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The 2014 Manufacturing ERP Report

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Introduction

In the early days of its inception, ERP software was originally developed to meet the unique requirements of manufacturing organizations. Although modern ERP systems are able to accommodate the functionality required of most industries, manufacturing organizations are still unique in their implementation approach and in the challenges they face.

Because of the complexity of manufacturing processes and the way these processes interact, manufacturing ERP implementations often cost more than implementations across all industries and often account for a greater percentage of organizations' annual revenues. Many manufacturing firms customize their ERP software in order to meet unique business requirements and this customization pushes implementation costs higher.

In recent years, the manufacturing industry has evolved. Our last manufacturing report identified a number of industry trends that have recently been turned upside down. For example, the manufacturing industry was struggling with the impact of globalization when we published our last manufacturing report in 2008, while in 2013, the manufacturing industry appears to be experiencing less outsourcing and an increase in domestic manufacturing.

The 2014 Manufacturing Report includes analysis of surveys conducted by Panorama Consulting between May 2012 and September 2013. The report focuses on the use of ERP software in the manufacturing industry and includes information on market share, reasons for implementing ERP, implementation duration, implementation cost and benefits realization. The study also includes data on payback period, customization and ERP modules deployed. Where applicable, each of these data points is compared with organizations across all industries.

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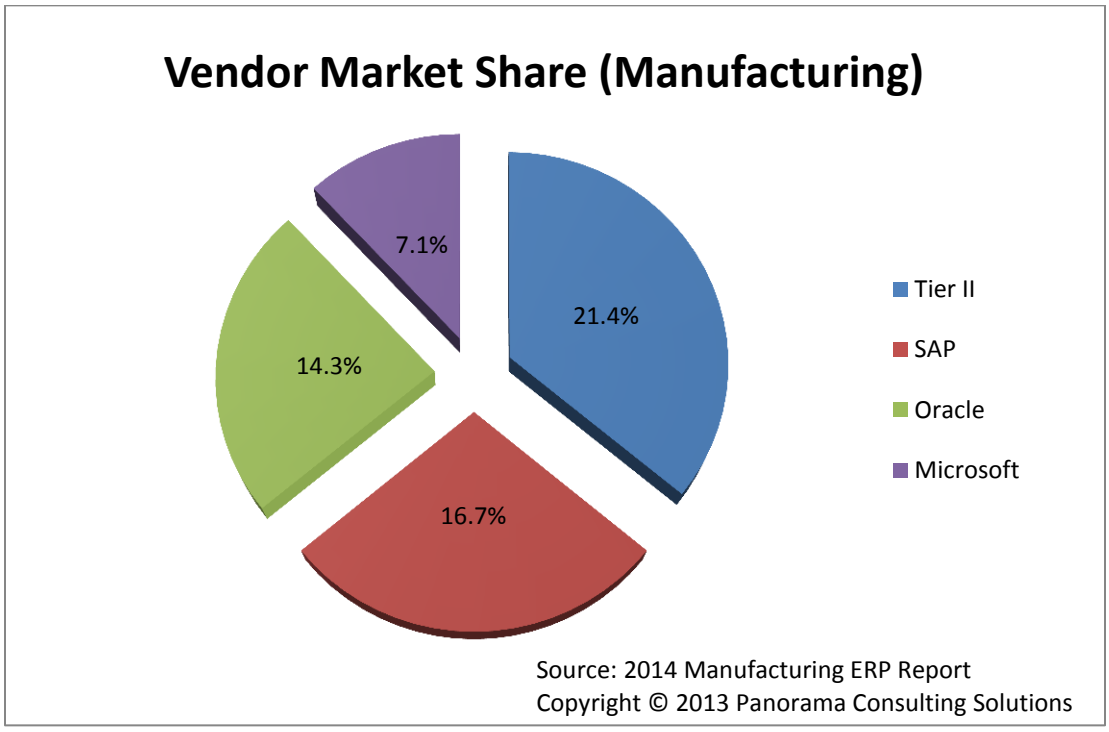
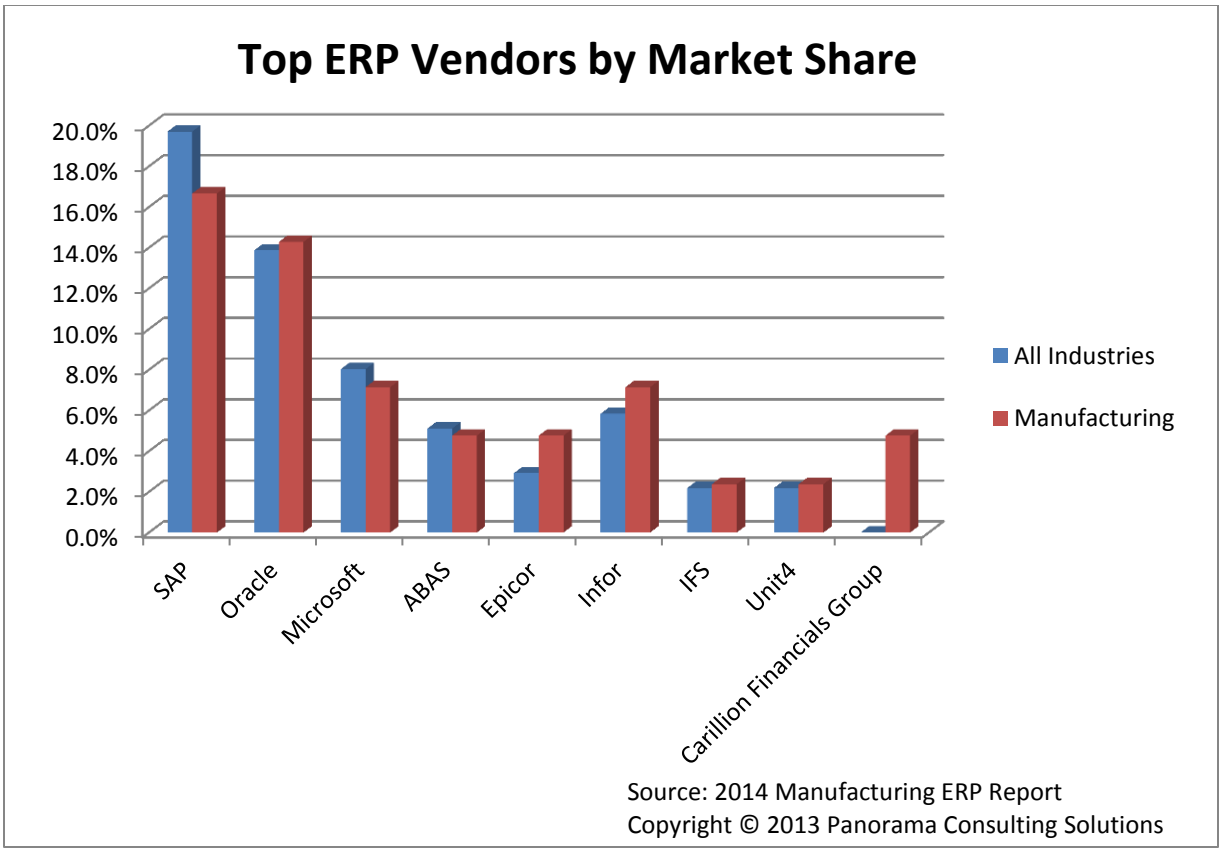
ERP Market Share

Panorama's ***2014 Manufacturing ERP Report*** provides market share statistics based on the frequency each vendor was selected by organizations represented in our survey. The chart below shows the overall market share distribution for the time period from May 2012 to September 2013:



SAP holds approximately 17-percent of the manufacturing ERP market. Oracle and Microsoft follow with about 14-percent and 7-percent respectively and Tier II solutions account for about 21-percent of the manufacturing ERP market.

The graph on the following page shows a more detailed breakdown of the top ERP vendors by market share for the manufacturing industry versus all industries:

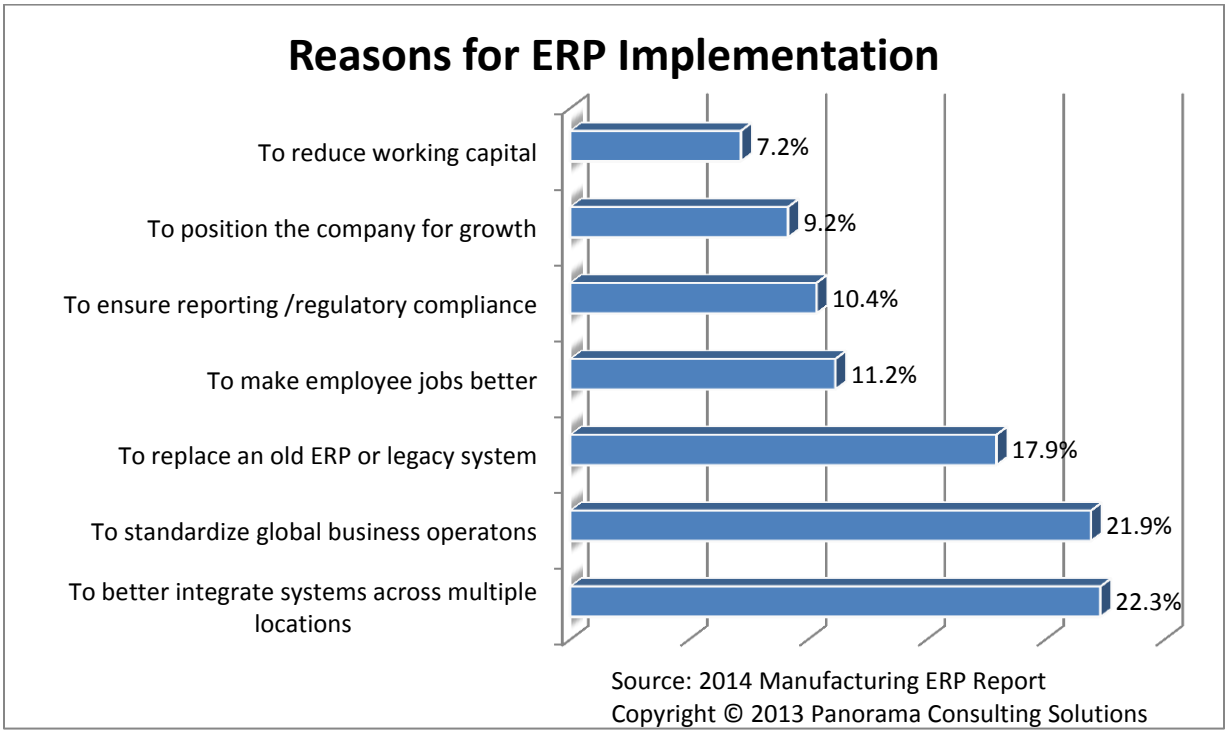


Vendor market shares for the manufacturing industry are very similar to vendor market shares for all industries as a whole. The main difference lies in the prominence of Tier II vendors in the manufacturing industry, where vendors such as Infor (7-percent), Epicor (5-percent) and ABAS (5-percent) have higher market shares than they do in other non-manufacturing industries.

Top Reasons for Implementing ERP Software

Not unlike organizations across all industries, manufacturing organizations have a variety of reasons for implementing ERP software. According to the study, system integration and operational standardization are the most common reasons that influence organizations to implement ERP software. Each of these reasons is cited by roughly 22-percent of respondents and is especially influential among larger scale manufacturing operations with multiple sites.

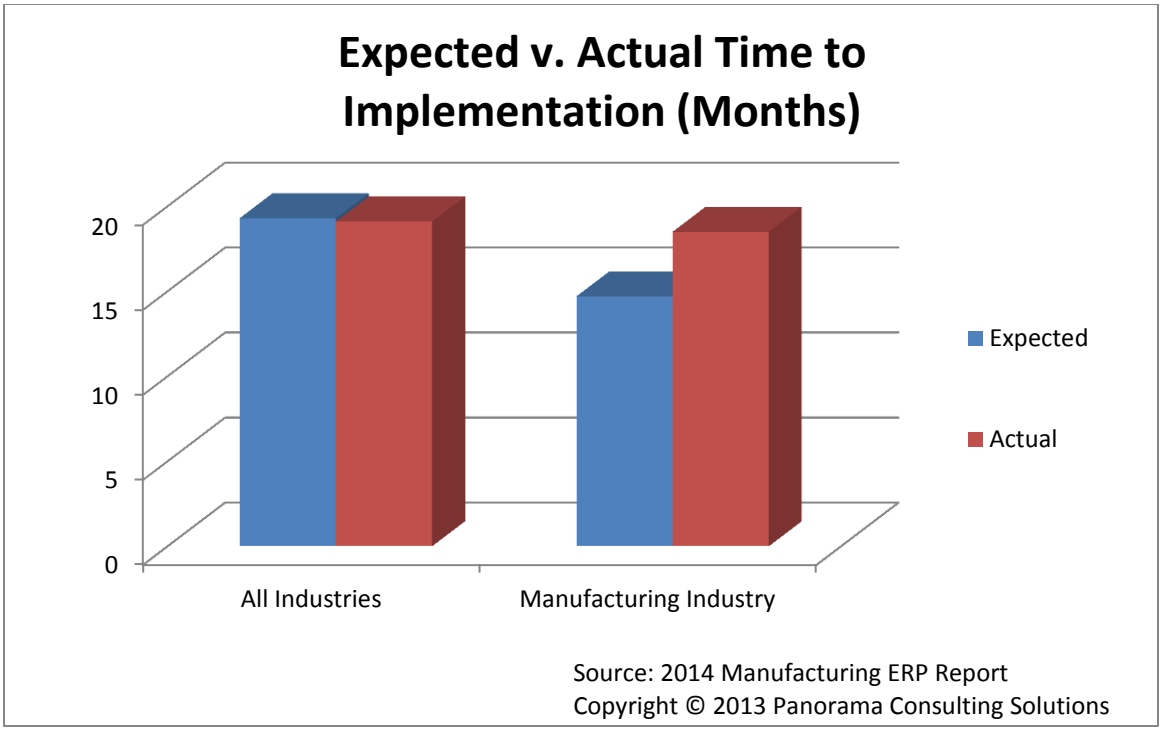
Replacement of legacy systems is also a common reason for implementing ERP software (17-percent). While not insignificant, company growth (9-percent) and reduction of working capital (7-percent) are the lowest reported reasons for manufacturing firms to implement ERP software.



It is not surprising that the business goals of many manufacturing firms include integrating systems across multiple locations, as more manufacturing organizations today are spread across multiple sites and/or multiple countries of operation.

Implementation Duration

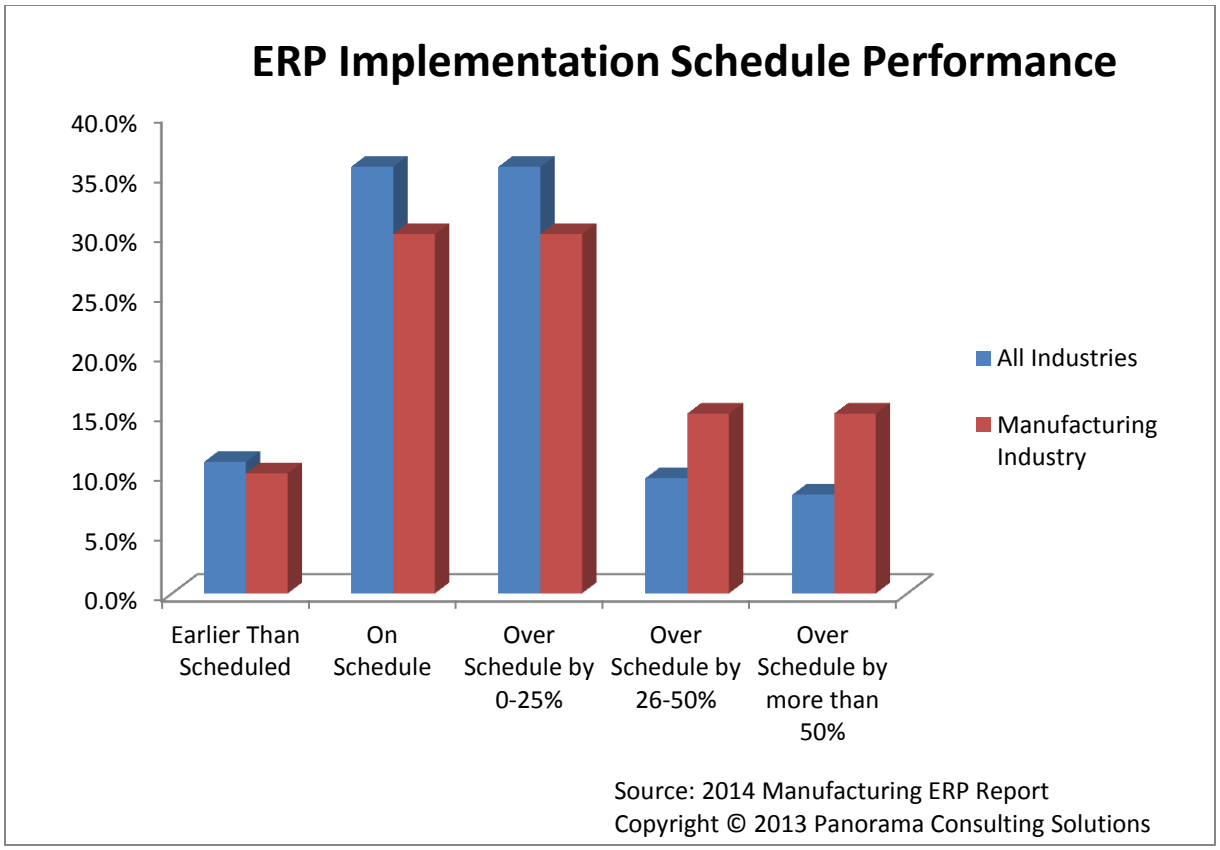
ERP implementation durations vary based on the size and scope of the implementing organization. Panorama's research reveals that the duration of ERP implementations in the manufacturing industry (18.5 months) is three-percent less than the duration of implementations across all industries (19.1 months).



Extended Durations

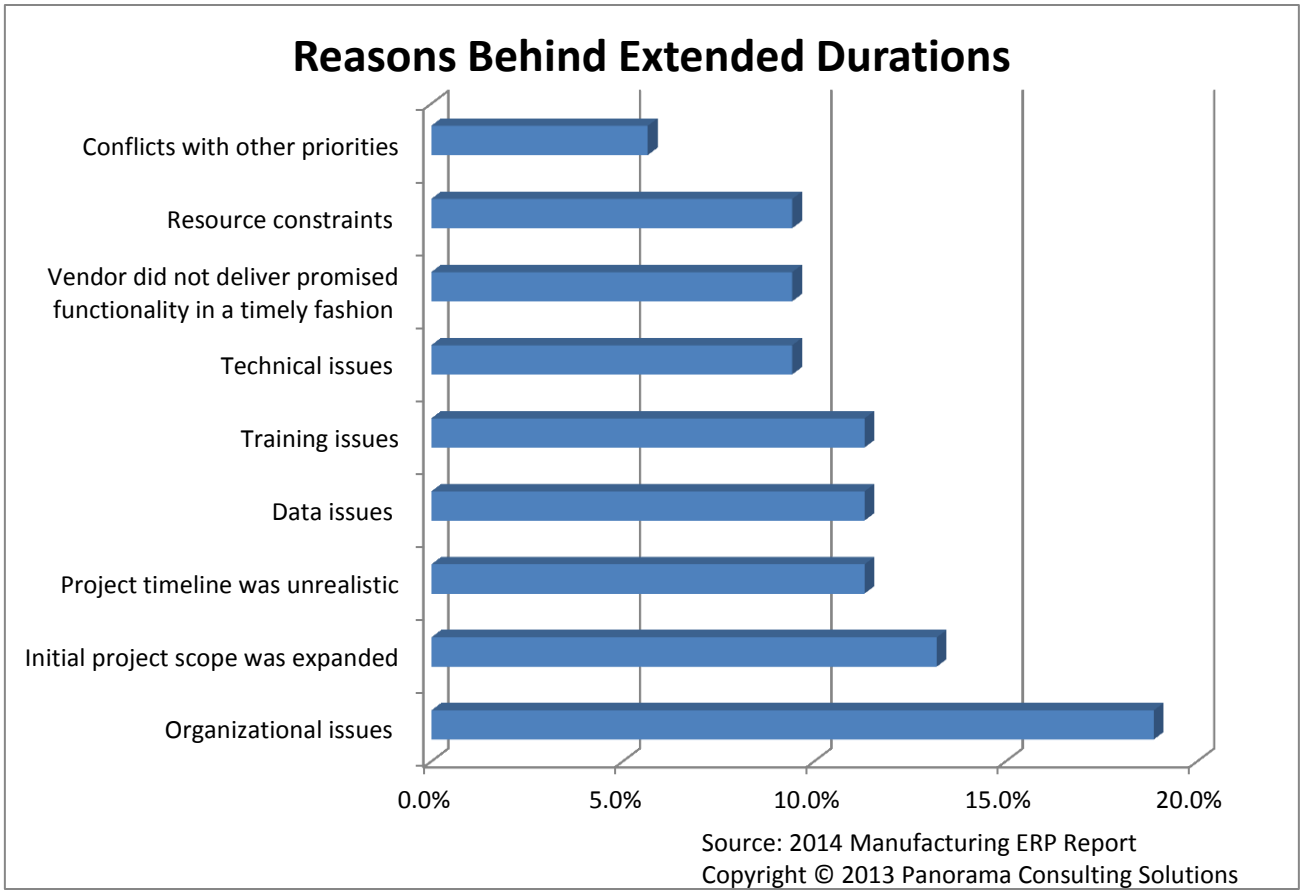
Despite the similarities in average actual implementation durations, the delta between expected and actual duration is larger among manufacturing organizations (3.8 months longer than planned) than it is among all industries (0.2 months shorter than planned). This data point underscores the importance of implementation planning in manufacturing organizations. Manufacturing firms tend to make unrealistically low estimations for expected duration (14.7 months). Companies across all industries, on the other hand, start off with an estimation that is much more in line with reality (19.3 months).

Nonetheless, when manufacturing organizations experience extended durations, they do so less frequently than organizations across all industries. As seen in the graph on the following page, 89-percent of implementations across all industries exceed expected duration while this is true of only 60-percent of manufacturing ERP implementations.



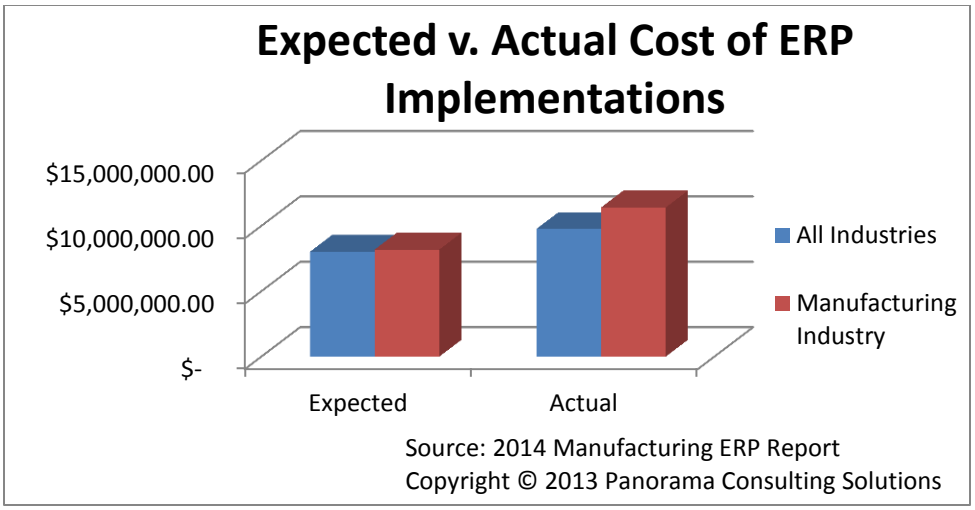
Our findings suggest that organizational issues (19-percent) and issues with project scope (13-percent) are the most common reasons for extended durations. Issues with training, data migration and unrealistic implementation timelines are responsible for schedule overages to a large degree as well, each accounting for 11-percent of responses.

Organizational issues can include inadequate change management and training, which are common problems in other industries as well. Also not unlike organizations in other industries, manufacturing organizations often struggle with managing the “people” side of implementation and tend to be consumed with the technical side. This can lead to end-users resisting process changes which then results in schedule overruns.

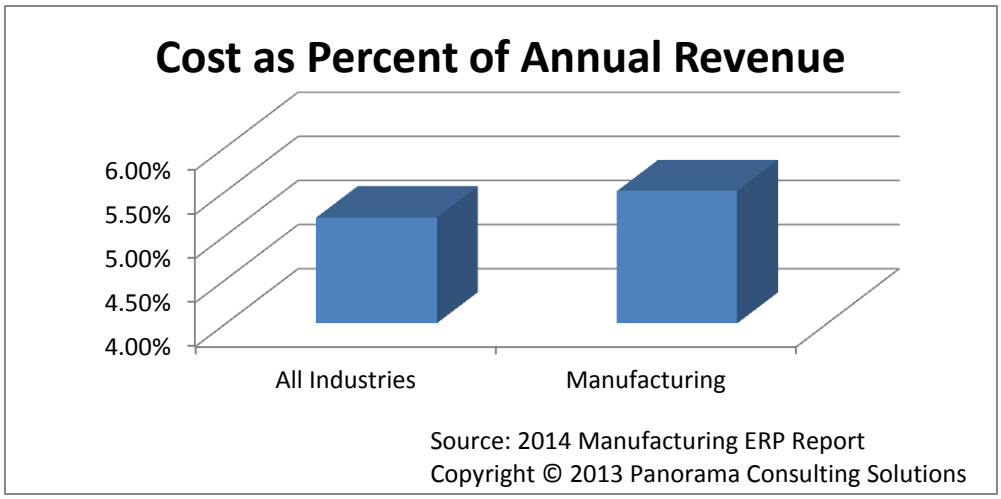


Project Cost

While the cost of an ERP implementation can be unpredictable, organizations that take the time to plan for realistic project costs will not be surprised at the actual total cost of ownership. Panorama's research shows that the cost of ERP implementations in the manufacturing industry ($11.4 million) is 14-percent higher than that of all industries ($9.8 million). Since manufacturing organizations often are more complex than organizations in other industries, ERP systems in the manufacturing industry can require more customization. Technical integration – another high-cost component of many ERP implementations – is also common in the manufacturing industry, as many firms keep their core systems in place and integrate these systems with their new ERP software. For example, many manufacturing clients we work with choose to keep their Product Lifecycle Management (PLM), Manufacturing Execution Systems (MES), and Quality Assurance systems as separate bolt-ons to their core ERP systems.



The average cost to revenue ratio in the manufacturing industry is 0.3-percent higher than that of all industries. As seen in the graph below, manufacturing ERP implementations account for around 5.5-percent of organizations' annual revenues, while ERP implementations across all industries account for only 5.2-percent of organizations' annual revenues. This difference is largely explained by the complexities unique to manufacturing organizations, explained in more detail above.



Budget Overruns

It is common for ERP implementations to exceed total cost of ownership projections. Issues such as customization level, implementation scope and business process complexity all affect total implementation cost.

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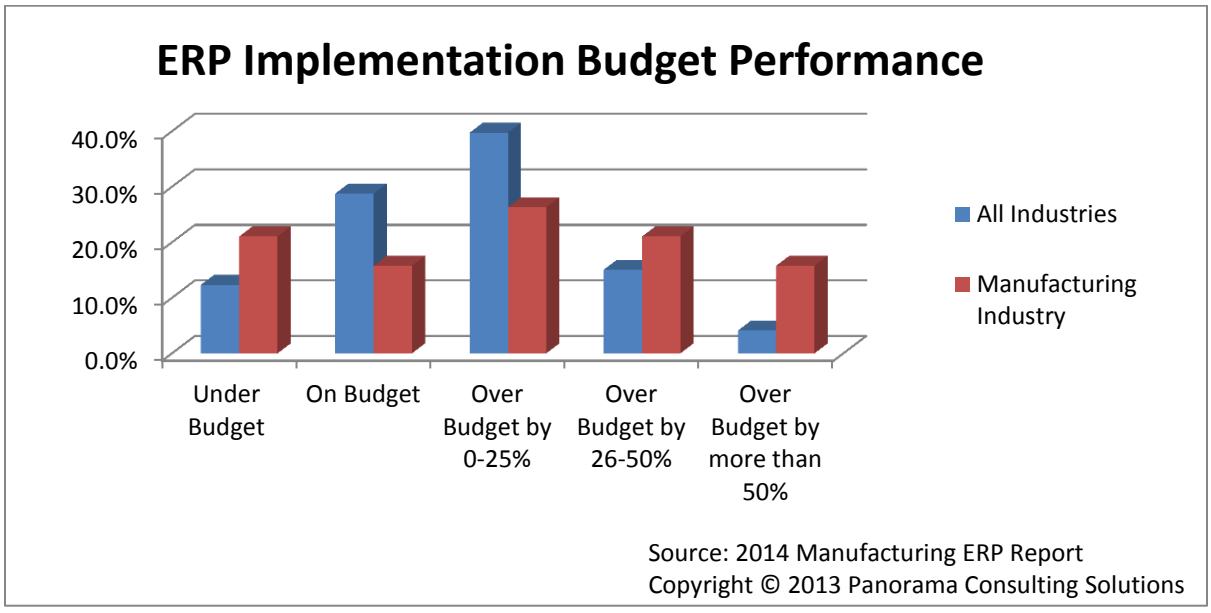
Our research suggests that upwards of 63-percent of manufacturing ERP implementations go over budget, with the actual cost exceeding the expected cost by an average of over $3 million. Across all industries, fewer implementations (59-percent) go over budget and the budget is exceeded by a lower $1.7 million.

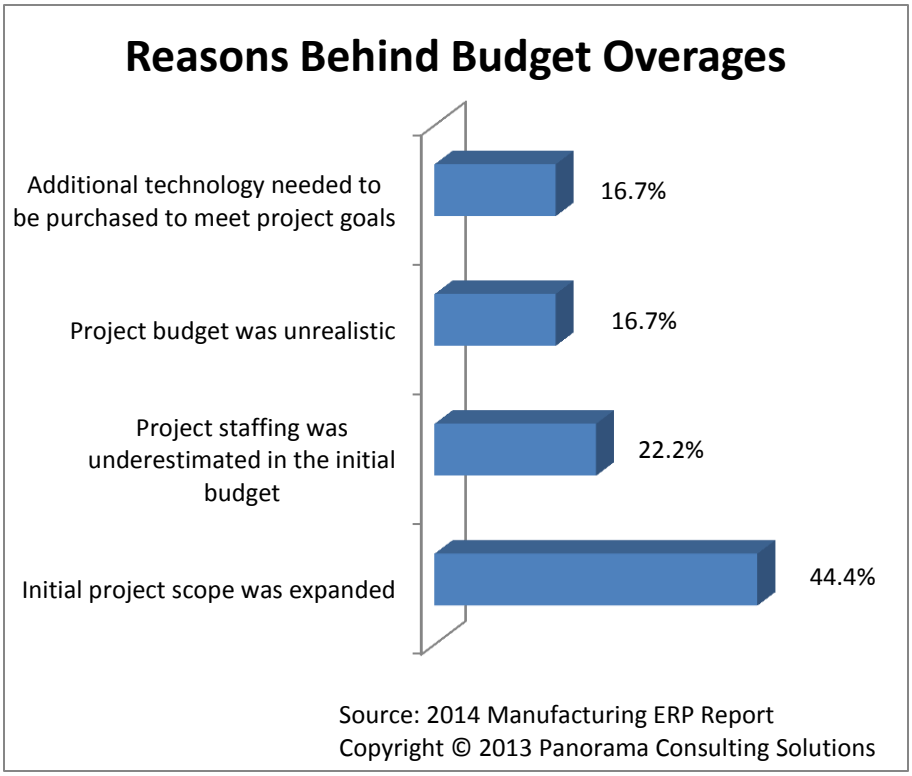
This suggests that manufacturing firms run a higher risk of going massively over budget when compared to all industries. One challenge that might lead to higher than expected costs is integration – manufacturing organizations often integrate their existing software with their new EPR software. For example, many manufacturers integrate new ERP software with pre-existing modules such as product lifecycle management, product configuration and manufacturing execution systems (MES).

Even though more manufacturing ERP implementations go over budget than implementations across all industries, manufacturing firms conversely have a higher percentage of implementations that come in under-budget. As seen in the graph below, 21-percent of manufacturing firms implement ERP with less money than anticipated, compared to only 12-percent of companies across all industries.



Source: 2014 Manufacturing ERP Report

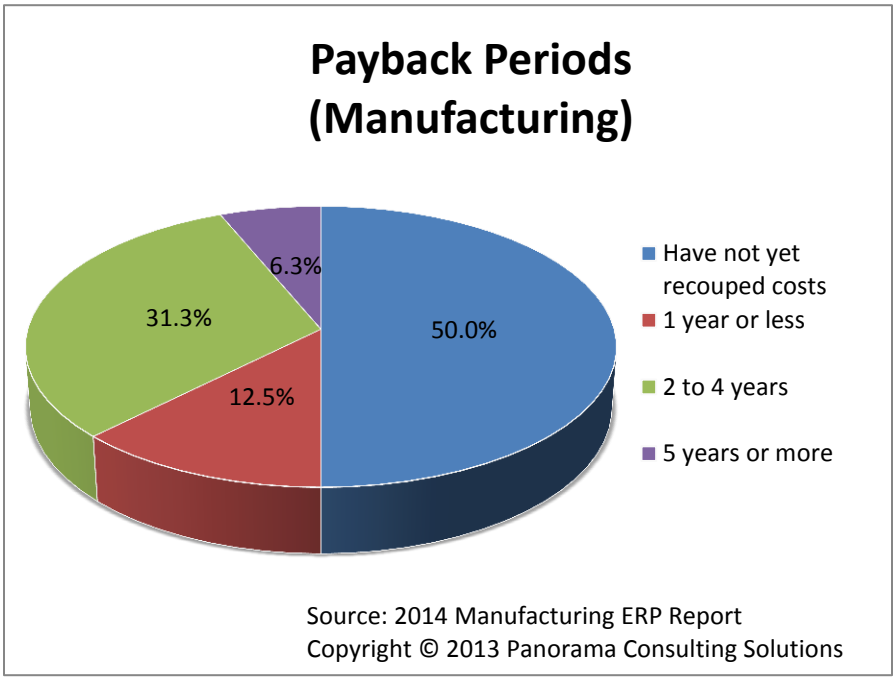
The data on the following page show that 44-percent of respondents indicate that increases in the scope of implementation are responsible for budget overages. Additionally, 22-percent of implementations experience budget overages due to a failure to adequately staff the project.



Project costs can be difficult to predict and manufacturing organizations that fail to plan for all implementation components will find that their project cost increases once they realize the need for success factors such as organizational change management and business process reengineering.

Payback Periods

A crucial aspect of measuring ERP success is analyzing the tangible benefits of an ERP system in terms of payback period. Panorama's research shows that 50-percent of respondents in the manufacturing industry have not recouped the costs of their implementation while 31-percent recouped their costs in two to four years.



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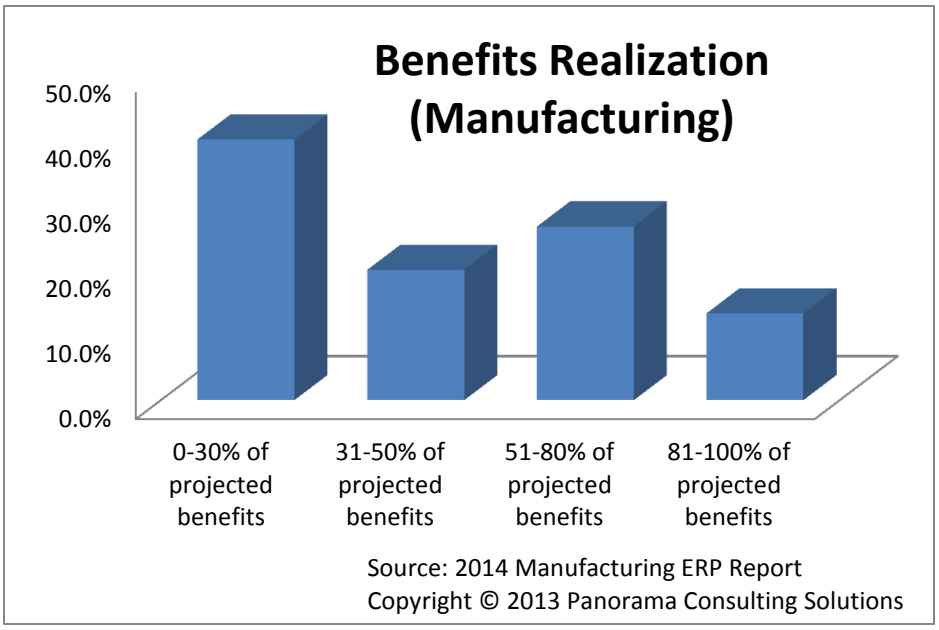
The fact that half of manufacturing organizations have yet to recoup the costs of implementation suggests that organizations do not take the time to document a strong business case. Even more troubling, only 13-percent of manufacturing organizations receive payback in one year or less. When organizations do not set a baseline to know where they are before implementation, it is impossible for them to know whether or not they received payback or positive return on investment. A business case takes into account the expected labor efficiency gains and non-labor benefits to calculate an accurate payback period.

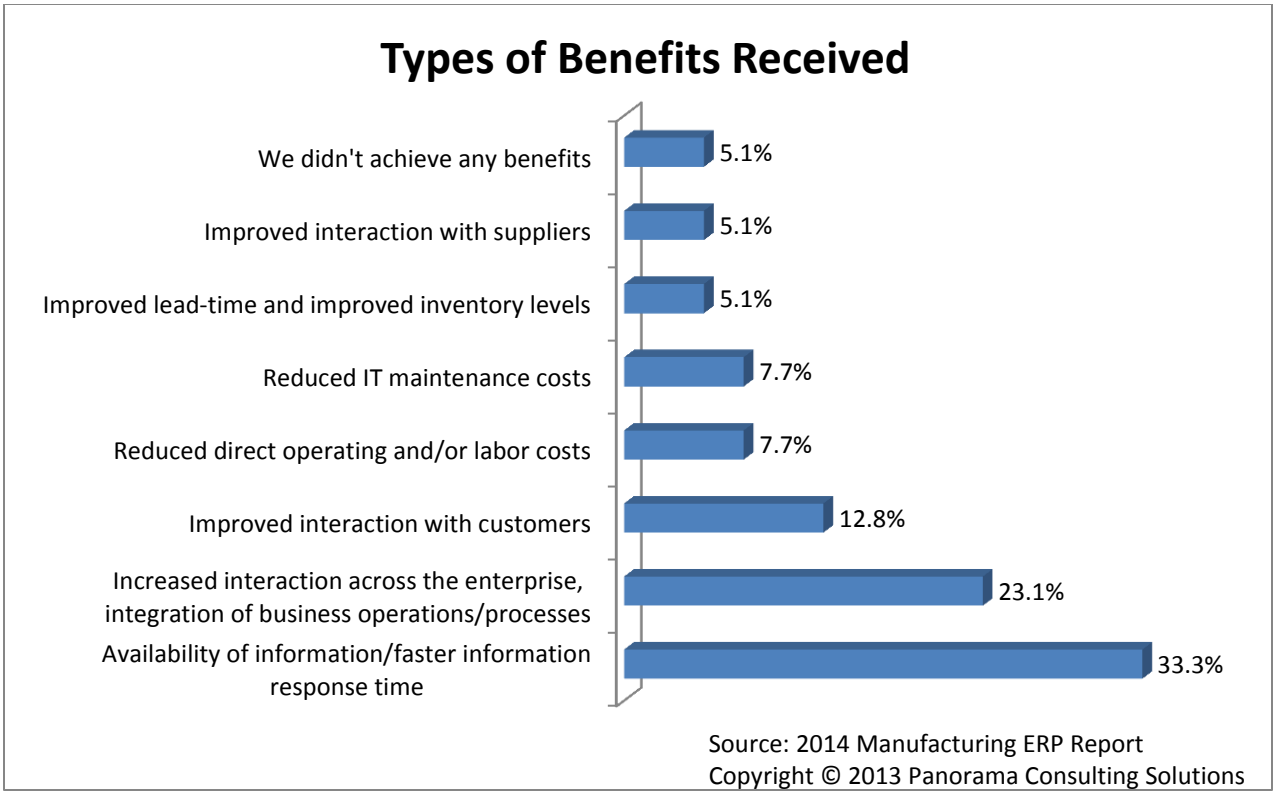
Benefits Realization

Another measure of ERP success is the realization of projected business benefits identified during the initial stages of an ERP implementation. Ultimately, manufacturing organizations undertake ERP implementations to achieve tangible benefits including a significant return on investment.



According to Panorama's findings, 40-percent of manufacturing ERP implementations realize 0-30-percent of anticipated benefits and relatively few implementations (13-percent) realize 80-100-percent of anticipated benefits.

The most common benefit manufacturing organizations realize is an increase in response time due to better availability of information (33-percent). Another common benefit is increased interaction across the enterprise (23-percent).



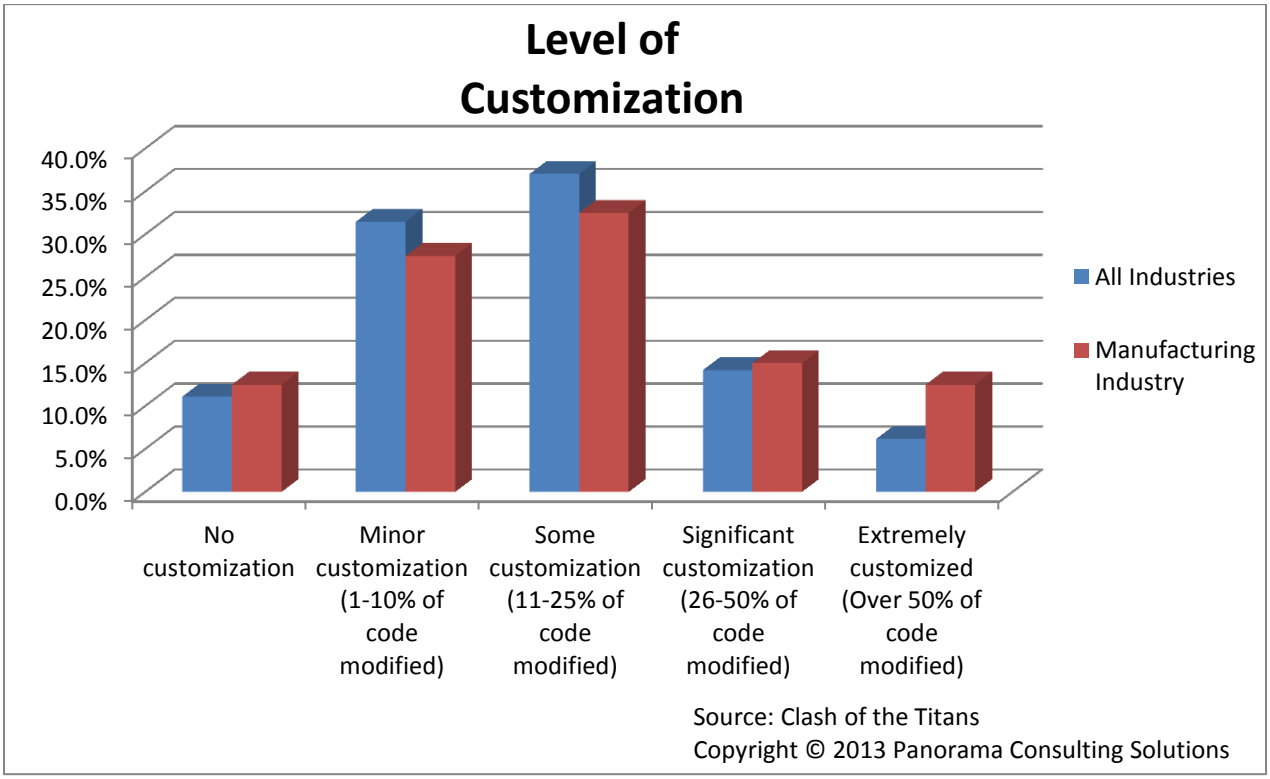
Improving access to data and interactions with other stakeholders helps manufacturing organizations determine where they are losing production efficiencies related to people, machines and materials and where to make the appropriate adjustments to eliminate quality defects or delayed customer shipments. Similarly, if there are issues with production systems, it is equally important for manufacturing organizations to be able to notify the appropriate groups so they can make corrections, whether it's reporting a quality defect to a supplier or notifying a customer of a late shipment.

Level of Customization

ERP systems often require varying degrees of customization in order to meet the demands of an organization. During implementation, companies take one of three approaches to customization: 1) change business processes to accommodate ERP functionality, 2) customize ERP functionality to accommodate current business processes, or 3) change business processes independent of ERP, then select or configure software to align with new processes.

The level of customization in manufacturing ERP implementations is slightly higher when compared to all industries as a whole. While 13-percent of manufacturing organizations implement ERP without customization, 11-percent of organizations across all industries implement without customization.

As seen on the graph below, manufacturing companies are twice as likely to experience heavy customization compared to other industries. While 13-percent of manufacturing organizations modify over 50-percent of their code, only 6-percent of companies across all industries have this level of customization.



Source: Clash of the Titans

This relatively high degree of customization compared to other industries can be attributed to the high degree of specialization and complexity inherent in many manufacturing organizations. Most ERP systems do not meet the exact requirements of every manufacturing operation because ERP vendors cannot afford to develop packages for every industry. Some of the areas that require customization are supplier lists, report formatting and the exchange documents with business-to-business trading partners. Significant customization is sometimes required but should be avoided unless critical to the business.

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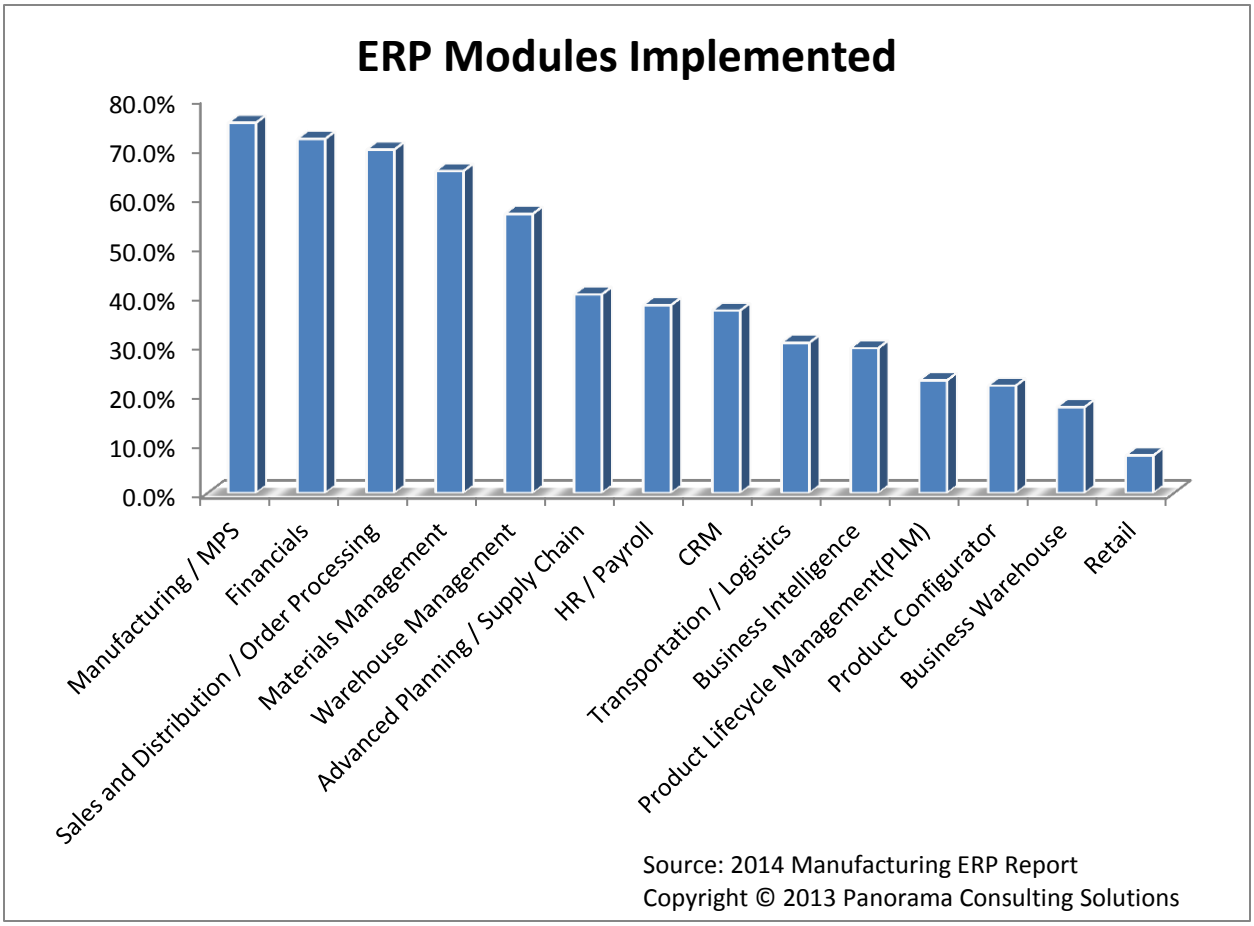
ERP Modules Implemented

Software functionality is another driver of ERP implementation cost, duration and business benefits. Panorama's findings indicate that manufacturing (MPS), financial and sales and distribution modules are implemented by over two-thirds of respondents. Other modules are implemented to varying degrees, with materials management implemented by 65-percent of respondents and warehouse management implemented by 57-percent of respondents.



Most manufacturing firms do not implement an entire ERP system but specific modules that link end-to-end manufacturing process. These modules represent the logical manufacturing workflow: entering and processing a sales order, procuring the material needed to produce the order, movement and inventory control of materials, shipment of the product and revenue recognition of the product.

Conclusion

The data in this report reveal the complexity and uniqueness of manufacturing ERP implementations. While the manufacturing industry is similar to other industries in terms of vendor market share and implementation duration, manufacturing ERP implementations are more likely to go over budget, cost more and have a higher cost-to-revenue ratio. Even though manufacturing firms tend to implement fewer modules than organizations in other industries, the cost of manufacturing ERP implementations is still significantly higher. The complexity of manufacturing processes and the level of customization and integration required often lead to higher implementation costs.

Manufacturing firms implementing ERP software also experience low benefits realization and long payback periods. Although ERP software was originally designed for the manufacturing industry, manufacturing firms have no clear advantage over other industries when it comes to realizing business benefits and realizing an attractive return on investment.

The first step to achieving ERP success in the manufacturing industry is to develop a business case that includes goals and objectives from which your organization can benchmark actual outcomes. From here, your organization can tackle the unique challenges that come with implementing and integrating the specific modules that support your manufacturing processes.

About Panorama Consulting Solutions

Panorama Consulting Solutions is an IT consulting firm specializing in the enterprise resource planning (ERP) market for mid- to large-sized organizations around the world. Independent of affiliation, Panorama facilitates the evaluation and selection of ERP software, manages ERP implementation, and expedites all related organizational change to ensure that each of its clients realize the full business benefits of their ERP systems.

More information can be found on its website, Panorama-Consulting.com and Twitter feed, Twitter.com/PanoramaERP.

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