

The 2007 ERP in Manufacturing Benchmark Report

July 2007

~ Underwritten, in Part, by ~



Executive Summary

Enterprise Resource Planning (ERP) strategies are driven by growth strategies, customer service expectations, and pressures to reduce costs. While ERP is generally viewed as a necessary infrastructure for all but the very smallest of companies, it is also a strategic weapon in streamlining and automating business processes – while providing visibility to those processes throughout the enterprise. This report explores feedback provided by over 1,400+ manufacturers, and aims to serve as a roadmap to those in the manufacturing community who desire to reduce costs, improve accuracy of inventory and schedules, and develop customer responsiveness through successful ERP implementations.

Best-in-Class Performance

Aberdeen used five key performance indicators (KPIs) to distinguish Best-in-Class from Industry Average (norm) and Laggard companies. While the implementation of ERP produced a reduction in costs, and improvements in scheduling and inventory accuracy across all companies, Best-in-Class companies achieved significantly better results, such as:

- **24%** reduction in levels of inventory, with **97%** inventory accuracy
- **96%** manufacturing schedule compliance, and **97%** on-time and complete shipments
- An average of **three days** to close a month

Competitive Maturity Assessment

Survey results show that the firms enjoying Best-in-Class performance shared several common characteristics:

- Top performers implement **28%** more functionality and are **100%** to **280%** more likely to use advanced technologies such as workflow and event management
- Best-in-Class companies are **46%** less likely to be running significantly outdated releases (two or more releases behind their ERP vendor's current release)
- Best-in-Class are **85%** more likely to calculate the return on investment (ROI) of ERP projects

As a result of these characteristics, Best-in-Class are **82%** more likely to have full visibility of all business processes from quote to cash

Required Actions

In addition to the specific recommendations in Chapter 3 of this report, to achieve Best-in-Class performance, manufacturers must:

- Not let their maintenance dollars go to waste. While it may be acceptable to skip a release, or run one release behind the most currently available, do not let your implementation lag significantly

“We have multiple systems (over 500) and incoherent, incorrect data that is causing us to integrate our various systems and processes into an integrated software solution. This is a very large ERP implementation (250,000+ end users) that we expect will take a very long time – our current plan is to have the implementation finalized by 2015. We hope to increase our enterprise capabilities by 20%, decrease operating costs by 10%, and increase our data integrity. In order to accomplish this, processes, organizational change management, and data cleanup will have to occur.”

~ Senior PLM Business Analyst/Consultant in the aerospace and defense industry

because you are leaving functionality and technology improvements largely unused.

- Integrate and automate all basic functions to support business processes from quote to cash.
- Estimate ROI to cost justify major expenditures before following up to calculate the actual return. What gets measured gets managed.

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Table of Contents

Executive Summary.....	2
Best-in-Class Performance.....	2
Competitive Maturity Assessment.....	2
Required Actions	2
Chapter One: Benchmarking the Best-in-Class	5
Aberdeen Analysis	5
Maturity Class Framework	6
Best-in-Class PACE Model.....	6
Chapter Two: Benchmarking Requirements for Success	10
Competitive Assessment.....	10
Organizational Capabilities and Technology Enablers	12
ERP Usage	12
Beyond the Basics.....	14
Chapter Three: Required Actions	16
Laggard Steps to Success.....	16
Industry Norm Steps to Success	16
Best-in-Class Steps to Success	17
Appendix A: Research Methodology.....	19
Appendix B: Related Aberdeen Research.....	21
Featured Underwriters	22

Figures

Figure 1: Business Drivers Impacting ERP Strategies.....	5
Figure 2: Maturity of ERP Implementations	7
Figure 3: Planned Upgrade and Replacement Activity.....	8
Figure 4: Reasons for Delaying Upgrades	9
Figure 5: Best-in-Class are More Likely to Use Process, Intelligence, and Performance Management Tools	14
Figure 6: Best-in-Class are Most Likely to Adopt Advanced Technology Features.....	15
Figure 7: What Would Force Companies to Implement ERP?	18
Figure 8: Companies with No ERP by Annual Revenue	18

Tables

Table 1: Companies with Top Performance are “Best-in-Class”	6
Table 2: Best-in-Class PACE Framework.....	7
Table 3: Competitive Framework.....	11
Table 4: ERP Module Adoption Rates.....	13
Table 5: The PACE Framework	20
Table 6: The Maturity Framework.....	20
Table 7: Relationship Between PACE and Competitive Framework..	20

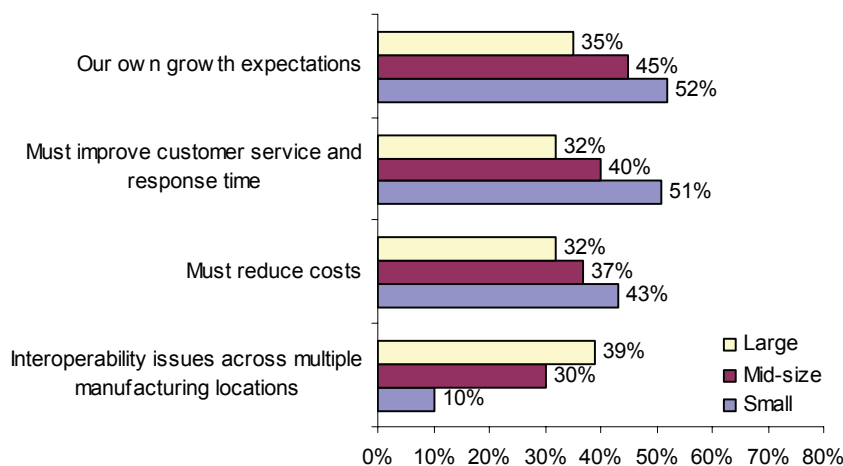
Chapter One: Benchmarking the Best-in-Class

Aberdeen Analysis

Enterprise Resource Planning (ERP) strategies are not driven by a single dominant external business pressure. One company might be responding to accelerated growth, another to the need to improve customer service and response time, while a third may be operating under mandates to reduce costs. In spite of this variation, the majority of companies view ERP as a strategic weapon to streamline and automate business processes in order to improve efficiencies. As a result, Best-in-Class companies are **82%** more likely to have visibility into the status of all processes from quote to cash, making them **101%** more proficient in notifying decision makers in real time as exceptions occur. In addition, Best-in-Class are **91%** more likely to be able to act proactively in anticipation of exceptions.

Aberdeen's most recent survey of over 1,400 manufacturers showed three dominant business drivers (at or near 40% of all respondents) for the top pressures impacting ERP implementation strategies. Yet, when broken down by company size, a marked difference between these leading drivers is visible (Figure 1). Growth strategies weigh more heavily in influencing small and mid-size companies and small companies, without the advantage of size and scale, must prove themselves with stellar customer care and are therefore more likely to be driven to improve service and response times. On the other hand, they have yet to be challenged with the increasing complexities of operating multiple manufacturing sites that must be dealt with in large and even mid-size companies.

Figure 1: Business Drivers Impacting ERP Strategies



Source: Aberdeen Group July 2007

Fast Facts

Notable performance achievements:

- ✓ Best-in-Class companies are **82%** more likely to have visibility into the status of all processes from quote to cash.
- ✓ As a result, Best-in-Class are **101%** more proficient in reacting to exceptions in real time and are **91%** more likely to be able to proactively anticipate exceptions.

Aberdeen defines company size by annual revenues:

- ✓ Small companies: Under \$50 million
- ✓ Mid-size companies: Between \$50 million and \$1 billion
- ✓ Large companies: Over \$1 billion

The strategic actions of Best-in-Class to address issues of standardization, automation and transparency serve as a guide to those who aspire to this level of performance:

- Standardize and accelerate non-manufacturing processes including order management, service, finance and administration (62%)
- Standardize and accelerate manufacturing processes (50%)
- Provide visibility to business processes across functions and departments (48%)

“Our improvement had a lot to do with processes; we used our ERP implementation as an influencing factor and catalyst for process improvement.”

~Mark van Tassell, IT/IS
 Application Services Manager,
 Atlas Copco Drilling Solutions
 LLC.

Maturity Class Framework

Aberdeen used five key performance indicators (KPIs) to distinguish Best-in-Class companies from Industry Average and Laggard organizations (Table 1).

While the benefits from successful ERP implementations can range far beyond these criteria, these KPIs were selected for their universal relevance in manufacturing operations across any industry as well as the ability of ERP to impact performance. Other KPIs were also measured, including reduction in manufacturing and administrative costs and improvements in scheduling and delivery.

Table 1: Companies with Top Performance are “Best-in-Class”

Definition of Maturity Class	Mean Class Performance
Best-in-Class: Top 20% of aggregate performance scorers	<ul style="list-style-type: none"> • 24% reduction in inventory levels • 97% inventory accuracy • 3.1 days to close a month • 96% manufacturing schedule compliance • 97% complete and on-time shipments
Industry Average: Middle 50% of aggregate performance scorers	<ul style="list-style-type: none"> • 13% decrease in inventory levels • 92% inventory accuracy • 5.3 days to close a month • 88% manufacturing schedule compliance • 91% complete and on-time shipments
Laggard: Bottom 30% of aggregate performance scorers	<ul style="list-style-type: none"> • 4% decrease in inventory levels • 81% inventory accuracy • 7.4 days to close a month • 75% manufacturing schedule compliance • 83% complete and on-time shipments

Competitive Framework Key

The Aberdeen Competitive Framework defines enterprises as falling into one of the three following levels of practice and performance:

Best-in-Class (20%) — practices that are the best currently being employed and are significantly superior to the industry norm

Industry norm (50%) — practices that represent the average or norm

Laggards (30%) — practices that are significantly behind the average of the industry

Source: Aberdeen Group, July 2007

Best-in-Class PACE Model

To achieve these significant benefits from an ERP solution, a combination of strategic actions, organizational capabilities, and enabling technologies are required. These can be summarized as shown in Table 2.

Table 2: Best-in-Class PACE Framework

Pressures	Actions	Capabilities	Enablers
<ul style="list-style-type: none"> Stakeholders expectations of growth Must improve customer service and response time Must reduce costs 	<ul style="list-style-type: none"> Standardize and accelerate manufacturing and non-manufacturing processes (order management, finance, administrative functions) Provide visibility into business processes across functions and departments 	<ul style="list-style-type: none"> Standardized enterprise-wide procedures for order management, production planning and execution, followed by cash collection, automated financial reconciliation, and performance analytics Manufacturing operations are integrated and coordinated with customer service, logistics, and delivery organizations Real time visibility into status of all processes from quote to cash Decision makers are notified in anticipation of exceptions and can respond proactively 	<ul style="list-style-type: none"> Integrated ERP: Integrated order entry, procurement, production, and financial management applications Business intelligence / analytic tools Corporate performance management applications Business process management / workflow Alerts and triggers (event management) Workflow automation tools

Source: Aberdeen Group, July 2007

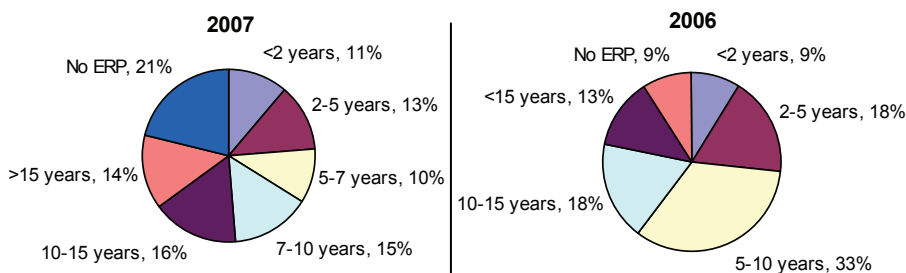
These strategies must eventually translate into tactical decisions around upgrades and replacements. To best understand these plans, it is important to note the general maturity of ERP implementations (Figure 2). The relative age of these installations hardly changed from our 2006 [ERP in Manufacturing Benchmark Report](#). Although we saw a slight increase in younger implementations that are two to five years old (from 13% to 18%), 45% of implementations are more than seven years old, which means they pre-date the year 2000 (Y2K) – which represents a significant turning point for ERP technology and functionality.

However, the percentage of companies participating in our survey with no ERP increased significantly from 9% to 21%, signaling a significant interest in ERP from companies previously not served by ERP solutions. This includes 8% which are planning to implement within 12 months. The majority of these companies are relatively small, with 57% with annual revenues under \$50 million and another 22% with revenues from \$50 to \$250 million, indicating significant opportunity for these smaller companies to reap the benefits of automation.

“We looked at a completely new ERP system. Because it was very different technology than what our existing IT team was used to, and because it was difficult to find, hire, and train new IT staff, we made a strategic decision to outsource our IT based on our ability to hire and maintain resources. It was one of the best strategic decisions that Russell Stover Candies has ever made.”

~Dick Masinton, CFO, Russell Stover Candies

Figure 2: Maturity of ERP Implementations

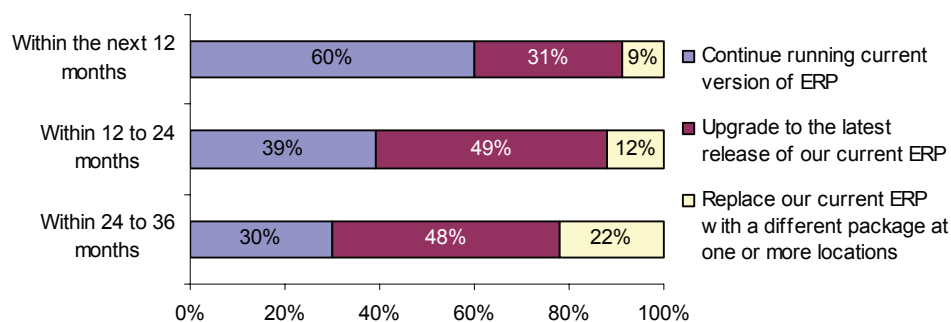


Source: Aberdeen Group, July 2007

Aberdeen’s 2006 [ERP in Manufacturing Benchmark Report](#) also looked at upgrade and replacement strategies within a 12 month period and noted significant upgrade activity was planned, as well as a surprising 14% of all companies that were planning to replace ERP at one or more locations. While the planned replacement strategies over the next 12 months dropped to 9% this year, this number escalates over the next 24 months (Figure 3). These replacement strategies are largely driven by the proliferation of enterprise applications, causing **integration issues (43%)** which create the desire to **consolidate or rationalize multiple ERPs (44%)**. However, other driving factors include:

- The need for more functionality (42%)
- The need for global standardized solutions with international capabilities (37%)
- Outdated and clumsy user interfaces (34%)

Figure 3: Planned Upgrade and Replacement Activity



Source: Aberdeen Group, July 2007

“We replaced a 30 year old home grown system running on Data General. Even the operating system was customized. We had starts and stops looking for a replacement before. We didn’t want to risk a big bang approach. We started a year ago. We went live with purchasing, accounts payable, manufacturing and inventory in 77 days and turned off the old system five months later. We still use our legacy financials, but we will move to a complete suite.”

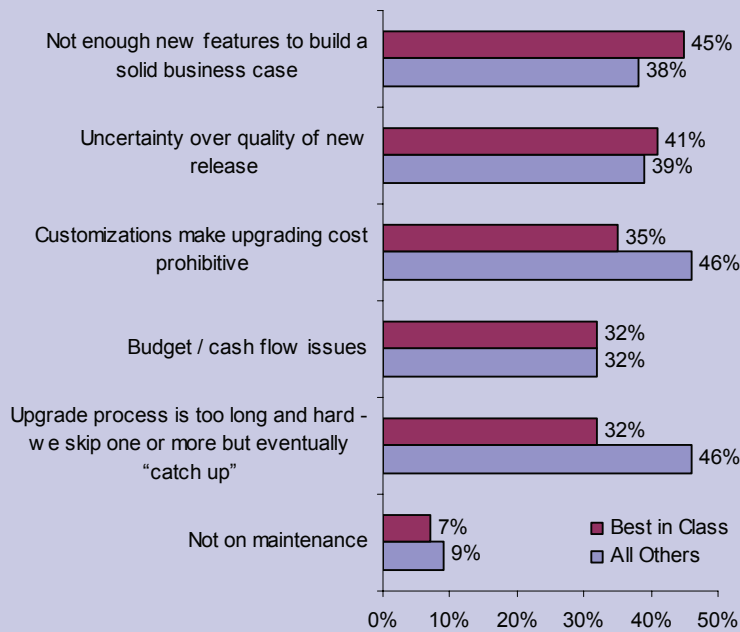
~CIO, Provider to the Food Services Industry

Aberdeen Insights – Strategy

Operating one release behind the most current version available is a planned strategy for many companies. While only **37%** of Best-in-Class operate on the latest release, they are **45%** more likely to be up to date than all other companies (Industry Average and Laggard). Best-in-Class are **56%** less likely to be operating two or more releases behind and are **76%** less likely to be three or more releases behind. However, the most interesting distinction lies in **why** Best-in-Class companies delay upgrades. Decisions of Best-in-Class companies are driven primarily by feature functionality and the relative business benefits offered and they are less likely to be deterred by customizations, difficulty of upgrading, or budget constraints.

Aberdeen Insights – Strategy

Figure 4: Reasons for Delaying Upgrades



Source: Aberdeen Group, July 2007

"We most definitely skip releases. It takes us months to move forward because of our customizations. We can't afford to do it more than once every two to three years."

~ERP Administrator,
 Manufacturer of Thermal
 Systems

Chapter Two: Benchmarking Requirements for Success

The selection and implementation of ERP is a major undertaking for any company. The level of standardization of business processes, as well as the integration of people, processes, and technology can have a significant impact on the benefits achieved for these efforts.

Case Study: Golden Temple

Golden Temple, a manufacturer of organic teas and cereals, is in the process of implementing its first ERP. Over the past five years, the privately held company has experienced 20% to 30% growth and is now approximately \$85 million in annual revenues with 300 employees. Keith Bearden was brought in to implement the ERP solution as a contractor and acting CIO.

The selected ERP is meant to replace its home-grown applications which couldn't keep up with the growth. "Golden Temple sought external resources such as myself and chose a hosted solution because it didn't want to build out the staff to support the system. It was never a consideration to bring the solution in house because they are a small company and find it hard to recruit and retain IT staff," said Bearden.

Bringing ERP to Golden Temple is taking a lot of standardization of business processes and practices and a lot of changes to their infrastructure (with only four IT personnel on staff). The number one objective from this implementation is inventory control. They are seeking to better manage and track their inventory, while keeping a keen eye on inventory reduction. They need this capability due to the highly competitive organic products market in which they operate.

"Golden Temple is a 24x7 plant, and this application is critical to their work processes. The organic products market requires lot tracking and raw materials traceability for certification purposes. They will now be able to do all of this accurately with a single source of information for product costs, and hope to improve quality management from this implementation," said Bearden.

Fast Facts

- √ **76%** of Best-in-Class manufacturers have standardized enterprise wide processes to support the quote to cash cycle
- √ Best-in-Class use **28%** more functionality overall and provide access to ERP to **31%** more power users
- √ Best-in-Class are **twice as** likely to employ workflow technologies for more streamlined business processes and are almost **4 times** more likely to implement event management to manage exceptions

Competitive Assessment

The aggregated performance of surveyed companies determined whether they ranked as Best-in-Class, Industry Average, or Laggard. In addition to having common performance levels, each class also shared characteristics in five key categories: (1) process (ability to standardize business processes and ERP implementation); (2) organization (collaboration across departments and line of business ownership); (3) knowledge management (providing visibility); (4) technology (scope of ERP implementation); and (5) performance measurement (ability to reap a return on IT investments). These characteristics (identified in the table below) serve as a guideline for best practices and correlate directly with Best-in-Class performance across the key metrics.

Table 3: Competitive Framework

	Laggards	Average	Best-in-Class
Process	Standardized enterprise wide procedures for order management, procurement, production planning and execution, cash collection and financial reconciliation		
	50%	54%	76%
	Standardized implementation of ERP across a potentially distributed enterprise		
	45%	66%	67%
Organization	Manufacturing operations are integrated and coordinated with service, logistics, and delivery organizations		
	40%	56%	63%
	Line of business ultimately owns the success of the implementation		
	35%	47%	62%
Knowledge	From summary data, decision-makers can drill down to specific transactions		
	36%	40%	53%
	Real time visibility into all processes from order to cash		
	25%	31%	51%
Technology	ERP usage		
	<ul style="list-style-type: none"> • average of 9.1 modules implemented¹ • 67% of functionality available deployed • 25% weighted average of ERP usage² 	<ul style="list-style-type: none"> • average of 10.7 modules implemented¹ • 72% of functionality available deployed • 32% weighted average of ERP usage² 	<ul style="list-style-type: none"> • average of 12 modules implemented¹ • 76% of functionality available deployed • 38% weighted average of ERP usage²
Performance	Decision makers are notified in anticipation of exceptions and respond proactively		
	25%	30%	54%
	Decision makers are notified in real time as exceptions occur and can react immediately		
	21%	26%	48%

1. The number of modules is based on a set of 24 generic ERP modules
 2. Calculated as: average number of modules/24 * percent of functionality used

Source: Aberdeen Group, July 2007

Organizational Capabilities and Technology Enablers

The essential ingredients of a well-designed ERP implementation strategy include the standardization, streamlining, and automation of business processes, both in planning and production as well as in the back and front office functions of order management, procurement, cash collection, and financial reconciliation. In fact, Best-in-Class companies distinguish themselves by coordinating manufacturing operations with the up front quote to order functions, as well as the back end service, logistics, and delivery organizations (63%).

Both of these distinguishing characteristics of Best-in-Class touch not only business processes but also organizational structures. While management commitment to ERP has long been recognized as a mainstay of successful implementations, the marriage of technology solutions to real business problems has become the new mantra. CIOs today must blend an understanding of business processes with technical expertise, but Best-in-Class companies are 45% more likely to ultimately assign ownership of the success of the ERP implementation to line of business professionals and not IT.

The goal is to arm these business decision makers with visibility into all business processes from quotation to cash collection, making summary data immediately available with detail data available on demand. While study results show that Best-in-Class companies are 79% to 101% better armed with various decision-making capabilities, almost half of these top performers do not have this real-time visibility for exception management. This allows for significant improvement.

ERP Usage

Aberdeen's 2006 [ERP in Manufacturing Benchmark Report](#) confirmed the generally accepted view that ERP is grossly underutilized. Last year's benchmark found the average manufacturer used 10.5 out of 24 generic ERP modules and approximately 63% of the functionality available in those modules for a weighted average use of 27.6% of ERP functionality. This year's study showed exactly the same average number of modules deployed (10.5), but observed a slim increase in the average percent of functionality used within those modules (71%) for a slight increase in the weighted average use (31.2%). Table 4 depicts the percentage of respondents using each of the modules in 2006 and 2007.

"Our focus now is on implementing functionality that we own but don't use. We recently hired someone to champion the installation of those modules, and we're currently discovering what's available and what we want to start using. We think that implementing MRP, and using capacity planning, will be the most important – and we plan to implement that this year. Our number one opportunity right now is efficiency in the plant – demand is high right now, and so we want to learn how to be the most efficient that we can to get the most product out of our shop. That will have a direct impact on the bottom line."

~Michael Bodinger, Director of
Information Technology,
Hackney Ladish, Inc.

Table 4: ERP Module Adoption Rates

Technology Solution Area	% Implemented in 2006	% Implemented in 2007
General Ledger	93%	91%
Accounts Payable	93%	93%
Accounts Receivable	92%	92%
Fixed Assets	43%	38%
MRP (Material Requirements Planning)	79%	77%
CRP (Capacity Requirements Planning)	20%	19%
DRP (Distribution Requirements Planning)	23%	16%
MPS (Master Production Scheduling)	19%	35%
Forecasting and Demand Planning	37%	46%
Human Capital Management	9%	14%
Order Management	80%	81%
Project Management	17%	23%
Shop Floor Control	56%	55%
Purchasing	94%	90%
Inventory Control	92%	87%
After Market Service (Field Service / Depot Repair)	13%	15%
Engineering Change Management	28%	33%
Enterprise Asset Management (EAM)	6%	10%
Supplier Collaboration/scheduling	14%	16%
Event Management	5%	8%
Workflow Technologies	18%	19%
Sales and Marketing	42%	42%
Product Configuration	20%	22%
Payroll	24%	27%

Source: Aberdeen Group, July 2007

Of course, some ERP vendors do not offer this full breadth of functionality and some manufacturers do not require all modules. Project Management, Product Configuration, and Distribution Requirements Planning are good examples of modules where 100% penetration should not be expected. However, if ERP is implemented and the General Ledger module is not being used, chances are General Ledger is being done either by a corporate system, a stand-alone “best of breed” application, or (in small companies) a

“We were going through significant business growth and through 1996 and 1997 I looked at around 100 ERP and MRP solutions. We had a very short implementation timeline, and we didn’t feel at that time that we could implement a solution in our production manufacturing environment that quickly while continuing to maintain our growth. And, the software wasn’t conducive to our rapidly moving environment. It just wasn’t cost-effective to implement at that time. Now, though, the bar-coding systems are better and the solutions have had 10 years to mature, so we are hoping that we’ll find a solution that meets our needs. The software is more user-friendly, and we expect that the implementation will be more cost effective. Before, the maintenance of the software and all of the associated files was too expensive. Now ERP software is mature. It’s also cheaper, easier to install, and has less overall associated maintenance.”

~ Ed Danzer, Chief Technical Officer, Danzco Inc (industrial equipment manufacturing industry)

desktop application. For core functionality required by any business (those modules shown in **bold letters**) – core financial applications, purchasing, order management, inventory control and payroll – only the smallest of companies are able to function without automating these functions to some extent. Each of these functions, with perhaps the exception of Payroll (which can easily be outsourced) represents an opportunity for automation, application integration, or rationalization.

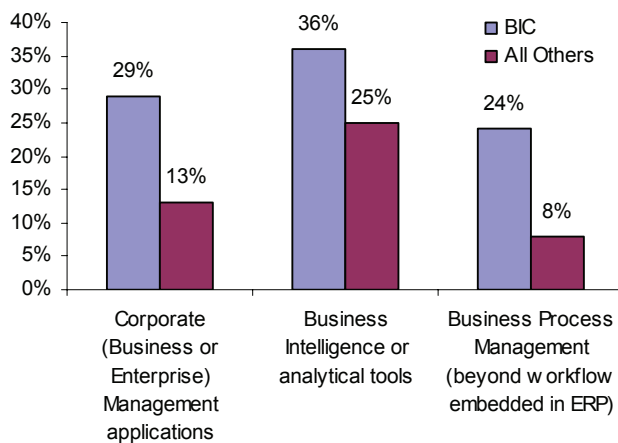
Another test of ERP usage can be measured by how pervasively it is used throughout the organization. Forty-three percent (43%) of employees in Best-in-Class companies are power users of ERP as compared to 33% in all other companies.

We can conclude that the broader and deeper ERP reaches into an organization, the more business benefits can be gained.

Beyond the Basics

While there are many extensions that sit beyond the modules of ERP, we would stray off topic by delving too deeply into all that are available. However, several of these are oriented more toward reaping the full benefits of core ERP and mining the data contained therein. These include Business Intelligence and Business Process Management tools, as well as Corporate Performance Management application suites. In fact, Aberdeen has observed a correlation between the adoption of these tools and Best-in-Class performance (Figure 5).

Figure 5: Best-in-Class are More Likely to Use Process, Intelligence, and Performance Management Tools



Source: Aberdeen Group, July 2007

"It took us nine months from the time we made our software selection to when we went live, but we spent much of the time re-evaluating our processes. We first documented our present state. We asked the questions; 'Where are we today,' 'Why are we here,' and 'What can we do to make it better?' We gave our project team freedom of thought and challenged them to break paradigms. We documented new flows and work instructions and we conducted a thorough pilot test."

~Mark van Tassell, IT/IS
 Application Services Manager,
 Atlas Copco Drilling Solutions
 LLC.

Modules Versus Extensions

Aberdeen is careful to distinguish between a "module" of ERP and an "extension." All the modules of ERP use a single database model. Integration is built in and there is little or no redundancy of data elements, except where there is a specific need. A module is built with the same development tools, on the same architecture as core ERP.

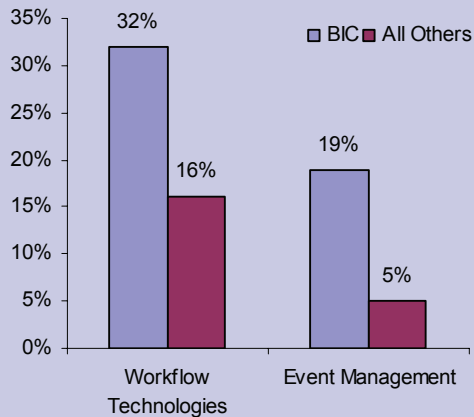
The simplest definition of an extension to ERP is an enterprise application that extends the functionality, but is separate. However, the degree of separation or integration varies widely.

Aberdeen Insights – Technology

This year, Aberdeen did observe that the number of modules implemented and the percent of functionality used escalated as companies moved from Laggard to Industry Average and from Industry Average to Best-in-Class. On average an additional 1.5 modules were implemented with each jump in competitive maturity, with an average of four to six additional percentage points of functionality gained.

In addition results showed a significant increase in the adoption of more advanced technology features such as workflow automation and event management (triggers and alerts) amongst Best-in-Class. Workflow is an effective means of streamlining and automating business processes while event management is particularly effective in providing a solid basis for exception management.

Figure 6: Best-in-Class are Most Likely to Adopt Advanced Technology Features



Source: Aberdeen Group, July 2007

Chapter Three: Required Actions

Whether a company is trying to move its performance in ERP usage from Laggard to Industry Average, or Industry Average to Best-in-Class, the following actions will help spur the necessary performance improvements:

Laggard Steps to Success

- *Establish specific goals for obtaining business benefit from ERP – measure progress*
Because ERP is frequently considered a necessary infrastructure, specific goals for implementation are often ignored and ROI is not estimated prior to major projects or calculated after project completion. Our Best-in-Class KPIs provide a logical starting point for these goals – inventory and cost reductions, inventory accuracy and schedule and delivery compliance, as well as efficient month end closing processes.
- *Use ERP as a vehicle to standardize and automate business processes*
For companies yet to implement ERP, this will be an important step in providing an automated system of record from which to produce operational and financial audit trails and an enterprise wide system of record. Make sure you have the most basic functionality implemented including General Ledger, Accounts Payable, Accounts Receivable, Order Management, Purchasing, and Inventory Control.
- *Do not let your maintenance dollars go to waste*
While it may be acceptable to skip a release or run one release behind the most currently available, do not let your implementation lag significantly, leaving functionality and technology improvements largely unused.

“I have no idea about these systems, how to use them and how they can benefit me. But I am realizing the importance of new methods and wish to keep tabs on inventories and distribution channels in real time, with minimum staff requirements. This would ultimately lead to cost controls and higher profitability, with a minimum level of additional staff.”

Partner/CEO, small Food processing manufacturer

Industry Norm Steps to Success

- *Broaden and deepen your use of ERP*
Support all critical stakeholders’ visibility into current and accurate data. Companies typically have access to more functionality than they use. Industry Average companies use 28% less functionality and have 36% fewer power ERP users and 14% fewer casual users than Best-in-Class. Use what you have and also continue to expand to include the entire quote to cash business cycle.
- *Review current goals for obtaining business benefit; set the bar higher, and seek new opportunities for growth*
Your best competitors will continue to seek out new functionality and technology and improve their performance even if you stand still.
- *Estimate ROI prior to embarking on major projects*
Best-in-Class companies are 67% more likely to estimate ROI on ERP projects in order to cost justify investment. As a result they are not

Fast Facts

To achieve Best-in-Class status:

- ✓ Develop specific key performance goals; establish a base level of performance and measure often.
- ✓ Start with the basics of ERP and expand its use to streamline, integrate, and automate all business processes from quote to cash. Best-in-Class broaden and deepen their use of ERP.
- ✓ Estimate ROI to cost justify projects, and then follow up to calculate actual returns.

only more likely to actually make the investment, but also reap the benefits. This should be considered for all major projects, not just capital purchases – including upgrades to new releases, implementing new modules or features, customizing applications, or aligning business processes to software capabilities. Be sure to establish a base level of performance from which to gauge improvement. Performance can be monetary (as in hard cost savings) or softer savings (such as the redeployment of headcount internally).

Best-in-Class Steps to Success

- *Take advantage of workflow and event management technologies to streamline business flows and manage by exception*

While Best-in-Class are significantly more likely to currently employ these technologies, still only about a third (36%) do and only about half (53%) have real time visibility into all processes from quote to cash. Workflow automation is particularly effective in helping to streamline and automate business processes (particularly those which span multiple departments or divisions) and detect when exceptions occur. As the amount of data collected continues to expand, it becomes increasingly important to prioritize and present critical data on a “need-to-know” basis.

- *Calculate ROI for completed projects*

Although Best-in-Class companies are 50% more likely to estimate ROI in order to justify ERP projects and are 85% more likely to calculate the actual ROI after project completion, only half (50%) actually go through the exercise of proving the value of these projects. What gets measured gets managed: the simple process of scrutinizing the business benefit and value will lead to more tangible results.

Aberdeen Insights – For Those Without ERP

With the increased participation in our survey of companies with no ERP currently installed, it seems appropriate to provide some insight into what would force these companies to finally take the plunge. While 56% of companies with no ERP were under \$50 in annual revenue, this is not only a small company phenomenon. While there was no one particular impetus that would initiate an ERP implementation, external pressures from customers or suppliers appears to be the most universal catalyst. While mid-size to large companies are more concerned about regulatory compliance requirements, small and large companies alike are more likely to be influenced by the emergence of low cost and low risk options. And finally, anticipated growth is also a key factor.

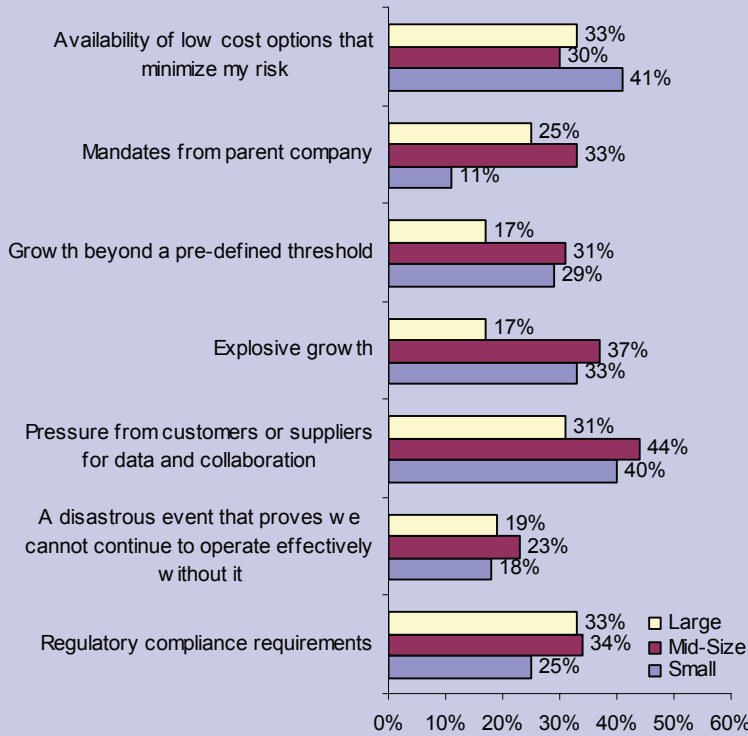
See Aberdeen's [ERP: The Last Bastion of Resistance to Software as a Service](#) for a discussion of On Demand and hosted ERP alternatives.

“We are becoming more global, and as we develop more business units in Asia and China, our current system isn't able to support the new languages that we need (Chinese). In addition to the language support, we wanted one consolidated system so that we can roll all of the financial information up to the corporate level. Our current ERP in our North America location is at the end of its life. The financials aren't adequate; there is functionality missing, and we couldn't integrate any other systems into it. We have a number of disparate business systems, and we really want one integrated system for a single point of entry and shared data across the entire organization. We also want ease of to drive greater adoption of the solution across the company. The goal is to have total integrated functionality down to the shop floor.”

~ Director of IT in the automotive industry

Aberdeen Insights – For Those Without ERP

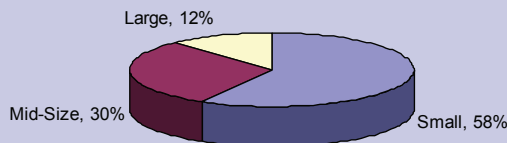
Figure 7: What Would Force Companies to Implement ERP?



“We will look for a vendor that is approachable, with 24X7 support, that is willing to teach us how to use their system, and that is willing to adapt to our unique requirements. We prefer to go with the Software as a Service (SaaS) model, although we have not ruled out licensing a solution and implementing it on premises. To my mind, SaaS would be relatively simple to use, without much investment in infrastructure.”

Partner/CEO, Small Food processing manufacturer

Figure 8: Companies with No ERP by Annual Revenue



Source: Aberdeen Group, July 2007

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Appendix A: Research Methodology

In June 2007, Aberdeen Group examined the use of ERP in the manufacturing industry. The experiences and intentions of more than 1400+ enterprises in a diverse set of manufacturing enterprises were gathered. Responding manufacturing executives completed an online survey that included questions designed to determine how integrated ERP can be used to gain the following benefits:

- Standardize, streamline and automate manual processes
- Provide visibility to data and business process status
- Consolidate and comply with financial reporting requirements
- Better control inventory and manufacturing schedules

Aberdeen supplemented this online survey effort with telephone interviews with select survey respondents. The study aimed to identify emerging best practices for ERP usage in manufacturing companies and provide a framework by which readers could assess their own management capabilities. Responding enterprises included the following:

- **Job title:** Senior Management, including CEO, COO, and President (10%), CIO (7%), CFO (5%), Vice President (6%), Director (15%), Manager (34%), Staff, Consultant, and Other (23%).
- **Job function:** IT (36%), Logistics and Supply Chain (14%), Manufacturing (11%), Sales and Marketing (7%), Finance (10%), Business Process Management (10%), and Other (12%).
- **Industry:** The research sample included respondents primarily from manufacturing industries: High Technology (11%), Industrial Equipment Manufacturing (25%), Process-related industries (16%), Automotive (17%), Consumer Product Goods, including Food and Beverage (14%), Metals and Metal Products (12%), Aerospace and Defense (13%), among others with lower overall percentages. (Companies were allowed to select more than one industry.)
- **Geography:** The majority of respondents (72%) were from North America. Remaining respondents were from Europe, Middle East, and Africa (16%), Asia-Pacific (10%), and South / Central America (2%).
- **Company size:** 17% of respondents were from large enterprises (annual revenues above US \$1 billion); 39% were from midsize enterprises (annual revenues between \$50 million and \$1 billion); and 44% of respondents were from small businesses (annual revenues of \$50 million or less).

Solution providers recognized as sponsors of this report were solicited after the fact and had no substantive influence on the direction of *The 2007 ERP in Manufacturing Benchmark Report*. Their sponsorship has made it possible for Aberdeen Group to make these findings available to readers at no charge.

Table 5: The PACE Framework

PACE Key
<p>Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows:</p> <p>Pressures — external forces that impact an organization’s market position, competitiveness, or business operations (e.g., economic, political and regulatory, technology, changing customer preferences, competitive)</p> <p>Actions — the strategic approaches that an organization takes in response to industry pressures (e.g., align the corporate business model to leverage industry opportunities, such as product/service strategy, target markets, financial strategy, go-to-market, and sales strategy)</p> <p>Capabilities — the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products/services, ecosystem partners, financing)</p> <p>Enablers — the key functionality of technology solutions required to support the organization’s enabling business practices (e.g., development platform, applications, network connectivity, user interface, training and support, partner interfaces, data cleansing, and management)</p>

Source: Aberdeen Group, July 2007

Table 6: The Maturity Framework

Maturity Framework Key
<p>The Aberdeen Maturity Framework defines enterprises as falling into one of the following three levels of practices and performance:</p> <p>Best-in-Class (20%) — Manufacturing and ERP practices that are the best currently being employed and significantly superior to the industry norm, and result in the top industry performance.</p> <p>Industry norm (50%) — Manufacturing and ERP practices that represent the average or norm, and result in average industry performance.</p> <p>Laggards (30%) — Manufacturing and ERP practices that are significantly behind the average of the industry, and result in below average performance</p> <p>In the following categories:</p> <p>Process — What is the scope of process standardization? What is the efficiency and effectiveness of this process?</p> <p>Organization — How is your company currently organized to manage and optimize this particular process?</p> <p>Knowledge — What visibility do you have into key data and intelligence required to manage this process?</p> <p>Technology — What level of automation have you used to support this process? How is this automation integrated and aligned?</p> <p>Performance — What do you measure? How frequently? What’s your actual performance?</p>

Source: Aberdeen Group, July 2007

Table 7: Relationship Between PACE and the Competitive Framework

PACE and Competitive Framework How They Interact
<p>Aberdeen research indicates that companies that identify the most impactful pressures and take the most transformational and effective actions are most likely to achieve superior performance. The level of competitive performance that a company achieves is strongly determined by the PACE choices that they make and how well they execute.</p>

Source: Aberdeen Group, July 2007

Appendix B: Related Aberdeen Research

Related Aberdeen research that forms a companion or reference to this report includes:

- [*The 2006 ERP in Manufacturing Benchmark Report*](#)
- [*The ERP in Manufacturing Research Preview*](#)
- [*ERP: The Last Bastion of Resistance to Software as a Service*](#)
- [*When Replacing ERP – Size Matters*](#)
- [*Taking the ERP Plunge for the First Time*](#)

Information on these and any other Aberdeen publications can be found at www.Aberdeen.com.

Author: Cindy Jutras, Vice President, ERP Research, Cindy.Jutras@Aberdeen.com

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