between planned and actual total cost of ownership, while Infor implementations show a decrease.

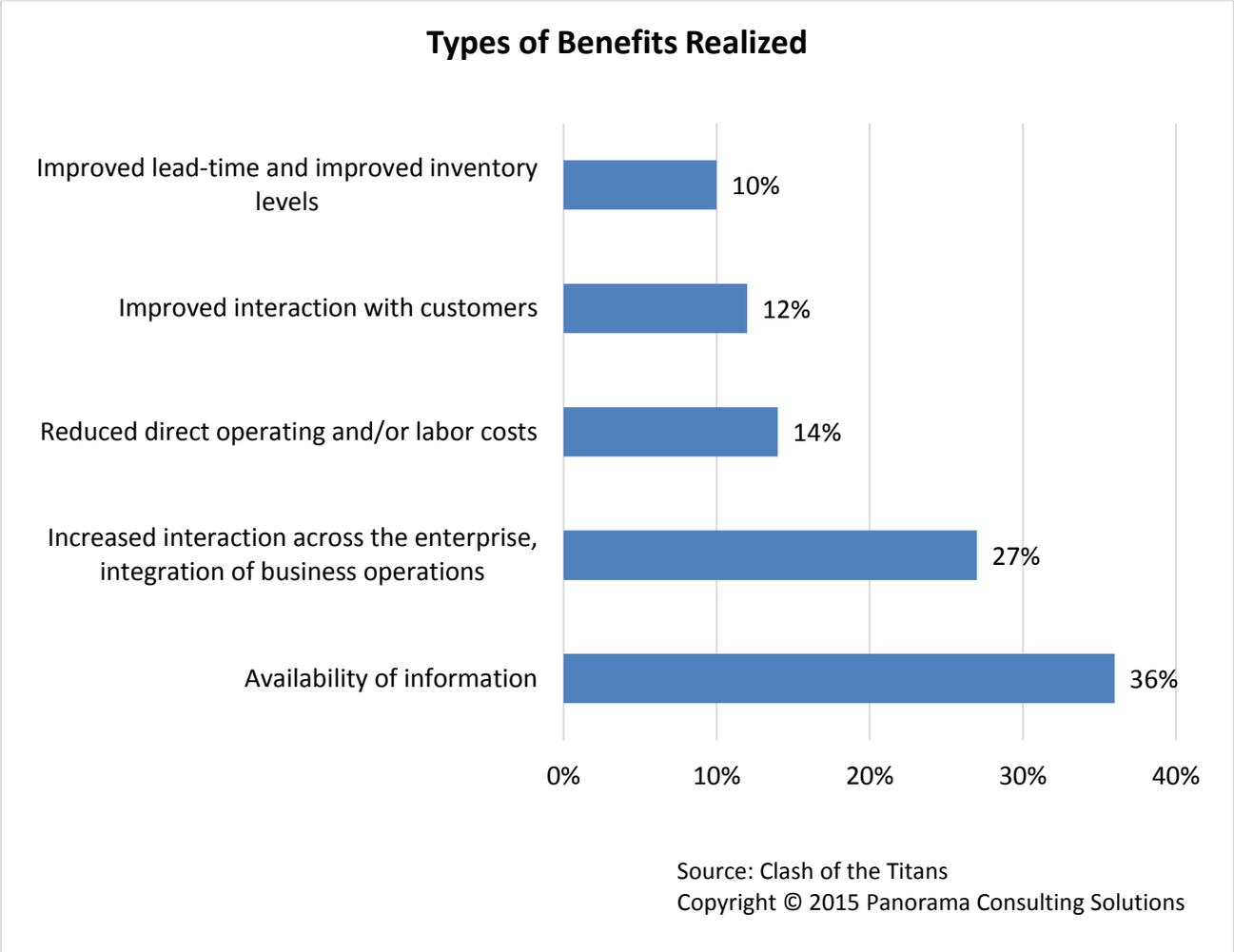


SAP has the smallest delta between planned and actual total cost of ownership, with respondents reporting only a 5-percent increase. Oracle customers reported the largest delta (17-percent), and Microsoft Dynamics’s customers reported a 13-percent delta between planned and actual costs. Oracle implementations may be more likely to go over budget due to the software’s complexity and extended functionality. Organizations tend to struggle with outlining module and customization costs in the planning process.

In terms of actual total cost of ownership, Oracle is the most expensive (\$2.7 million), followed by SAP (\$2.2 million), Infor (\$2.1 million) and Microsoft Dynamics (\$1.7 million). Since 2013, the cost to implement Oracle has increased from \$2.25 million, while the cost to implement SAP has decreased from \$2.55 million, and the cost to implement Microsoft Dynamics has decreased from \$1.8 million.

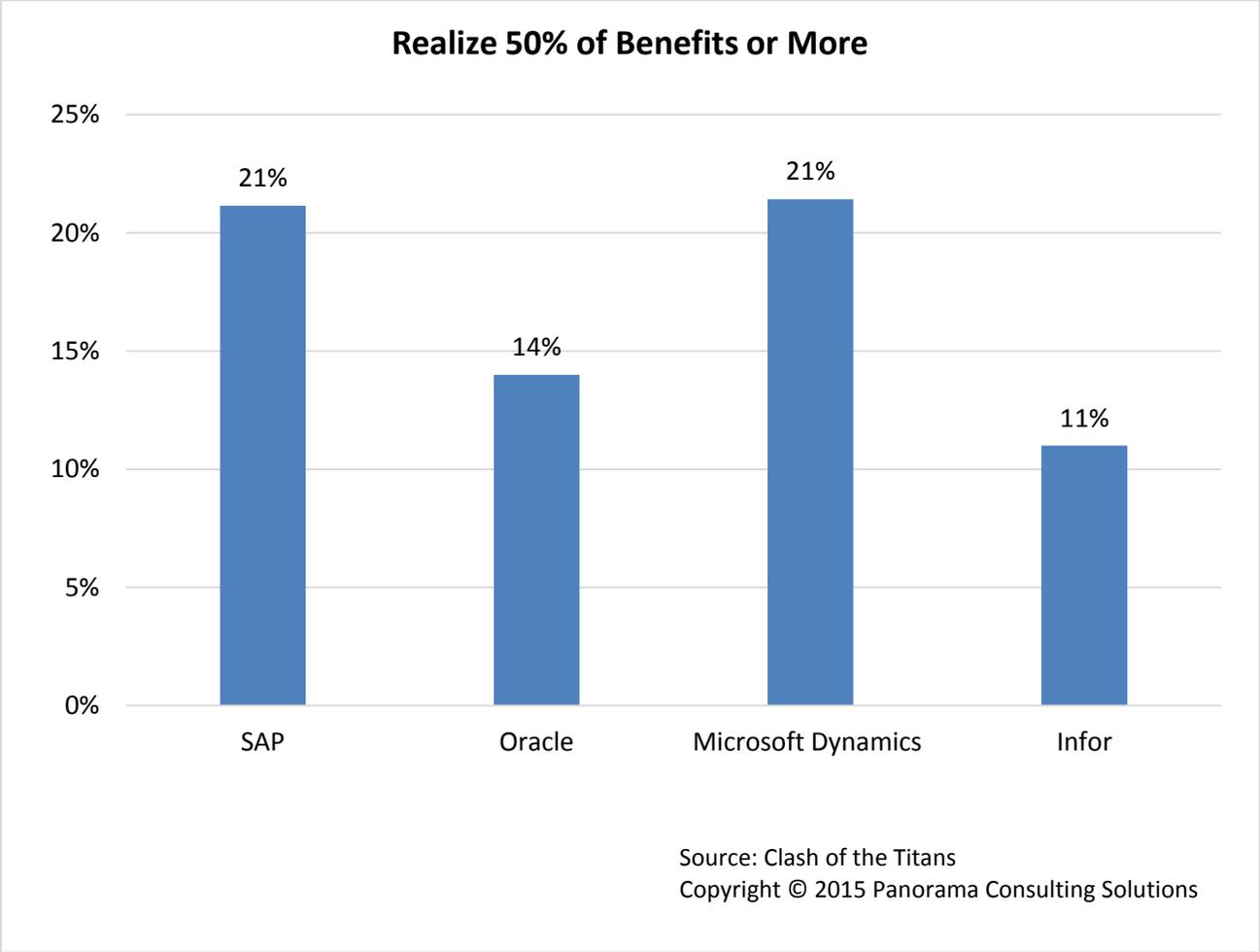
Benefits Realization

Benefits realization statistics reflect the measurable benefits achieved versus the measurable benefits projected in each respondent’s business case. The following graph depicts the specific benefits that organizations received from their ERP implementations.



Since 2013, there has been a 14-percent increase in organizations realizing the benefit of “increased interaction across the enterprise.” However, there has been a 6-percent decrease in organizations realizing the benefit of “availability of information.” Organizations that outline the types of benefits they expect can more accurately measure these benefits following implementation.

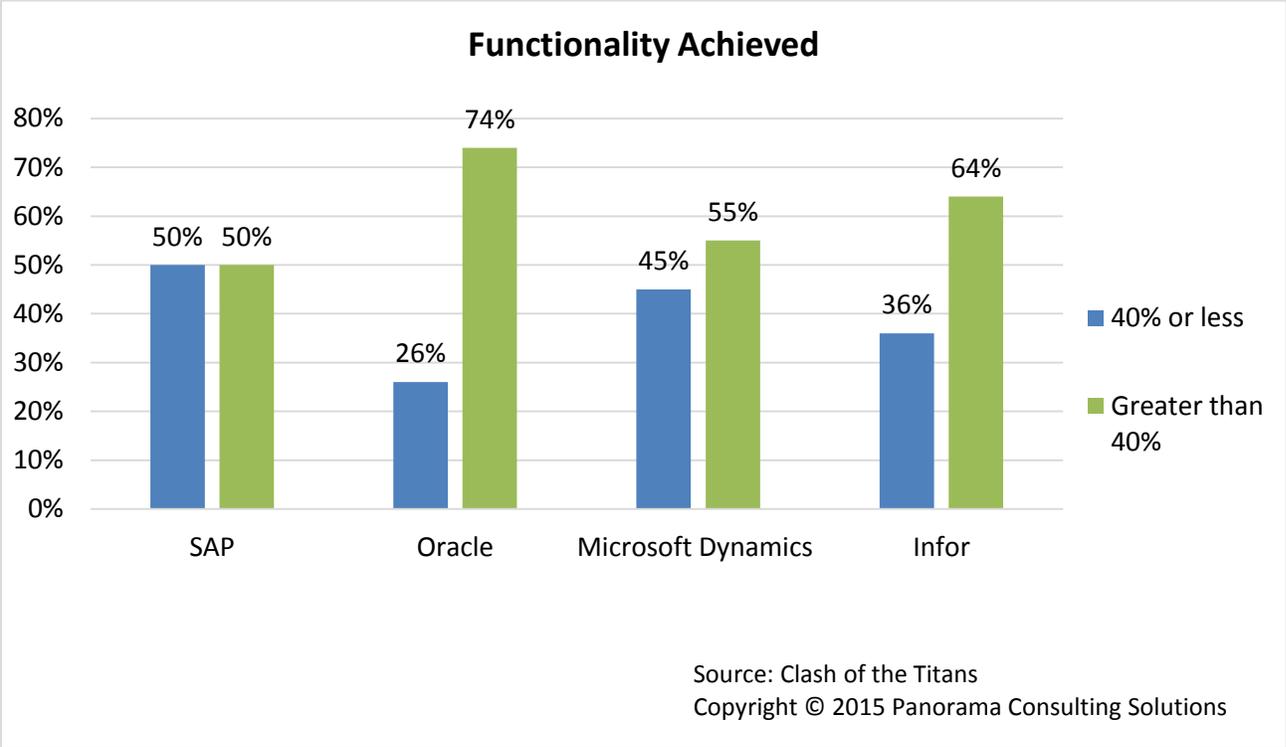
As seen in the graph below, only 21-percent of SAP implementations, 21-percent of Microsoft Dynamics implementations, 14-percent of Oracle implementations and 11-percent of Infor implementations achieve 50-percent or more of expected business benefits.



These findings highlight the importance of developing a business case and benefits realization plan in order to accurately measure what benefits are being realized and at what rate. These documents are critical for accurately measuring success or failure as they outline expected return on investment and help organizations determine next steps.

Functionality

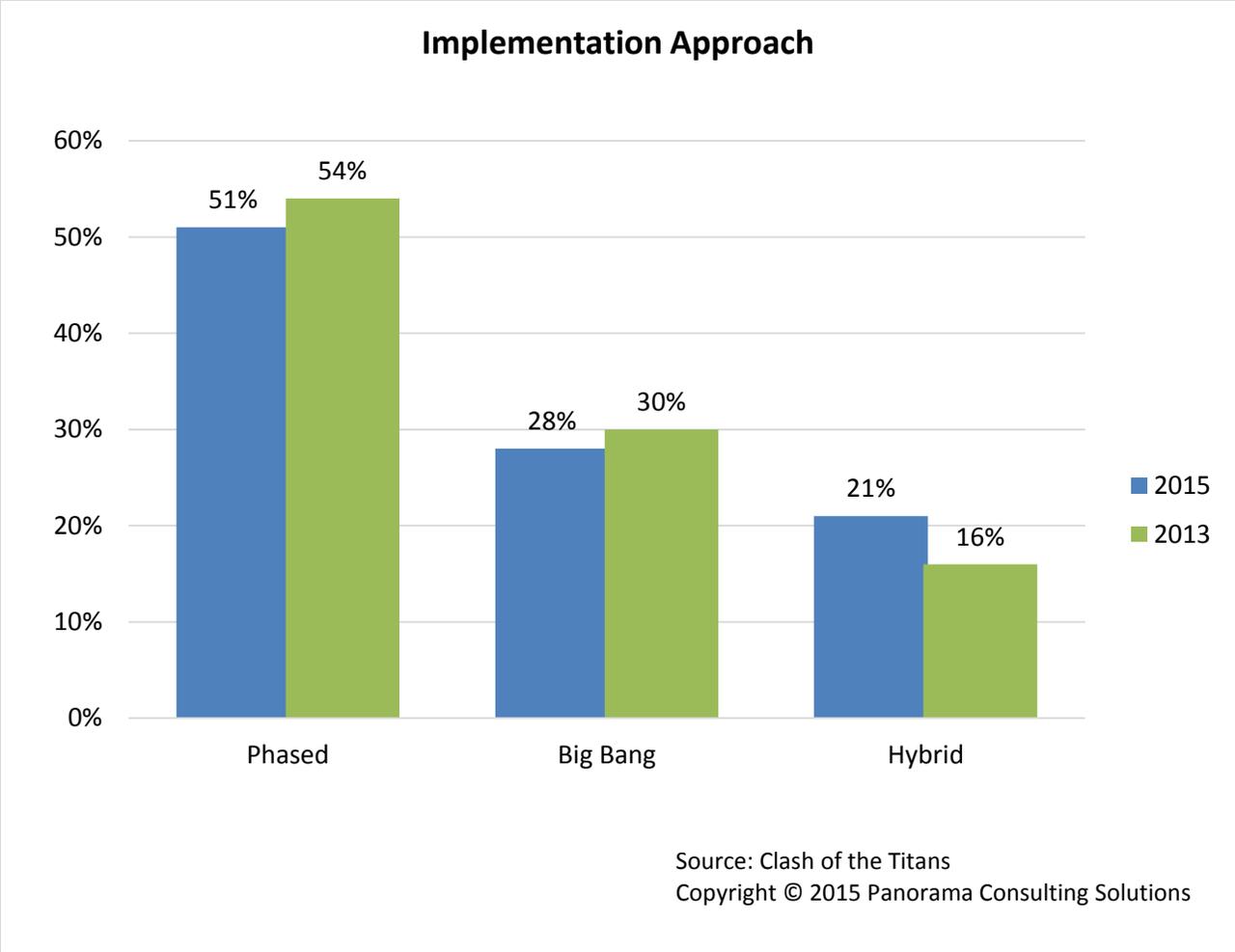
It is rare for organizations to achieve 100-percent functionality of their ERP software, especially without consistent and customized training. The graph below shows the level of software functionality achieved by organizations implementing SAP, Oracle, Microsoft Dynamics or Infor.



Of the four titans, Oracle and Infor have the highest percentage of respondents indicating that they achieved functionality of greater than 40-percent of the modules implemented. SAP has the lowest percentage of respondents indicating that they achieved this level of functionality. When organizations achieve a low level of functionality, this could be a result of the time it takes for end-customers to adapt to new software.

Implementation Approach

To minimize operational risk and decrease change resistance among their employees, many organizations choose to implement their ERP software in phases. Other organizations choose a “big bang” approach and implement the whole system at once, regardless of module, location or department, and some use a hybrid approach, which combines these two extremes.

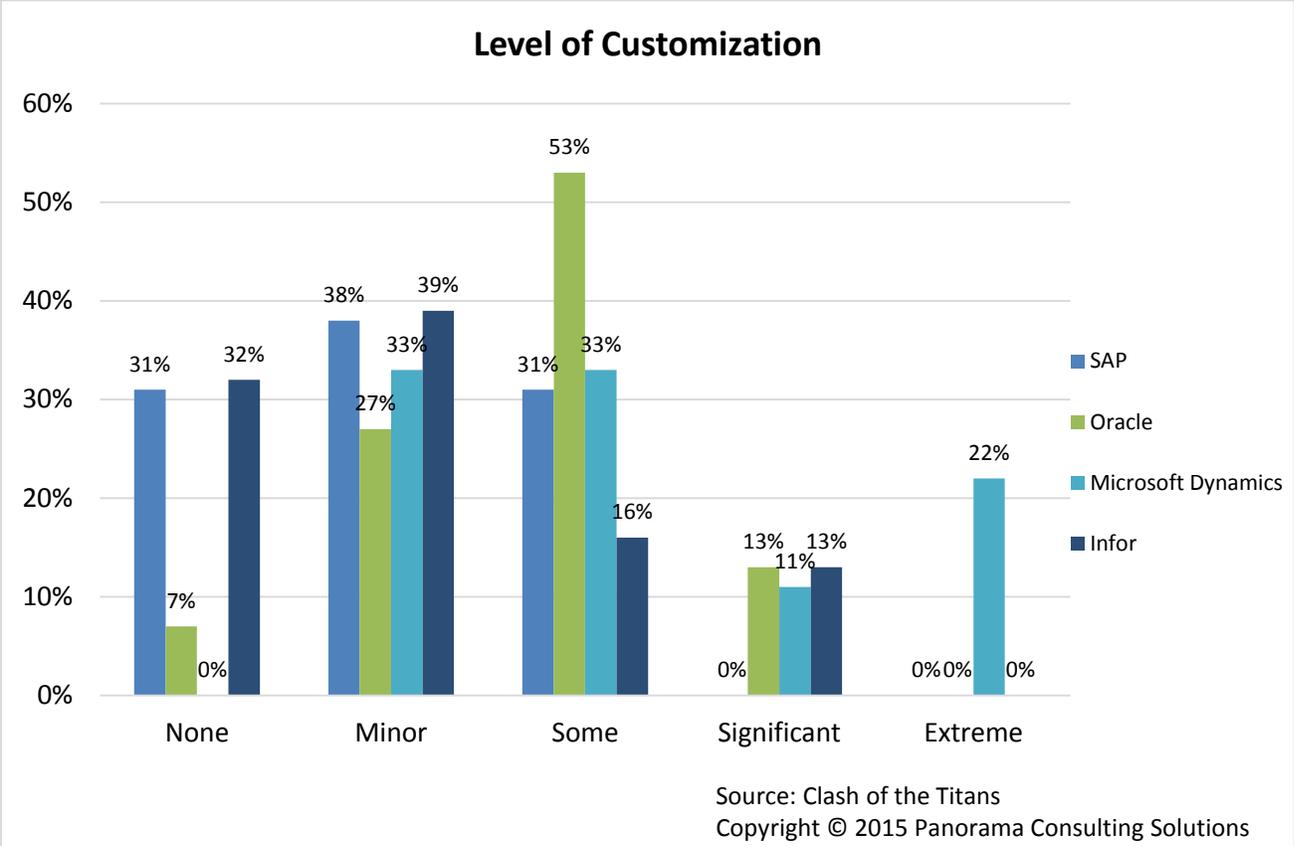


As seen in the graph above, most organizations use either a phased approach (51-percent) or a “big bang” approach (28-percent). The hybrid approach, which combines these two extremes, increased by 5-percent since 2013. There is no one-size-fits-all for implementations. The approach used should be based on each organization’s preferred risk tolerance.

Customization

The majority of respondents indicated that their chosen ERP system underwent at least some customization. While most organizations will customize some aspect of their ERP systems, it is ideal to leverage as much out-of-the-box functionality as possible. SAP customers seem to leverage more of the out-of-the-box functionality while Microsoft Dynamics customers tend to choose more customization.

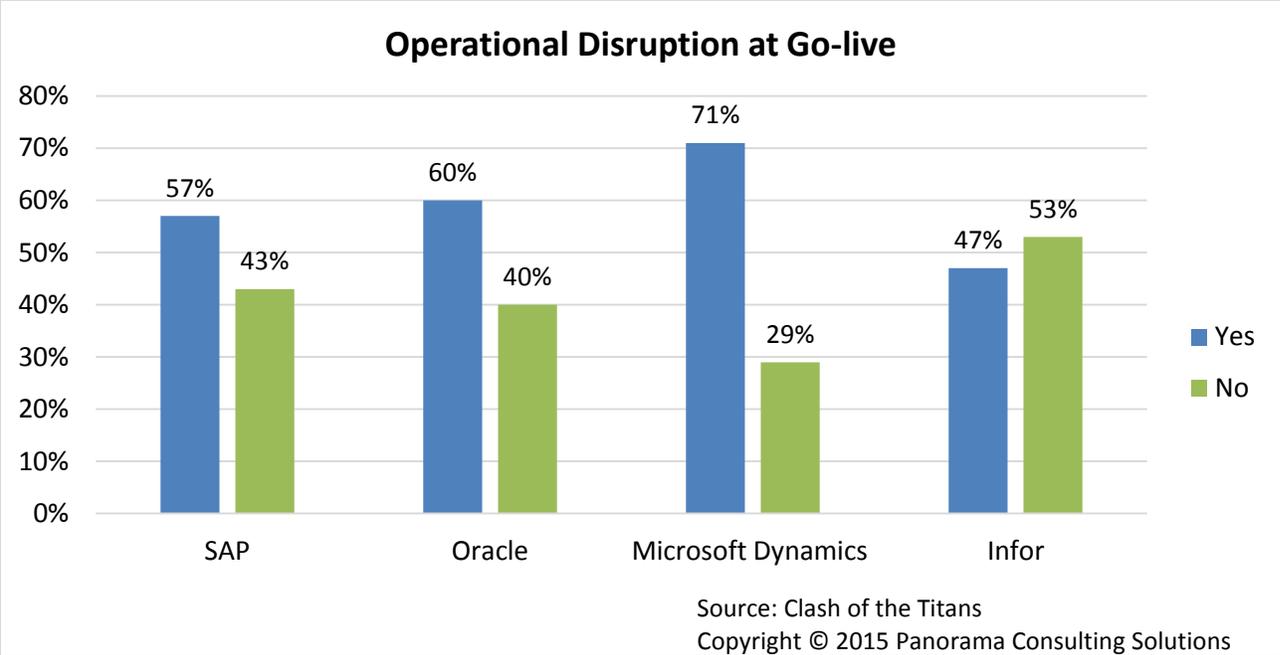
As seen in the graph below, organizations implementing Microsoft Dynamics reported the highest levels of customization with 33-percent reporting significant or extreme customization. Organizations implementing Infor reported the lowest levels of customization with 71-percent of responds reporting minor or no customization.



High levels of customization may indicate that organizations are failing to perform proper due diligence when evaluating systems against their business requirements. This can lead to the selection of a system that is not the best fit for the organization. Organizations should document detailed business requirements, including current state processes, in order to evaluate each system against their business needs.

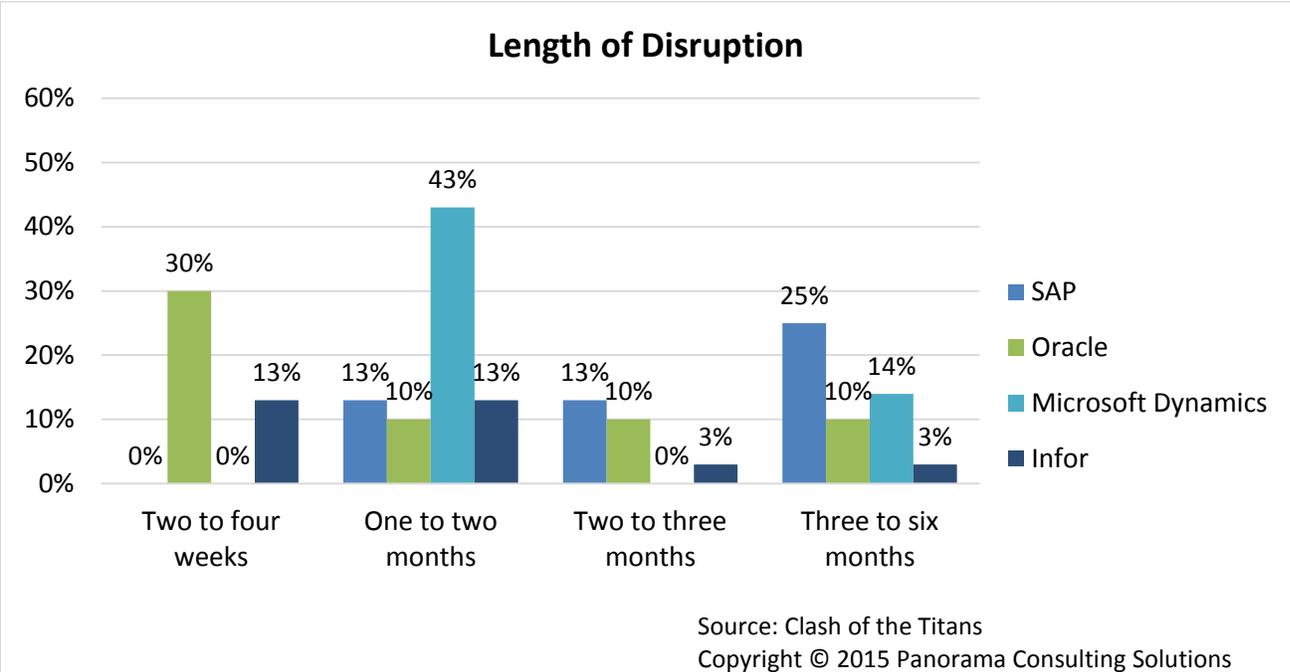
Operational Disruption

For our purposes, operational disruption is defined as any material disruption to business processes once an ERP system goes live, such as inability to ship product or close the books. Unfortunately, operational disruption is quite common among organizations implementing ERP software today, especially those that do not engage in pre-implementation planning or take the time to define current and future state business processes.



Panorama’s research shows that organizations implementing Microsoft Dynamics have the highest occurrence of operational disruption at go-live (71-percent). This is followed by Oracle at 60-percent, SAP at 57-percent and Infor at 47-percent.

As seen in the graph below, a significant number of Microsoft Dynamics operational disruptions lasted one to two months (43-percent), while a significant number of Oracle implementations lasted only two to four weeks (30-percent).

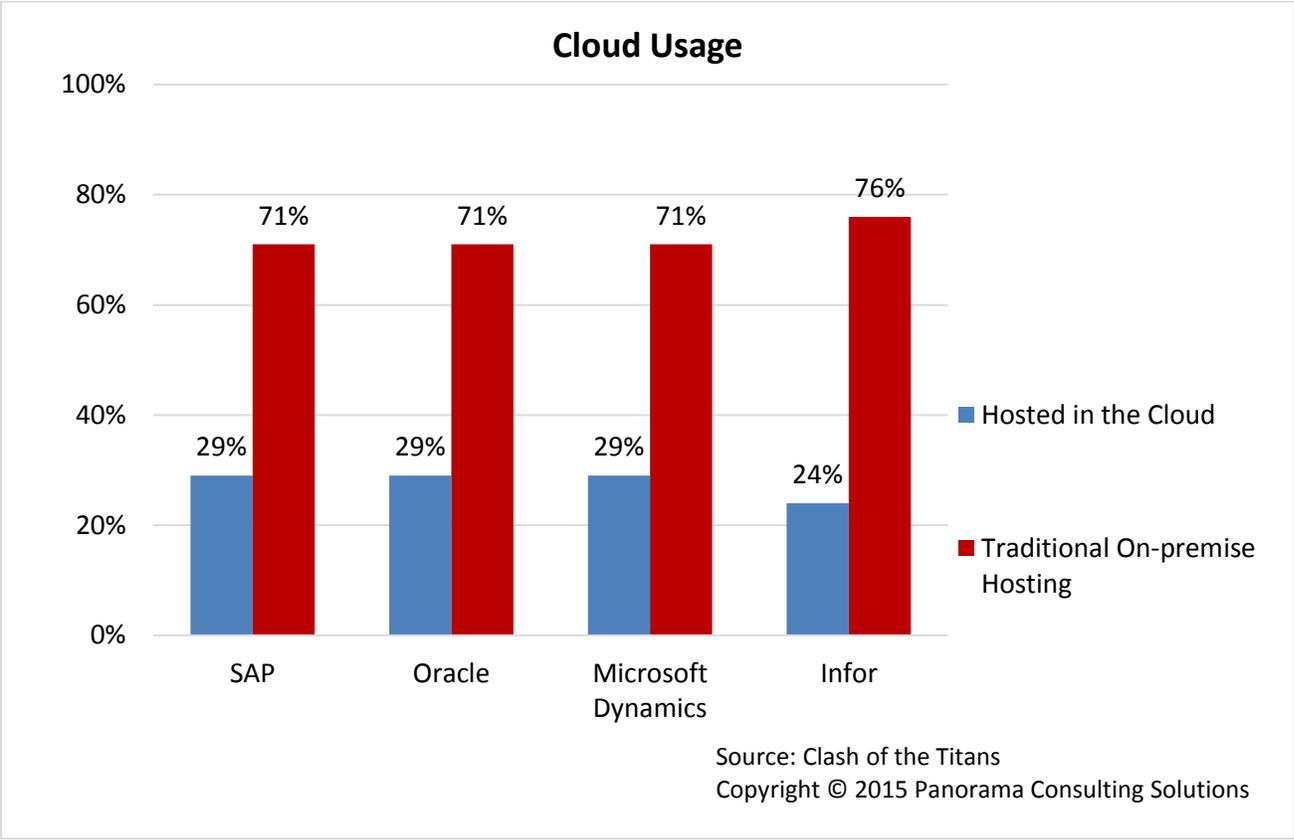


Most operational disruptions are due to process and organizational issues within the implementing organization and not the software itself. To mitigate the risk of operational disruption (and decrease the length of the disruption), organizations must plan for adequate training and organizational change management to properly communicate changes to end-users, regardless of which ERP software they choose to implement.

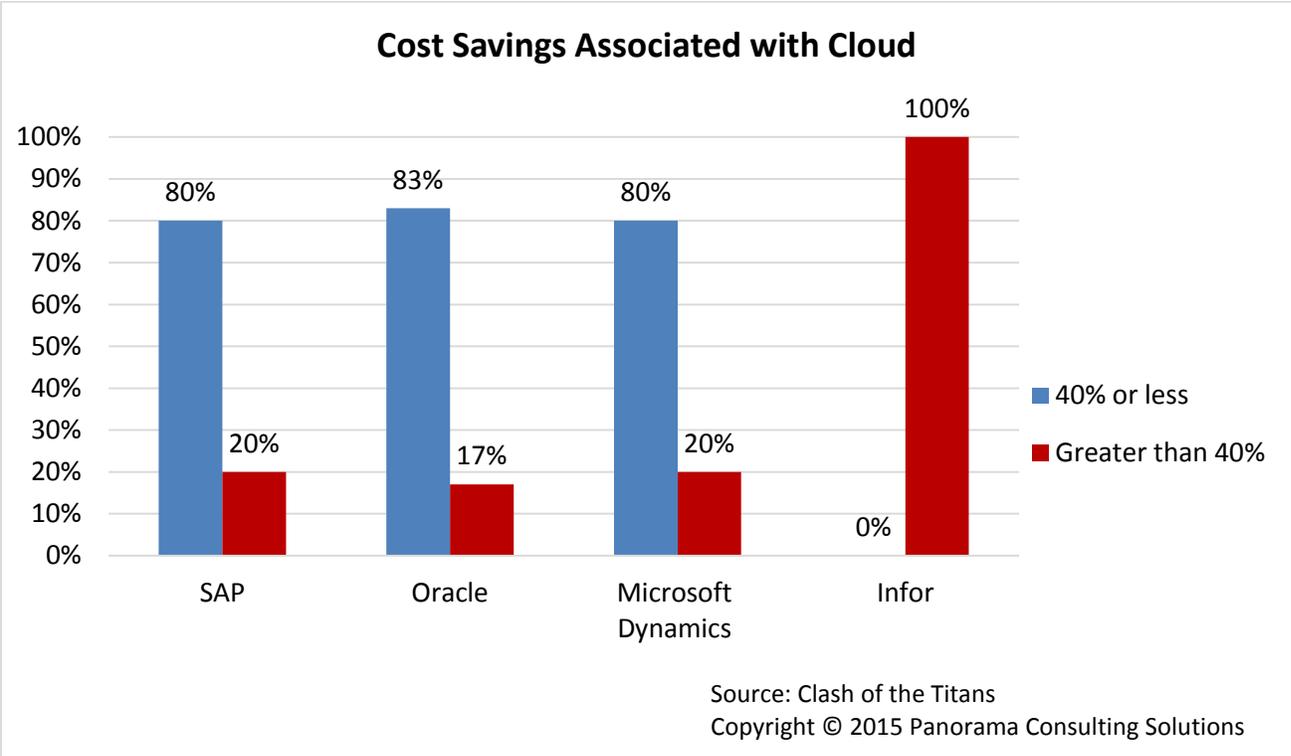
Cloud Usage

Although cloud ERP software is becoming increasingly popular in the enterprise software market, Panorama’s research shows that a relatively low percentage of SAP, Oracle, Microsoft Dynamics and Infor customers implement their software in the cloud. Concerns about data security often limits the cloud adoption rate.

In 2013, SAP had the lowest percentage of customers indicating cloud usage (18-percent). This year, 29-percent of SAP customers report cloud usage. While still small, the percentage of organizations moving to the cloud appears to be increasing, which may be due to the fact that organizations’ perceptions of the cloud is changing as they no longer view it as a riskier option than on-premise deployments.



Among SAP, Oracle and Microsoft Dynamics customers, few organizations realize greater than 40-percent cost savings from cloud usage. However, 100-percent of Infor customers realize this level of cost savings.



These findings are in line with data from Panorama’s *2015 ERP Report* where SaaS and cloud adoption showed an increase over the previous year. The report revealed similarly low cost savings associated with SaaS and cloud adoption.

Summary

Summary Data				
Vendor	SAP	Oracle	Microsoft Dynamics	Infor
Market Share	23%	16%	9%	16%
Short-list Rates	45%	31%	18%	8%
Selection Rates After Short-listing	21%	14%	9%	19%
Implementation Duration (months)	19.5	23.4	24.9	16.2
Total Cost of Ownership	\$2.2 million	\$2.7 million	\$1.7 million	\$2.1 million
Payback Period (months)	9	21	22	24
% Realizing 50% or More Benefits	21%	14%	21%	11%
Disruption at Go-live	57%	60%	71%	47%

SAP

Below are some of the highlights of SAP's suite of solutions as they relate to Oracle, Infor and Microsoft Dynamics:

- Largest share of the market
- Highest short-listing rate
- Highest selection rate when short-listed
- Largest delta between planned and actual implementation duration

Oracle

Below are some of the highlights of Oracle's suite of solutions as they relate to SAP, Infor and Microsoft Dynamics:

- Largest delta between projected and actual project cost
- Highest project cost
- Shortest length of operational disruption

Microsoft Dynamics

Below are some of the highlights of Microsoft Dynamics' suite of solutions as they relate to SAP, Oracle and Infor:

- Smallest share of the market
- Lowest selection rate when short-listed
- Longest implementation duration
- Lowest project cost

Infor

Below are some of the highlights of Infor's suite of solutions as they relate to SAP, Oracle, Microsoft Dynamics and Infor:

- Lowest short-listing rate
- Most predictable actual implementation duration
- Most predictable actual project costs
- Greatest functionality realized
- Lowest occurrence of operational disruption

Conclusion

Organizations implementing SAP, Oracle, Microsoft Dynamics or Infor systems continue to face extended durations, unexpected project costs, operational disruptions and relatively low amounts of quantifiable benefits realization. These issues are not necessarily related to the software or vendor, but instead, are more influenced by the implementing organization itself. Organizations that fail to adequately prepare for an ERP implementation, in terms of people and processes, will always struggle to achieve a return on investment from on their ERP software – no matter how sophisticated the system.

While we present our ***Clash of the Titans*** reports to provide a deep-dive into implementation experiences specific to these four vendors, organizations should not assume that these are the only vendors worth investigating. Instead, organizations in the market for new enterprise software should engage the services of an independent ERP consulting firm to help them define their specific business requirements, ensure the vendors are able to speak to these requirements, and weigh the pros and cons of vendors and systems against their organizational goals.

About Panorama Consulting Solutions

Panorama Consulting Solutions specializes in enterprise consulting, infrastructure consulting and enterprise resource planning (ERP) consulting for mid- to large-sized, private and public sector organizations across the globe. One-hundred percent independent of affiliation, Panorama helps firms evaluate and select ERP software, implements the software and facilitates all related organizational changes to ensure that each of its clients realize the full benefits of their ERP implementation. We also offer our clients IT strategy, business process reengineering, ERP staffing, sales assessments, energy fueling assessments, emergency/disaster fund management, independent verification and validation, project management oversight and expert witness testimony.

More information can be found on its website, Panorama-Consulting.com and Twitter feed, [Twitter.com/PanoramaERP](https://twitter.com/PanoramaERP).