# ERP in Manufacturing 2012

The Evolving ERP Strategy

July 2012

Nick Castellina, Kevin Prouty

*Aberdeen Group*
A Harte-Hanks Company

# Executive Summary

Enterprise Resource Planning (ERP) has been defined as an operational and transactional system of record. With its roots in Material Requirements Planning (MRP) it has long been used by leading manufacturers to uncover untapped efficiencies, reduce costs, and provide visibility to managers to aid in informed decision making. Today, 92% of manufacturers have implemented ERP. Still, recent data finds that a successful ERP implementation goes well beyond just putting it into place. ERP, and the organization itself, should be constantly moving forward. Successful manufacturers tailor ERP in reaction to business change and needs. This can include adding new functionality or mobile access. This 7th annual Aberdeen benchmark, based on over 170 survey respondents in manufacturing, explores Best-in-Class approaches to manufacturers' evolving ERP strategy and performance.

Research Benchmark

Aberdeen's Research Benchmarks provide an in-depth and comprehensive look into process, procedure, methodologies, and technologies with best practice identification and actionable recommendations

## Best-in-Class Performance

Aberdeen used the following five key performance criteria to distinguish Best-in-Class companies:

- 18% reduction in inventory as a result of ERP
- 94% internal schedule compliance
- 97% inventory accuracy
- 97% complete and on-time delivery
- 3.37 days to close a month

## Competitive Maturity Assessment

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

- 56% have the ability to quickly alter ERP to reflect business change
- 70% have cross-functional continuous improvement teams
- 61% integrate manufacturing operations with product design

## Required Actions

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

- Share data with the extended enterprise
- Provide alerts to decision-makers when certain conditions occur
- Provide the ability to forecast and plan for demand

## Table of Contents

## Figures

## Tables

**Aberdeen** *Group*
A Harte-Hanks Company

# Chapter One:
# Benchmarking the Best-in-Class

## Business Context

Aberdeen's 2012 ERP Benchmark Survey, with 173 responding manufacturing organizations as of June 2012, found that 92% of manufacturing organizations currently have ERP implemented. This is an overwhelming majority; but still, Aberdeen's research, such as *To ERP or Not to ERP for SMBs: What Can ERP Do For Me?*, has found that some organizations have been able to achieve greater gains than others as a result of their ERP solution. ERP can be a substantial undertaking for any organization. As with any project, successful ERP implementations rely on a set of strategies from the definition of requirements, to selection, through installation, integration, and training as illustrated in *ERP Implementation and Training: A Guide to Getting Your Business in Gear*. Of course, these processes come further down the line. Why are manufacturing organizations implementing ERP in the first place?

Manufacturers were asked to indicate the "top two" business drivers impacting their ERP strategies (Figure 1). Forty-eight percent (48%) indicated a need to reduce costs. In today's competitive market, it is important to keep costs low in order to maintain profit margins as well as provide products to customers at an attractive price point. Therefore, these organizations are looking to ERP to help identify efficiencies to be gained and fine-tune processes.

**Figure 1: Top Drivers Impacting ERP Strategies**
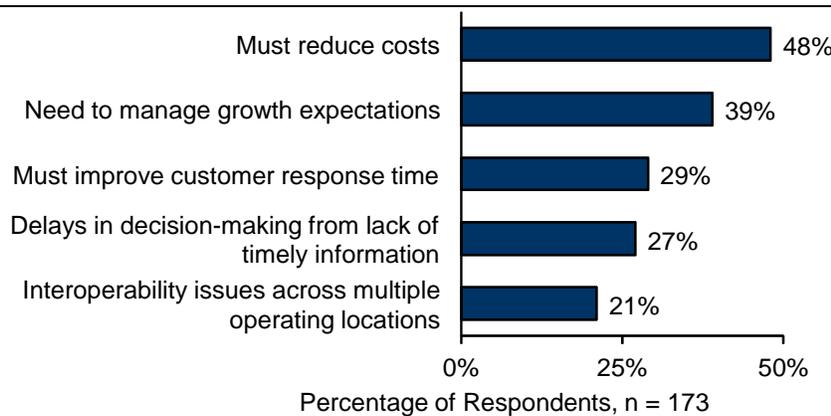


Source: Aberdeen Group, June 2012

At the same time, 39% indicated a need to manage growth expectations. This is an extension of the need to keep costs low. As organizations grow, business units, employees, and processes are often added, which create increasing costs that need to be controlled. These organizations are also handling more orders than ever before and need to be able to continue to perform to the same standards that made them successful in the first place. At the same time, this growth can cause interoperability issues across

**Fast Facts**

√ Ninety-four percent (94%) of the Best-in-Class have standardized procedures for procurement, cash collection, and financial reconciliation

√ The Best-in-Class are twice as likely as all others to have standardized procedures for order management and delivery.

"As our company changed direction and we sought to become a national brand, it became clear that we needed to have a more sophisticated system. Our management needed more detail than our legacy system could provide in order to drive the company in the direction they wanted to go."

~Nadine Intagliata, Supply Chain & IT Manager, Victoria Fine Foods, LLC

multiple operating locations. They need to introduce process improvements and standardize them across the organization. They also need visibility for decision-makers who may now be geographically removed from the day to day operations. Finally, these organizations need to promote collaboration and communication between employees and business systems across the distributed organization.

Manufacturers are also wary of the need to improve customer response time. These organizations are looking to process and ship orders as quickly as possible and also have vital customer information available in order to respond to requests, demands, and complaints. This will help to keep customers happy, attract new customers, and gain competitive ground in a volatile market.

Lastly, 27% of manufacturers reported a lack of timely information causing delays in decision-making. In today's 24x7 business world, managers need to be able to find the information that they need whenever and wherever they are in order to make informed decisions. This will provide these organizations with the ability to react immediately and mitigate adverse events and also take advantage of any opportunities that present themselves. For example, materials used for a certain product at one plant may be low while another plant may have a surplus of the same materials used for a different product. Without knowing this information immediately, the organization cannot ship these materials to the other plant in time and may have to halt production. Real-time visibility is essential to getting a leg up on the competition. On the other hand, Aberdeen's _Enabling Access to Big Data with Data Integration_ listed the difficulties associated with Big Data, defined as "the rapid growth and evolution of business data." The problems include those "associated with the amount of data, speed requirements for capture and analysis, increasingly complex analysis, and ways to leverage a wide range of data formats." These organizations must find a way to consume the data that they are collecting and actually make use of it.

The combination of all of these factors, and more, is prompting manufacturers to tailor their ERP strategies to make the most out of their investment. What follows is a guide to utilizing ERP effectively.

## The Maturity Class Framework

Aberdeen used five key performance criteria to distinguish the Best-in-Class from Industry Average and Laggard ERP implementations (Table 1). These Key Performance Indicators (KPIs) were chosen not only because every manufacturer should be measuring them, but because they are also indicative of a successful ERP implementation. Reducing inventory, providing greater accuracy, streamlining processes, and delivering on-time to customers keeps costs low, pleases customers, and leads to greater profits.

### Large vs. Small

Larger manufacturers are faced with a separate set of pressures than their smaller competitors. For large organizations, the issues that exist when operating across boundaries and with larger amounts of data have the potential of slowing the organization down. For smaller manufacturers, keeping costs low while continuing to improve customer satisfaction is a major factor in their quest for growth. These pressures are illustrated below:

**Large (more than $1billion)**

√ 43% Interoperability issues across multiple locations

√ 30% Delays in decision-making from lack of timely information

√ 30% Must reduce costs

√ 23% Inability to quickly react to business change without disruption

√ 23% Must improve customer response time

**Less than $1 billion**

√ 56% Must reduce costs

√ 40% Need to manage growth expectations

√ 30% Must improve customer response time

√ 25% Delays in decision-making from lack of timely information

√ 22% Need to be easier to do business with

**Table 1: Top Performers Earn Best-in-Class Status**

| Definition of Maturity Class | Mean Class Performance |
|---|---|
| **Best-in-Class:**<br>**Top 20%**<br>of aggregate performance scorers | ▪ 20% reduction in inventory levels<br>▪ 97% inventory accuracy<br>▪ 3.37 days to close a month<br>▪ 94% manufacturing schedule compliance<br>▪ 97% complete and on-time shipments |
| **Industry Average:**<br>**Middle 50%**<br>of aggregate performance scorers | ▪ 11% reduction in inventory levels<br>▪ 93% inventory accuracy<br>▪ 5.24 days to close a month<br>▪ 85% manufacturing schedule compliance<br>▪ 90% complete and on-time shipments |
| **Laggard:**<br>**Bottom 30%**<br>of aggregate performance scorers | ▪ 6% increase in inventory levels<br>▪ 82% inventory accuracy<br>▪ 8.19 days to close a month<br>▪ 73% manufacturing schedule compliance<br>▪ 84% complete and on-time shipments |

Source: Aberdeen Group, June 2012

## The Best-in-Class PACE Model

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

**Table 2: The Best-in-Class PACE Framework**

| Pressures | Actions | Capabilities | Enablers |
|---|---|---|---|
| ▪ Must reduce costs | ▪ Streamline and accelerate processes<br>▪ Standardize business processes | ▪ Standardized enterprise-wide procedures for production planning and execution<br>▪ Ability to do demand planning and forecasting<br>▪ Manufacturing operations are integrated and coordinated with product design<br>▪ Ability to automatically and immediately notify decision makers when certain conditions occur<br>▪ Ability to share with and integrate data from the extended enterprise<br>▪ Measure employee usage of individual modules and extensions of ERP | ▪ Integrated business applications serve as a complete and auditable system of record<br>▪ Users have access to ERP from mobile devices<br>▪ Event Management (Triggers & Alerts)<br>▪ Integrated ERP modules<br>▪ Extensions to ERP including MES, WMS, QMS, BI and others |

Source: Aberdeen Group, June 2012

**Aberdeen** *Group*
A Harte-Hanks Company

## Best-in-Class Strategies

In response to the pressures listed above, manufacturers are enacting a set of strategies that, with the aid of ERP, can help the organization to maintain consistency across geographic boundaries, keep costs low, and provide visibility to managers for agile decision-making. When comparing the Best-in-Class and all others (the combination of Industry Average and Laggards), two strategies come to the forefront (Figure 2).

**Figure 2: Strategic Actions of the Best-in-Class**



| | |
|---|---|
| Streamline and accelerate processes | 74% / 52% |
| Standardize business processes | 43% / 62% |
| Optimize the use of current capacity | 26% / 22% |
| Link global operations to improve interoperability and collaboration | 23% / 8% |
| Provide timely information to front-line employees | 23% / 24% |

■ Best-in-Class
□ All Others

Percentage of Respondents, n = 173
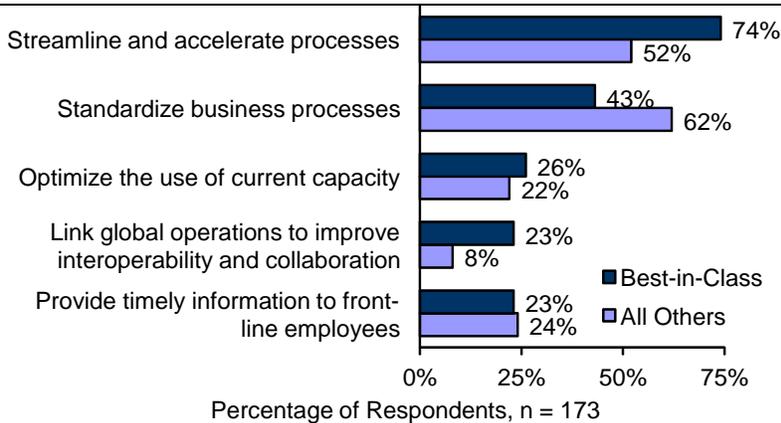
Source: Aberdeen Group, June 2012

First, 74% of the Best-in-Class are streamlining and accelerating processes compared to 52% of all others. The goal of this strategy is to promote efficiency and productivity. This will allow the organization to keep costs low as well as handle an increasing amount of orders with the same response rate and at the same level of quality. A part of streamlining processes is optimizing the use of current capacity, a strategy with a similar adoption rate in all maturity classes. This allows the organization to make the most of the resources it currently has, while managing growth expectations. By using the business process templates that ERP provides, these organizations can introduce best practices to the organization that will have an effect on the bottom line.

The other way in which the Best-in-Class have differentiated themselves when it comes to strategy is in linking global operations. The Best-in-Class are almost three times as likely as all others to have implemented this strategy. This is essential in order to deal with the interoperability issues that have risen across multiple locations. Having consistent business systems that can communicate across boundaries promotes visibility, communication, and collaboration.

All other manufacturers are more likely than the Best-in-Class to be standardizing business processes. It should be noted that what truly has the most impact on performance is the ability to actually execute on these strategies, and not just putting them into place. In this case, many Best-in-Class organizations have already standardized processes, as will be illustrated later in this report. Standardizing processes ensures consistency

"It's a must. To run a bigger international company, a consistent ERP solution is the only way to go."

~Jonas Pärssinen, Manager, TMHE

across the organization and, when combined with the best practices that ERP can provide, ensures that all employees, regardless of location, are performing optimally.

Lastly, Best-in-Class and all other manufacturers are equally as likely to be providing timely information to front-line employees. This is a direct response to the fourth leading pressure for manufacturers. By implementing this strategy of providing real-time data to as many employees as possible the organization is aiding its employees in making agile, informed decisions. Since decisions are being made at all levels of the organization, providing more users with access to data will promote a culture that relies on data and will result in an organization that is better educated on the factors that impact decisions.

These strategies are supported by ERP, along with its modules and extensions. For manufacturers, this means the ability to provide consistency across a distributed organization and produce quality products at lower costs.

## Aberdeen Insights — Strategy

As with any project, a successful ERP strategy begins with setting the foundation for success. When it comes to ERP strategies, this begins with selection, implementation, and employee training.

Data collected for Aberdeen's *ERP Implementation and Training: A Guide to Getting Your Business in Gear* found the top pressures facing manufacturers in the ERP implementation process (Figure 3). When there is a need to receive a return on investment as quickly as possible the organization will run into many obstacles along the way. For example, 47% of manufacturers indicated that they either lacked the internal resources for an ERP implementation, or that the resources they do have do not have the time to be taken away from their daily responsibilities. ERP can be a big commitment and the organization must find a way secure that commitment from employees without hindering ongoing operations.

**Figure 3: ERP Implementation Pressures**



Percentage of Respondents, n = 61
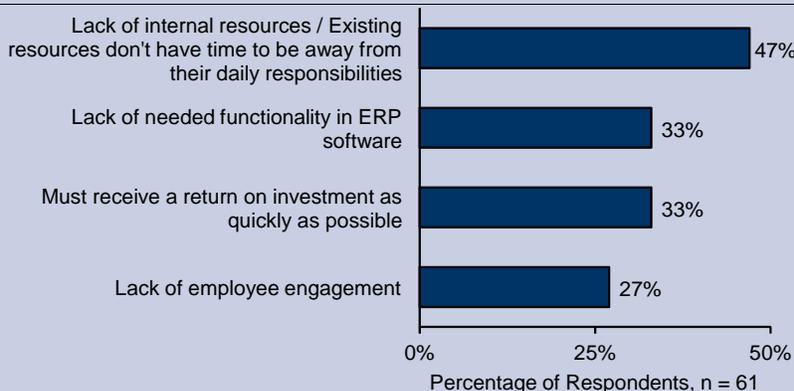
Source: Aberdeen Group, March 2012

*continued*

### ERP Implementation Leaders and Followers

Data from Aberdeen's ERP Selection, Implementation, and Training survey groups 61 manufacturers into two maturity classes:

√ **Leaders**: Top 35% of respondents based on performance

√ **Followers:** Bottom 65% of respondents based on performance

In this report, leading midmarket organizations achieved:

√ 14% reduction in operational costs as a result of ERP

√ 13% improvement in profitability over the last two years

√ 36% of employees exceed performance metrics in yearly reviews

√ ERP projects came in 7% under budget

√ ERP projects were completed 9% beyond pre-defined timeframe

Aberdeen *Group*
A Harte-Hanks Company

## Aberdeen Insights — Strategy

While ERP lacking the needed functionality is a result of poorly chosen ERP selection criteria, many of the strategies that leading manufacturers are choosing in the ERP implementation process are aimed at engaging employees (Figure 4).

**Figure 4: Implementation Strategies**

Percentage of Respondents, n = 61
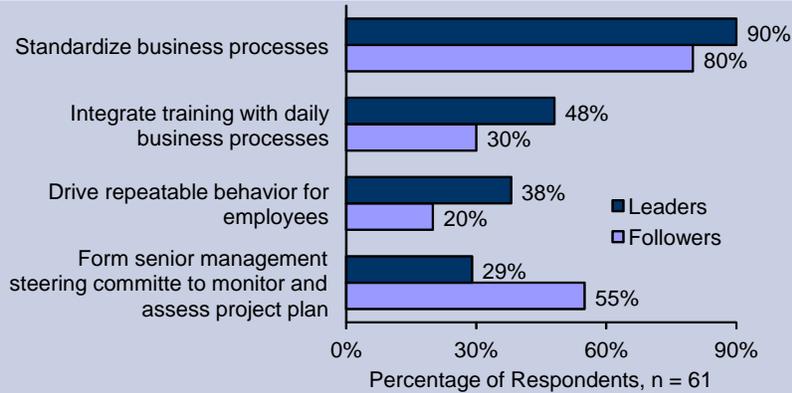
Source: Aberdeen Group, March 2012

Actually getting employees to accept ERP and integrate it with their daily lives is the key to getting the full benefits out of ERP. Forty-eight percent (48%) of leaders are integrating training with daily business processes compared to 30% of followers. This not only minimizes disruption to the business, but it also shows these employees exactly how using ERP will impact them on a daily basis. Further, 38% of leaders are driving repeatable behavior for employees. These employees will then consistently go to ERP and the organization as a whole will maximize its investment.

There is so much more than just employee training when it comes to implementing ERP effectively. For a more detailed look at how to sculpt a successful ERP project plan, refer to Aberdeen's *ERP Implementation and Training: A Guide to Getting Your Business in Gear*.

In the next chapter, we will see what the top performers are doing to achieve these gains.

Aberdeen *Group*
A Harte-Hanks Company

# Chapter Two:
# Benchmarking Requirements for Success

Using ERP as a template for standardization of business processes, as well as the integration and coordination of people, processes, and technology can have a significant impact on the benefits achieved the ultimate performance of the business.

## Case Study

Take, for example, a grower, canner, and distributor of canned tomatoes and tomato-based products. This company has three production facilities, six distribution centers, and 13 3PL warehouses across the United States. It delivers its family of products to stores and supermarkets all over the country in large volumes while maintaining absolutely consistent quality for every one of the between 3,000 and 4,000 SKUs it puts out every month.

A senior project manager, who works for the Director of Supply Chain, was brought on in 2002 to expand the company's use of ERP, particularly for planning and scheduling. When he started with the company he was walking into an unwieldy ERP situation. The company had installed an ERP system in 1995, but it was misused and underutilized. The business has always maintained a very high transaction count, but the company was performing all tasks manually. The company was using ERP simply as an order entry tool and attempting with little success to use it as an inventory tool. Such a blunt approach to ERP had worked for the company for years. However, as the organization was expanding and developing new processes and business units, it became clear that the ERP system needed to be tailored to reflect the present business.

The company is still using the same ERP system, but has found ways to derive more benefits from it as the organization continues to grow and change. According to the senior project manager, the company's business "is gradually evolving to become more of an integrated business being driven by an ERP system." The company has now implemented full distribution planning, master scheduling, and material requirements planning generations. Production is now determined by a demand forecasting system that loads directly into the ERP system and is run every night. The company's purchasing organization has also benefitted as the ERP system has stabilized the procurement of large quantities of raw materials. The company takes advantage of the productivity tools in ERP to keep its bills of material maintained, which is essential in the food business. An improved planning process and the resulting stabilization of the business have enabled the company to reduce headcount. As the company continues to evolve, the company's success will be tied to ERP's ability to evolve with it.

## Fast Facts

√ In 76% of Best-in-Class manufacturers, decision-makers can drill down to individual transactions from summary data

√ The Best-in-Class are 242% more likely than all others to have role-based homepages for users

Aberdeen *Group*
A Harte-Hanks Company

## Competitive Assessment: Capabilities and Enablers

Aberdeen Group analyzed the aggregated metrics of surveyed companies to determine whether their performance 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 (demonstrated ability to standardize processes and ERP implementation); (2) organization (executive commitment and assigned ownership of ERP implementation); (3) knowledge management (providing visibility in order to drive decision-making); (4) technology (effective use of modules of and extensions to ERP, along with providing users with immediate access to data, regardless of location); and (5) performance management (the ability of the organization to measure its results to improve its business). These characteristics serve as a guideline for best practices, and correlate directly with Best-in-Class performance across the key metrics.

### Table 3: The Competitive Framework

| | Best-in-Class | Average | Laggards |
|---|---|---|---|
| **Process** | Standardized enterprise-wide procedures for production planning and execution | | |
| | 68% | 59% | 26% |
| | Ongoing ability to quickly change ERP solution to react to business change | | |
| | 56% | 32% | 24% |
| **Organization** | Manufacturing operations are integrated and coordinated with product design | | |
| | 61% | 48% | 39% |
| | Cross-functional continuous improvement teams are responsible for improving operational performance | | |
| | 70% | 61% | 32% |
| **Knowledge** | Ability to share with and integrate data from the extended enterprise | | |
| | 70% | 35% | 17% |
| | Real time visibility into status of all processes from quote to cash | | |
| | 62% | 45% | 29% |
| **Technology** | Integrated business applications serve as a complete and auditable system of record | | |
| | 85% | 54% | 48% |
| | Users have access to ERP from mobile devices | | |
| | 36% | 20% | 7% |
| **Performance** | Measurement of accuracy of demand planning and forecasting | | |
| | 48% | 31% | 20% |
| | Quantifiable business benefits resulting from overall implementation of ERP are measured | | |
| | 72% | 25% | 14% |

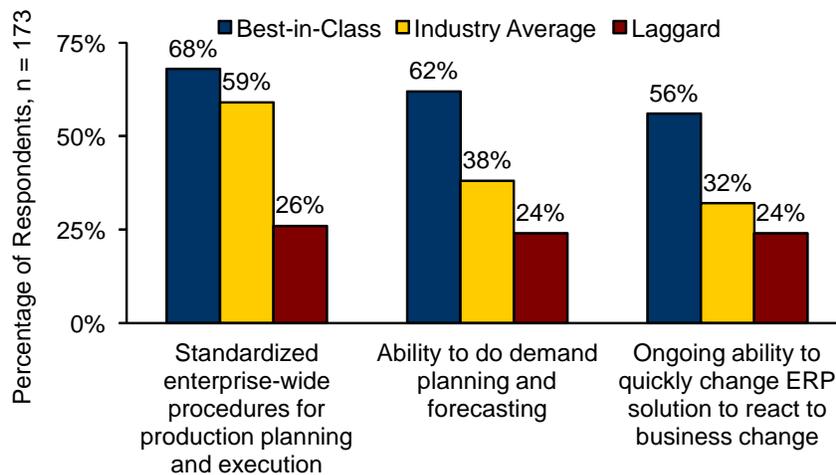Source: Aberdeen Group, June 2012

### The Results

Based on the findings of the Competitive Framework and interviews with end users, Aberdeen's analysis demonstrates that significant benefits can be gained from an integrated ERP solution. The Best-in-Class have reported the following quantifiable business benefits gained through the implementation of the following capabilities:

√ The Best-in-Class are 2.5 times as likely as all others to report a reduction in operational costs

√ The Best-in-Class are 146% more likely than all others to report a reduction in inventory costs

√ The Best-in-Class are over three times as likely as all others to report a reduction in waste

√ The Best-in-Class are 144% more likely than all others to better utilize resources

√ The Best-in-Class are 2.6 times as likely as all others to report improved labor utilization

Aberdeen Group
A Harte-Hanks Company

## Process

The ability to standardize processes is a key benefit of ERP software. It was noted above that all others are more likely than the Best-in-Class to be enacting a strategy to standardize processes. The data shows that the Best-in-Class are more likely to actually to have this capability in place. In order to please customers, it is important to provide products at a consistent level of quality. As such, the Best-in-Class are 45% more likely than all others to standardize procedures for production planning and execution across the organization (Figure 5). Beyond that, the Best-in-Class are more likely than all others to standardize a series of front and back-office processes. These include procurement, cash collection, financial reconciliation, and order management and fulfillment. Standardizing procedures across the organization ensures that best practices are adhered to and that the organization provides a united front to customers.

**Figure 5: Standardizing and Enhancing Processes**



Source: Aberdeen Group, June 2012

One way in which processes are improved through ERP is in the ability to do demand planning and forecasting. This process is essential to the bottom line and the ultimate success of a business. When manufacturers can accurately forecast demand for their products, they are less likely to run into a certain situation where they have produced too much product and it goes unsold, sitting on the shelf. Additionally, the organization is never in a situation where they have too few of a particular product and are missing out on valuable revenue. This capability also gives the organization the ability to make smarter investments when it comes to the procurement of materials, with the added benefit of being able to secure better prices. The Best-in-Class are 88% more likely than all others to have this capability.

Lastly, the Best-in-Class are almost twice as likely as all others to have an ongoing ability to quickly change their ERP solution to react to business change. As operations expand, there is a high likelihood of changes being

"Joining a local user group has helped us get the most out of our ERP. We benefit greatly from being able to pick up the phone an tap multiple resources. There is enormous value in gaining knowledge from peers to supplement the support of an ERP vendor."

~Scott Schulz, CFO, Water Gremlin Co.

made to the business. This could be new processes, business units, subsidiaries, product lines, or a varying set of other changes. As the system being used to run the business itself, ERP needs to be tailored to reflect these changes. At the same time, these changes should not be disruptive to the business. Successful manufacturers select ERP solutions that are susceptible to change and work with their vendors to facilitate this process.

## Organization

As noted above, the Best-in-Class are almost three times as likely as all others to be linking global operations to promote interoperability and collaboration. With its ability to connect business users from disparate parts of the organization, one of the biggest benefits of ERP is its impact on collaboration. Collaboration allows organizations the ability to get the most out of each individual employee's skillset. It is also essential to collaborate between business units that have an immediate effect on each other. For example, changes that are made to a new product in the R&D department are going to have an effect on the employees in the plant that are producing that product. As such, 61% of the Best-in-Class integrate and coordinate manufacturing operations with product design compared to 45% of all others (Figure 6). Additionally, this collaboration should extend outside the organization. Having sales staff communicate with customers and then feed that input back to product design will result in products that are more attractive to customers. Best-in-Class manufacturers are 39% more likely than all others to have this capability.

**Figure 6: Collaborating Internally and Externally to Improve**
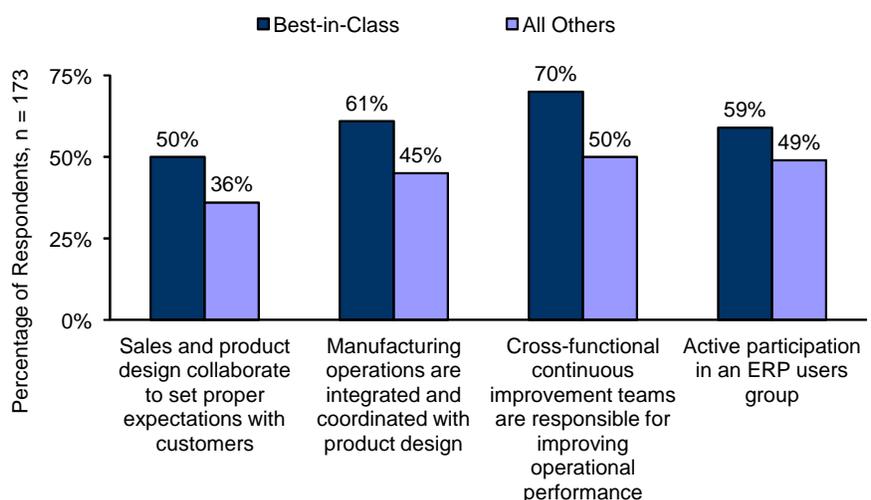


Source: Aberdeen Group, June 2012

Utilizing these enhanced collaboration capabilities to improve the business is crucial for manufacturers. Seventy-percent (70%) of the Best-in-Class have cross functional continuous improvement teams that are responsible for improving operational performance. This goes beyond sharing best practices

for processes and identifying efficiencies that can be gained; these teams can also be used to improve ERP performance. This includes promoting a better understanding of how the system is to be used as well as promoting its utilizations by more employees and units in the organization. This can include sharing best ERP practices from one unit or job role to another. It can be used to identify functionality that is needed. ERP should be continually improving along with the organization.

Learning about how to get the most out of ERP is not something that should only exist within the organization itself. Over half of all manufacturers belong to an ERP users group. The organization can then connect with its peers to learn about new functionality along with tips on utilizing ERP itself and engaging with employees. The goal is to use these tactics to gain the greatest possible benefits from ERP.

## Knowledge Management

As operations expand globally, and managers are further removed from day-to-day operations, it becomes more difficult for them to make informed decisions. ERP provides these decision-makers with access to the data that they need to guide the organization. Of course, this data is only useful if it is accurate and up to date. Making decisions based on old data could have drastic effects on the organization. Best-in-Class manufacturers are 43% more likely than all others to have real-time visibility into the status of all processes from quote to cash (Figure 7). Additionally, they are almost twice as likely as all others to receive immediate alerts when certain conditions occur. They can then react immediately, whether that means halting production or ordering more materials. This gives the organization an ability to better mitigate adverse events or take advantage of opportunities as they present themselves.

**Figure 7: Data Drives Decisions**



Source: Aberdeen Group, June 2012
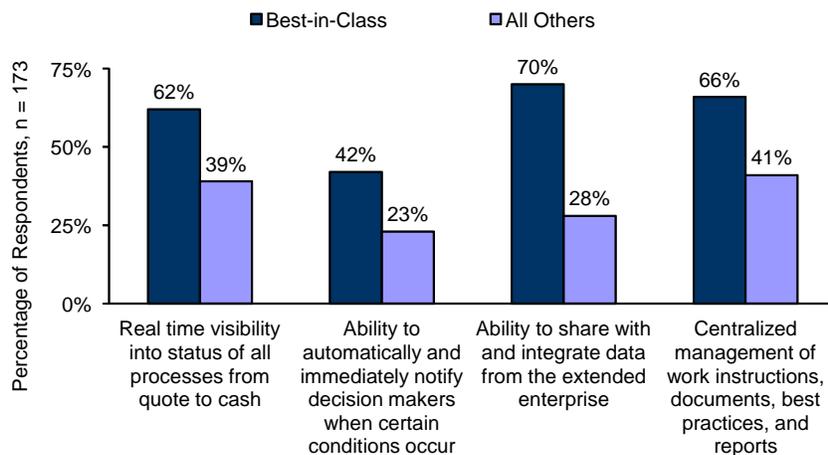
Aberdeen *Group*
A Harte-Hanks Company

When making decisions, it is important to include all factors that impact the organization. There are many external factors that impact an organization's ability to plan and forecast. For example, manufacturers are extremely reliant on supplier organizations. If a manufacturer is forecasting demand for a specific product, but a supplier of key materials is not going to be able to supply key components, the feasibility of achieving that forecast is greatly diminished. Integrating data with supplier organizations would keep the manufacturer informed of these potential pitfalls. On the other side, integrating with resellers allows the organization to better forecast demand. The organization can then make smarter investments knowing the potential to perform and sometimes secure cheaper materials. The value of this is demonstrated by the fact that Best-in-Class manufacturers are 150% more likely than all others to share data with the extended enterprise.

All of this data is great, but how are employees going to actually know what to do with it? Where are they going to find it? Beyond that, are all of these employees even properly informed on the best practices used to do their jobs? ERP gives organizations a place to centrally manage work instructions, documents, best practices, and reports. The Best-in-Class are 61% more likely than all others to have this capability.

## Technology

As a complete and auditable system of record, ERP is able to help run a manufacturing organization from all angles. The modules that are included in ERP are used to standardize processes and track all data. These modules also interact with one another to be a single source of truth for the organization as a whole. Best-in-Class manufacturers are more likely than all others to be taking advantage of the individual modules contained in ERP (Table 4). From general ledger for the accounting department down to master production scheduling on the shop floor, ERP is designed to benefit the business as a whole. For example, the data above indicates that Best-in-Class manufacturers are 150% more likely than all others to share data with the extended enterprise. In order to facilitate this process the Best-in-Class are 67% more likely than all others to have an enterprise data interchange translator. The combination of all of these modules is what makes ERP a viable platform for manufacturers to run themselves on.

"ERP decreased redundant data and processes, which in turn increased efficiency and accuracy and saved significant dollars. We combined our ERP solution with our Business Intelligence solution to analyze and increase visibility in all areas of our business."

~Nanette Zander, Vice President, Azteca Foods, Inc.

**Table 4: Modules of ERP**

| Module | Best-in-Class | All Others |
|---|---|---|
| Accounts Payable | 94% | 85% |
| General Ledger | 89% | 84% |
| Inventory Control | 89% | 83% |
| Order Management | 86% | 73% |
| Master Production Scheduling | 74% | 54% |
| Fixed Asset Management | 63% | 38% |

| Module | Best-in-Class | All Others |
|---|---|---|
| Forecasting / Demand Planning | 57% | 41% |
| Capacity Requirements Planning | 54% | 29% |
| Enterprise Data Interchange translator | 40% | 24% |
| Engineering Change Management | 37% | 35% |
| Supplier Collaboration / Scheduling | 31% | 11% |

Source: Aberdeen Group, June 2012

Of course, there are instances where manufacturers are using more than just ERP to run their businesses. There may be instances where legacy systems are necessary or the organization feels that they want to extend the functionality of ERP with other software. In these instances, it is important to ensure that the other software is integrated and communicates with ERP. Otherwise, there will be redundancies and mistakes in the data and the whole point of having an end to end solution is diminished. Best-in-Class manufacturers are 63% more likely than all others to have integrated business systems serve as a complete and auditable system of record (Figure 8). Additionally, the Best-in-Class know the advantage of making it easy for their employees to actually use the data. The Best-in-Class are 2.7 times as likely as all others to enable employees to complete processes between multiple applications without disruption. They are over twice as likely to have data shared between applications seamlessly and transparently. Thus, employees have a one stop shop for data and are more likely to seek it out and use it for all decisions.

**Figure 8: One Stop Shop for Data**



Source: Aberdeen Group, June 2012
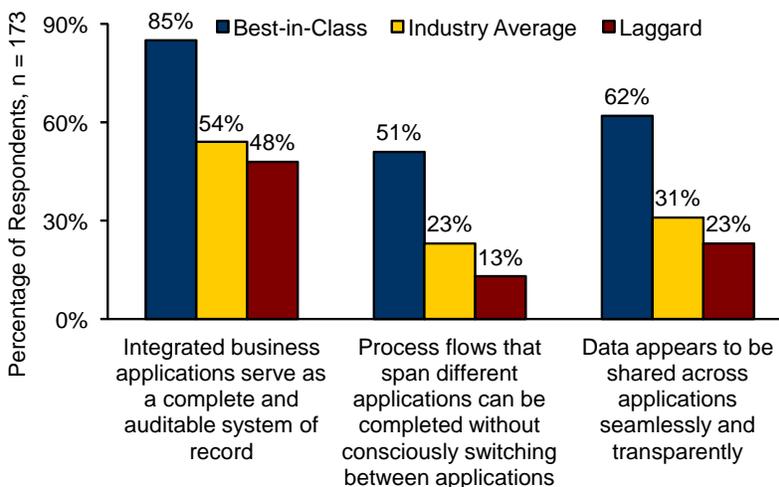
"ERP gives us a global view of all the information, consolidation of roles and responsibilities, consolidation of IT resources (people and equipment), and additional functionality for 4PL implementation, profit center accounting, etc."

~James Mathay, Staff, Momentive Performance Materials

So what is the software that manufacturers are integrating to extend ERP? In manufacturing, the Best-in-Class are far outweighing all others when it

comes to solutions that specifically aid in manufacturing such as manufacturing execution systems, which enhance the ability to manage manufacturing operations themselves (Table 5). In order to produce the best possible products and better please customers, the Best-in-Class are five times as likely as all others to implement product lifecycle management and 75% more likely to implement a quality management system. The Best-in-Class are more likely to implement job costing to help contain costs. They are also almost twice as likely as all others to implement warehouse management to aid in the distribution side of the business. Lastly, as Aberdeen has illustrated in *ERP plus BI: Maximizing the Return on your ERP Investment*, Best-in-Class manufacturers are using business intelligence or analytical tools to take the data contained in ERP and make it more consumable for informed, agile decision-making. This helps to mitigate the effects of Big Data.

**Table 5: Extensions of ERP**

| Extension | Best-in-Class | All Others |
|---|---|---|
| Manufacturing Execution System | 52% | 32% |
| Business Intelligence | 45% | 29% |
| Warehouse Management | 45% | 23% |
| Estimating / Quoting / Job Costing | 42% | 27% |
| Quality Management System | 42% | 24% |
| Product Lifecycle Management | 40% | 8% |

Source: Aberdeen Group, June 2012

### Performance Management

It is difficult to manage that which is not measured. Since continuous improvement is so important in manufacturing, measuring performance is essential to improve processes. ERP greatly facilitates a manufacturer's ability to measure the impact of its actions on the overall performance of the organization. They can then see what is working and what is not and make alterations. Best-in-Class manufacturers are 78% more likely than all others to measure the accuracy of demand planning and forecasting (Figure 9). This allows them to see how successful past projections were and to adjust their forecasts moving forward. The result is greater accuracy and better investments.
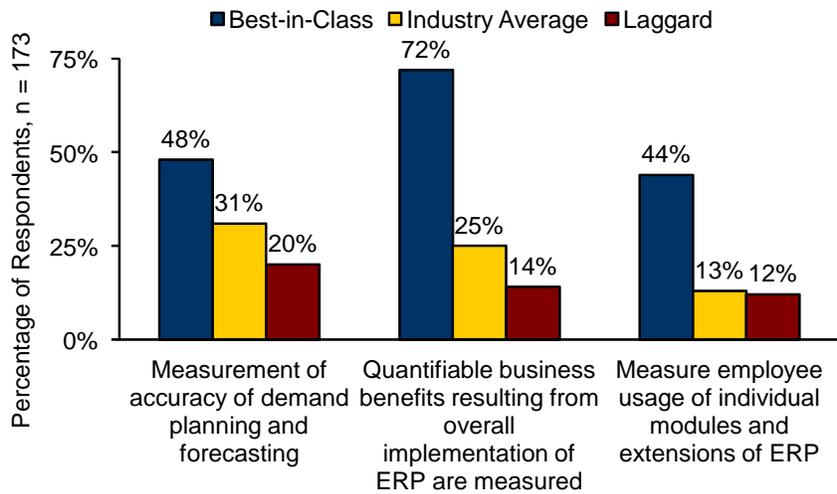
**Fast Fact**

√ Sixty-two percent (62%) of the Best-in-Class would prefer to purchase extensions to ERP from their ERP vendor compared to 46% of all others

**Figure 9: Measure to Improve**



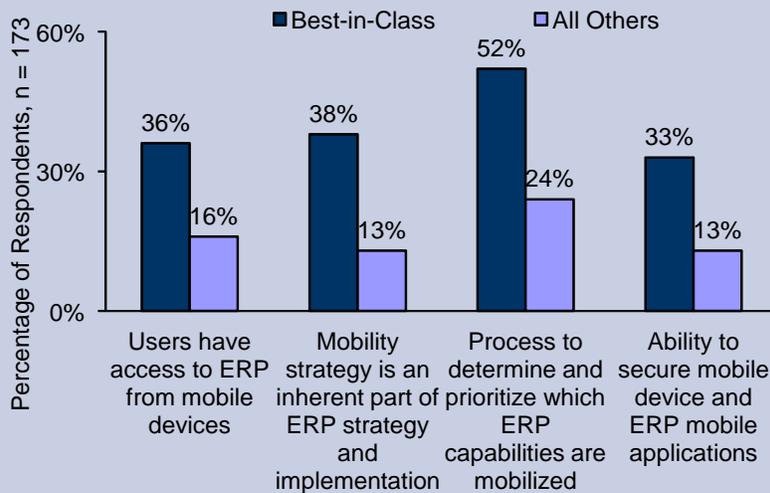Source: Aberdeen Group, June 2012

**The Benefits of ERP**

Best-in-Class manufacturers are reporting the following direct benefits as a direct result of ERP in comparison to all others:

√  Improvement in inventory turns: 65% vs. 29%

√  Reduction in operational costs: 19% vs. 8%

√  Reduction in administrative costs: 17% vs. 6%

√  Improvement in complete and on-time shipments: 17% vs. 12%

√  Reduction in inventory: 20% vs. 7%

√  Improvement in internal schedule compliance: 20% vs. 15%

√  Improvement in cycle time from service completion to invoicing: 18% vs. 10%

Lastly, it is important in manufacturing to measure the success of ERP itself. Best-in-Class manufacturers are almost 3.15 times as likely as all others to have the ability to measure quantifiable business benefits resulting from the overall implementation of ERP. They can then see where they are getting the most out of their ERP solution and which areas are lacking. Then they can put a greater focus on improving the usage of the modules and features that would impact the metrics that the organization could stand to improve. As an extension of this, the Best-in-Class are 238% more likely than all others to measure employee usage of individual modules and extensions of ERP. The organization can then see where they are getting the most value and alter training to promote areas that need improvement. The organization can all see if there are modules or extensions that are missing that will further benefit the organization. While even Laggard organizations are seeing quantifiable improvements from ERP (see sidebar), these benefits can always be increased with proper focus.

## Aberdeen Insights — Technology

In today's 24x7 business environment of volatile, competitive markets, organizations must do all that they can in order to give themselves every possible advantage over their competitors. Oftentimes, that competitive advantage is time. The ability to have access to data anywhere and at any time is essential for managers as they are often either traveling from business unit to business unit, or removed from units that have a need for executive support. While still in its early stages, more manufacturers are providing their employees with mobile access to ERP. In fact, the Best-in-Class are already twice as likely as all others to be providing their employees with this advantage (Figure 10).

**Figure 10: Mobility Matters**



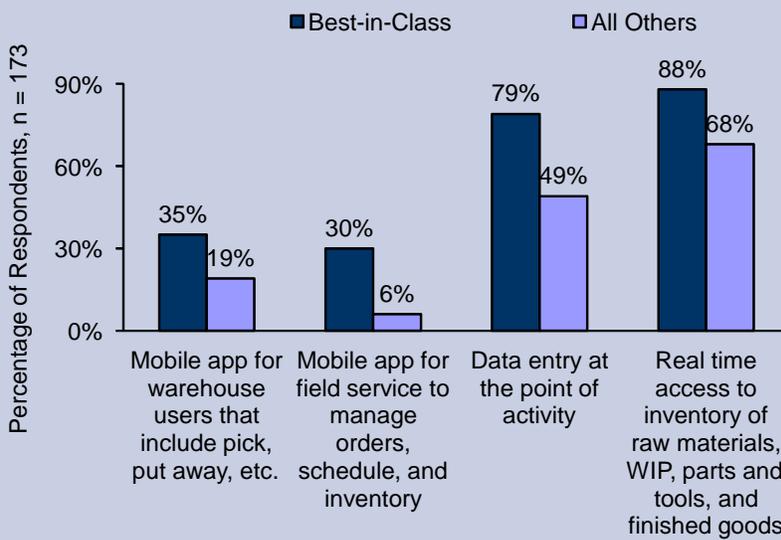Source: Aberdeen Group, June 2012

Still, as with any successful strategy the answer is not to simply give these employees mobile access and say "have at it." A mobility strategy should be an integral part of an overall ERP strategy. This is evidenced by the fact that the Best-in-Class are almost three times as likely as all others to include this emphasis. Beyond, that the Best-in-Class are over twice as likely as all others to have a process to decide which EPR capabilities are mobilized. Maybe the organization is wary of including financial data in this strategy. The organization has the opportunity to tailor its mobile ERP strategy to fit its needs and preferences. Of course, no matter which capabilities are mobilized, they should continue to be just as secure as the ERP system itself. The Best-in-Class are 154% more likely than all others to have the ability to secure mobile devices and mobile ERP applications.

*continued*

## Aberdeen Insights — Technology

So what are the actual capabilities that mobile ERP brings to the table? These capabilities are actually a source for streamlining processes and promoting efficiencies. For example, 79% of the Best-in-Class have data entry at the point of activity (Figure 11). This helps to avoid mistakes and provides data as it happens. Additionally, the Best-in-Class are 84% more likely than all others to have a mobile app for warehouse users, which greatly facilitates their processes. When it comes to mobile ERP there is greater access to real time data whether in the plant or out in the field. As a whole, mobile ERP brings the value of ERP data into an age where quick decisions are an absolute necessity.

### Figure 11: Mobile Capabilities



Source: Aberdeen Group, June 2012

Aberdeen *Group*
A Harte-Hanks Company

# Chapter Three:
# Required Actions

The ongoing success of an ERP system and its contribution to the success of an evolving manufacturing business is dependent on the overall ERP strategy. Best-in-Class companies have established ERP strategies that set guidelines for how a company defines, monitors, supports, and applies an ERP system. Whether a company is trying to move its performance 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

- **Standardize procedures.** As organizations grow, it becomes easier to lose track of what made the company successful in the first place. Additionally, it is increasingly important for manufacturers to improve customer interactions and deliver consistent products. Standardizing processes ensures that best practices are adhered to and that the company is providing a unified front. The Best-in-Class are 162% more likely than Laggards to have standardized procedures for production planning and execution. They are also over twice as likely to standardize a wide array of both front and back-office practices.

- **Collaborate internally.** The Best-in-Class are 56% more likely than Laggards to integrate and coordinate manufacturing operations with product design. These parts of the organization obviously have a huge effect on one another. By integrating the two, manufacturing can work with product design to ensure that new products are able to be produced without disruption, at a low cost, and with the highest possible quality. Existing products can also be altered to produce these same benefits as opportunities are discovered in the manufacturing process. Additionally, 85% of the Best-in-Class are integrating manufacturing operations with customer service, logistics, and delivery. ERP is helping to enable this collaboration.

- **Participate in an ERP users group.** Collaboration should not only exist internally. When it comes to ERP, Laggard organizations are not doing as good of a job of utilizing the business system to its fullest extent. Why not take the time to learn from some better performing peers? Only 36% of Laggards actively participate in an ERP users group. The knowledge gained from participation would help to maximize the return on ERP.

## Industry Average Steps to Success

- **Share data with the extended enterprise.** There are many factors outside the organization that can have an impact on the accuracy of plans, budgets, and forecasts. Suppliers, customers, resellers, and regulatory bodies have their own invaluable data. To

**Fast Facts**

√ The Best-in-Class are over twice as likely to receive automatic alerts when scheduled activities fail to occur on time

√ Forty-seven percent (47%) of the Best-in-Class have access to event management

"The ERP implementation revealed deficiencies in the way some of our processes were designed. It helped reorganize the company."

~Vice President, Industrial Product Manufacturer

ensure accuracy, these factors need to be taken into consideration. The Best-in-Class are twice as likely as the Industry Average to have the ability to share data with the extended enterprise. Having the ability to integrate this data with ERP enables more informed and confident decisions.

- **Measure the benefits of ERP.** In order to get the greatest ROI from ERP the organization needs to understand what is and is not working with an ERP implementation. By measuring the benefits of ERP, the organization can identify areas that can be improved and additional functionality that may be needed. Only 25% of the Industry Average have this capability in comparison to 72% of the Best-in-Class.

- **Select an ERP that provides the ability to be quickly tailored to react to business change.** As organizations grow, they often add people, processes, business units, and products. Since ERP is a reflection of the business itself, ERP needs to be altered accordingly. The most successful organizations are able to do this without disruption to the business and at the lowest possible cost. The Best-in-Class are 75% more likely than the Industry Average to have the ongoing ability to tailor ERP to reflect business change.

## Best-in-Class Steps to Success

- **Mobilize.** While only 35% of the Best-in-Class are providing access to ERP on a mobile device, they are still 2.25 times as likely to be doing this as all others. Providing this access means that decision-makers can be constantly connected no matter where or when they are. There are instantly alerted to changes and can alter plans in order to mitigate adverse events or take advantage of opportunities as they present themselves. Delays in decision-making are now the onus of the people, not the technology.

- **Measure employee adoption.** The key to maximizing ROI from ERP is employee engagement. Monitoring which employees are using which modules at which rates, and the increases gained from ERP allows organizations to better tailor training materials and ERP itself. While Aberdeen has found that there is some correlation between this capability and Best-in-Class performance, less than half of the Best-in-Class actually have this capability.

- **Look to manufacturing specific modules and extensions of ERP.** Modules and extensions such as master production scheduling, engineering change management, quality management systems, and manufacturing execution systems help manufacturers to get further control of their businesses. Still, according to this survey's data, they are not all pervasive amongst the Best-in-Class. By combining these enablers with ERP, Best-in-Class manufacturers will find further visibility into their businesses and identify further

efficiencies. Beyond that, a little over half of the Best-in-Class are not utilizing BI to take advantage of the data contained in ERP, and thus are not able to reap its full benefits.

## Aberdeen Insights — Summary

Successful ERP strategies can truly transform manufacturing organizations. Manufacturers today are pressured with rising costs, shorter decision windows, growth aspirations, and demanding customers. ERP provides that ability to discover potential efficiencies, increase visibility, and perform as a more cohesive organization. Providing that collaboration between manufacturing operations and other parts of the organization produces more attractive products to customers at a lower cost. This is the key to getting ahead in a competitive market. Of course, simply installing ERP is not the complete answer. The organization must be able to tailor ERP in response to business change and make a continued commitment to the success of ERP. In this future, mobile access will be a necessity. Today's manufacturers face a volatile environment, but with a well thought out ERP strategy, they can evolve to put themselves into the position to succeed.

**Aberdeen** *Group*
A Harte-Hanks Company

# Appendix A:
# Research Methodology

Between May and June 2012, Aberdeen examined the use, the experiences, and the intentions of over 170 manufacturers using ERP in a diverse set of industries.

Aberdeen supplemented this online survey effort with interviews with select survey respondents, gathering additional information on ERP strategies, experiences, and results.

Responding enterprises included the following:

- *Job title:* The research sample included respondents with the following job titles: C-Level (20%); EVP / SVP / VP / GM (9%); Director (17%); Manager (29%); Staff and other (25%).

- *Functional Area*: Corporate Management (6%), Finance / Administration (10%), Information Technology (40%), Manufacturing & Operations (16%), Logistics/Supply Chain (22%), Other (6%)

- *Industry:* The research sample included respondents from the following industries: discrete manufacturing (52%); process manufacturing (20%); hybrid of discrete and process (28%)

- *Geography:* The majority of respondents (79%) were from the Americas. Remaining respondents included those from the Asia-Pacific region (6%) and EMEA (15%)

- *Company size:* Twenty percent (20%) of respondents were from large enterprises (annual revenues above US $1 billion); 38% were from midsize enterprises (annual revenues between $50 million and $1 billion); and 42% of respondents were from small businesses (annual revenues of $50 million or less).

- *Headcount:* Fourteen percent (14%) of respondents were from large enterprises (headcount greater than 5,000 employees); 41% were from midsize enterprises (headcount between 251 and 5,000 employees); and 45% of respondents were from small businesses (headcount between 1 and 250 employees).

**Study Focus**

Responding manufacturing executives completed an online survey that included questions designed to determine the following:

√ The degree to which ERP is deployed in their operations

√ The structure and effectiveness of existing ERP implementations

√ Current and planned use of ERP

√ The business benefits that have been derived from ERP initiatives

The study aimed to identify emerging best practices for ERP usage in manufacturing, and to provide a framework by which readers could assess their own management capabilities.

**Table 6: The PACE Framework Key**

| Overview |
|---|
| 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:<br><br>**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)<br><br>**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)<br><br>**Capabilities —** the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products / services, ecosystem partners, financing)<br><br>**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) |

Source: Aberdeen Group, June 2012

**Table 7: The Competitive Framework Key**

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

Source: Aberdeen Group, June 2012

**Table 8: The Relationship Between PACE and the Competitive Framework**

| PACE and the Competitive Framework – How They Interact |
|---|
| Aberdeen research indicates that companies that identify the most influential 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 those decisions. |

Source: Aberdeen Group, June 2012

# Appendix B:
# Related Aberdeen Research

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

- *ERP plus BI: Maximizing the Return on your ERP Investment*; June 2012

- *To ERP or Not to ERP for SMBs: What Can ERP Do For Me?*; May 2012

- *ERP Implementation and Training: A Guide to Getting Your Business in Gear*; April 2012

- *ERP and Lean*; March 2012

- *ERP in High Tech: Driving Innovation with Insight*; February 2012

- *SaaS and Cloud ERP Trends, Observations, and Performance 2011*; December 2011

- *SaaS and the Multi-tiered ERP Strategy*; November 2011

- *ERP in Manufacturing 2011: Defining the ERP Strategy*; June 2011

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

To take part in Aberdeen's 2012 ERP research, click here.

Authors: Nick Castellina, Research Analyst, Enterprise Applications, (nick.castellina@aberdeen.com); Kevin Prouty, VP of Research, Enterprise Applications, (kevin.prouty@aberdeen.com)