

ERP in Food and Beverage Manufacturing

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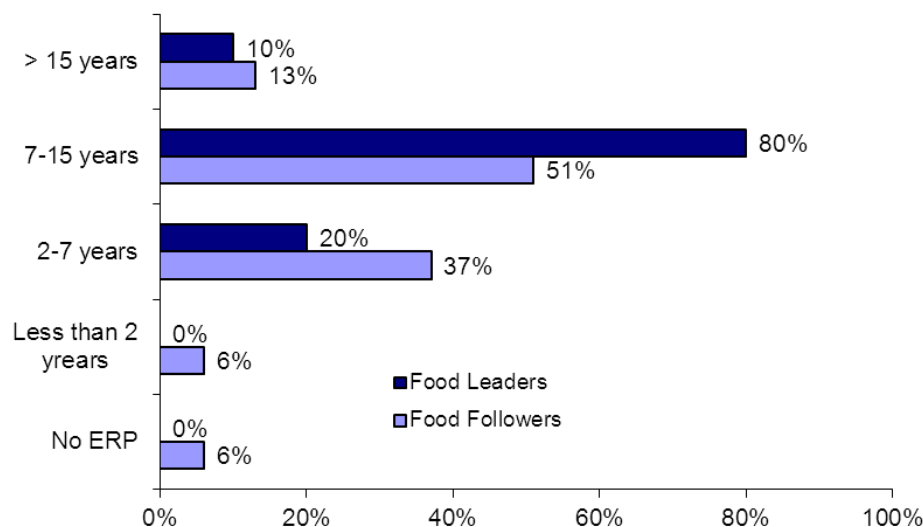
ERP in Food and Beverage Manufacturing

Food & Beverage (F&B) manufacturers started out slowly in adopting Enterprise Resource Planning (ERP) in the 1980's and 1990's. But as of December 2011, [Aberdeen's 2011 ERP survey](#) of almost 700 companies in all industries shows that F&B manufacturers have finally caught up with other industries, with over 95% using some form of ERP. The survey captured the responses of over 70 F&B manufacturers regarding the use and benefits of ERP.

Context

F&B manufacturers tend to have mature ERP systems, as shown in Figure 1. As you can see, 60% more Leaders than Followers, categories defined in Table 1 on Page 2, in the F&B industry tend to have systems in the 7-15 years range. The ERP sweet spot, as defined in Aberdeen's [Aging ERP: When Old ERP is Too Old](#), report from June 2011 is around seven years. The sweet spot is the period during which a company's ERP system is at the peak of its annual returns. Beyond seven years, a system's annual benefits tend to flatten out and stop accelerating. Also note that F&B Followers tend to have newer systems and more companies that don't use ERP at all.

Figure 1: Age of Current Primary ERP System



Source: Aberdeen Group, December 2011

That same research also showed that only 80% of all companies use a formal ERP system, compared to ERP's almost universal adoption in F&B, at around 95%.

Sector Insight

Aberdeen's Sector Insights provide strategic perspective and analysis of primary research results by industry, market segment, or geography

Sector Definition

The Food and Beverage manufacturing space is not a homogenous space. This is Aberdeen's community overview for Food and Beverage:

- √ Dairy
- √ Meat (Beef and Pork)
- √ Seafood
- √ Packaged Food
- √ Frozen Food
- √ Produce
- √ Bakery
- √ Poultry (including eggs)
- √ Beverages (including juice, and soft drinks, and water)

Key Pressures and Strategies of F&B Companies

Table I shows how Aberdeen defined the Industry Leaders and Followers in its maturity model. Using this maturity model, we can examine the performance difference between different ERP strategies in the F&B world.

Table I: Maturity Model and Performance of Companies with ERP

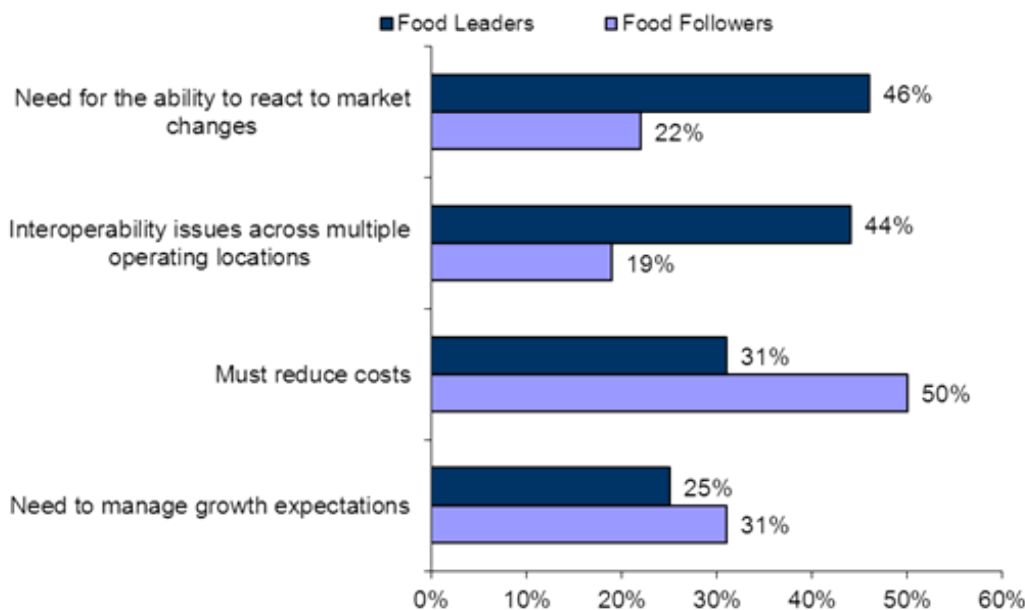
Definition of Maturity Class	Mean Class Performance
Industry Leaders: Top 35% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 37 days sales outstanding ▪ 4.8 days to close a month ▪ 96% inventory accuracy ▪ 94% complete and on-time shipments
Industry Followers: 65% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 51 days sales outstanding ▪ 7 days to close a month ▪ 92% inventory accuracy ▪ 87% complete and on-time shipments

Source: Aberdeen Group, December 2011

Note the inventory accuracy metric. In the F&B industry, failure to track inventory accurately quickly leads to write offs from spoilage in both finished goods and perishable raw materials.

Now that we know who the Leaders and Followers are for the industry, let's look at what drives their businesses. Figure 2 shows the pressures that F&B manufacturers feel in their businesses (respondents were asked to select their top two pressures).

Figure 2: Top Business Pressures for F&B Manufacturers



Percentage of Respondents, n = 74
Source: Aberdeen Group, December 2011

Research Methodology and Maturity Model

For the purposes of this document, Aberdeen's Maturity-Class Framework defines food and beverage manufacturers as falling into one of the following two levels of practices and performance:

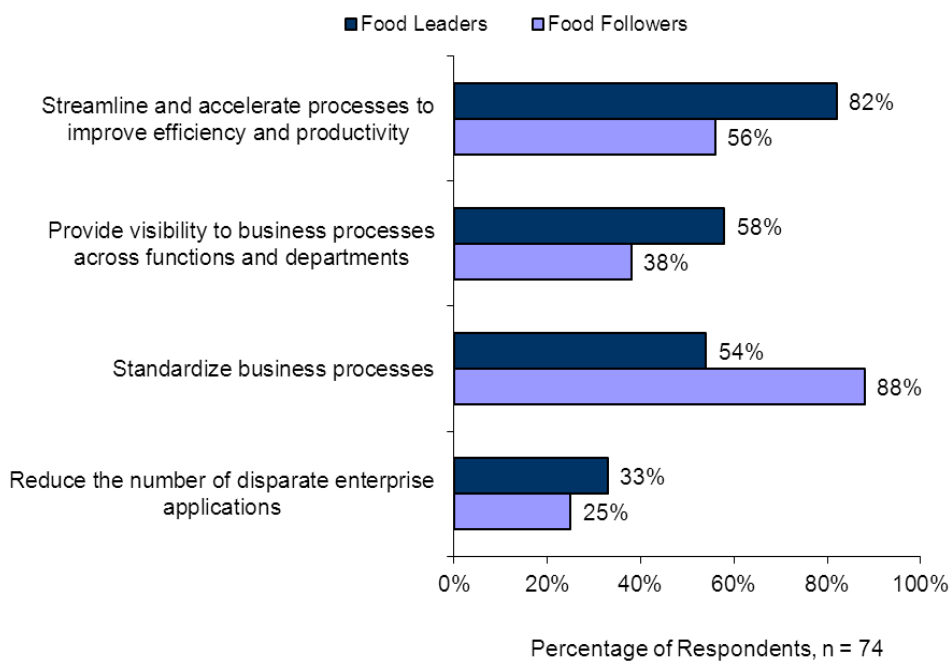
Industry Leaders (35%) — Top-performing companies evaluated based on days sales outstanding, days to close a month, inventory accuracy, and complete and on-time shipments.

Industry Average (65%) — All food and beverage manufacturers that are not Leaders.

Most would assume that cost was the universal driver for the F&B sector, since cost is traditionally a primary concern for manufacturing in general. Figure 2 shows that to be true for the typical F&B company, but not for the industry’s top performers, who listed cost as only the third highest pressure. F&B Leaders are more concerned about being able to react to market changes and drive operations across a distributed organization.

So, what are F&B companies doing about those pressures? Figure 3 shows the rankings of strategies in response to the above pressures.

Figure 3: Top Strategic Actions



Source: Aberdeen Group, December 2011

Looking at Figure 3, one might think that F&B Leaders are not concerned with business process standardization – that, content with their performance, they are stopping short of their potential. However, looking back at Figure 1, we see that Leaders have more mature ERP implementations. It’s pretty easy to conclude that, along with the implementing and maturing their ERP strategy, Leaders have most likely standardized as many of their business processes as they can. Meanwhile, Followers still have less mature ERP strategies or none at all, and are still fighting the standardization battle.

"ERP was the driver behind our successful initiative to move to just in time inventory. This led to lower inventory and lower cost of goods sold."

~ General Manager of Supply Chain, \$200M seafood processor

What Has ERP Done Lately

With Table 1 showing the performance definition of Leaders, we can study the impact of ERP on the performance of F&B manufacturers. Table 2 shows that Leaders derive significant benefits from their ERP systems. Even Followers using ERP get significant benefits from ERP, just not at the same level as top performers.

Table 2: Measurable Benefits Derived from ERP

Benefit achieved through ERP	F&B Leaders	F&B Followers
Reduced administrative costs	40%	38%
Reduced waste	40%	13%
Increased profits	50%	46%
Increased revenue	47%	16%
Increased value to customer through better reporting and compliance	40%	23%
Increased production with no added headcount	50%	23%
Reduced time-to-decision	50%	23%
Increased New Product Introduction (NPI)	20%	12%

Source: Aberdeen Group, December 2011

There is only a slight difference between Leaders and Followers in terms of cost. But when it comes to metrics like waste and improving revenue, Leaders are clearly ahead of Followers in getting benefits from the ERP strategy. Leaders are also more likely to identify increased value to customers through reporting and compliance as a benefit of their ERP. As the sidebar lays out, compliance in the F&B industry has been and remains a significant burden. As Table 2 shows, Leaders in the F&B industry are leveraging their ERP system and their ERP vendor to address that issue.

Table 2 also shows the benefit of ERP to time-to-decision and NPI metrics. In Figure 2 we saw that Leaders are most concerned about being able to react to market changes. Those two metrics show that Leaders are focusing their ERP strategies on being flexible and able to adapt to the market by not hesitating and increasing new product launches.

Capabilities of F&B Manufacturers

As important as any comparison of ERP system Leaders and Followers may be, the comparison of capabilities that F&B companies have is just as important to understanding their ERP strategy. We will break the capabilities down into bite-sized chunks to better study them.

The first capability we look at is managing and optimizing business processes. Figure 4 indicates that Leaders really have standardized their processes, and shows what progress Followers have made.

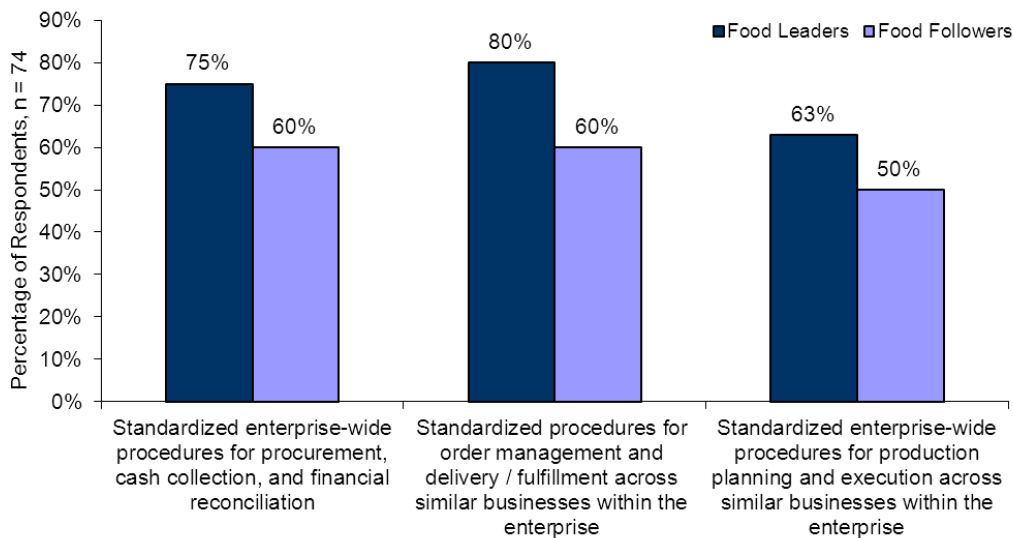
Food Safety Modernization Act of 2010 (FSMA10)

FSMA10 is focused on the Food and Drug Administration' (FDA's) ability to manage food and beverage manufacturers. Aberdeen's report [Food Safety and Traceability 2011](#) report showed the impact of FSMA has had on F&B companies:

- ✓ **29%** of companies increased frequency of audits
- ✓ **36%** increased the amount of supplier certifications and inspections
- ✓ **36%** have had to increase investment in technology
- ✓ **50%** have had to increase record and document storage

All of the above have some impact on ERP. The impact can be standard transactional tracking to document management extensions and integrations. But the end result is that F&B companies are having to be more diligent and invest in technology of some kind.

Figure 4: Business Process Capabilities

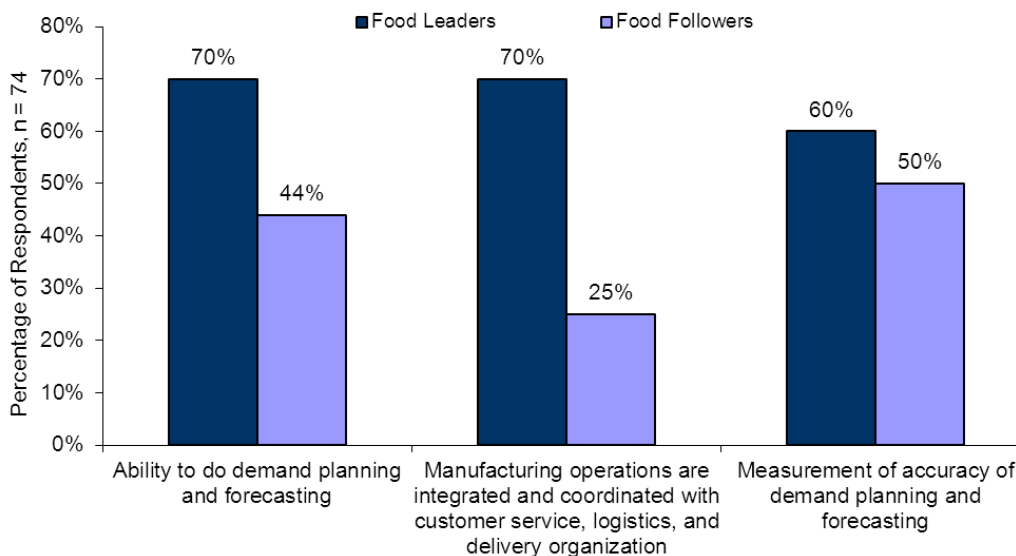


Source: Aberdeen Group, December 2011

Leaders have standardized processes in the cash management part of their business at 75% versus 60% for Followers. This difference goes a long way to explaining the difference in time to close books shown in Table I. In the order management process categories, the difference is just as pronounced, with Leaders outperforming Followers by over 25%.

Sales & Operations Planning (S&OP) is key to managing a business in a volatile market. Figure 5 highlights several capabilities that determine the maturity of a company's S&OP process and the impact of its ERP strategy.

Figure 5: Sales and Operations Planning (S&OP) Capabilities



Source: Aberdeen Group, December 2011

"In our old system, data was suspect, at best. It provided no information to front line managers in terms of what had been done during the last two shifts, so the beginning of every day was spent playing catch up.

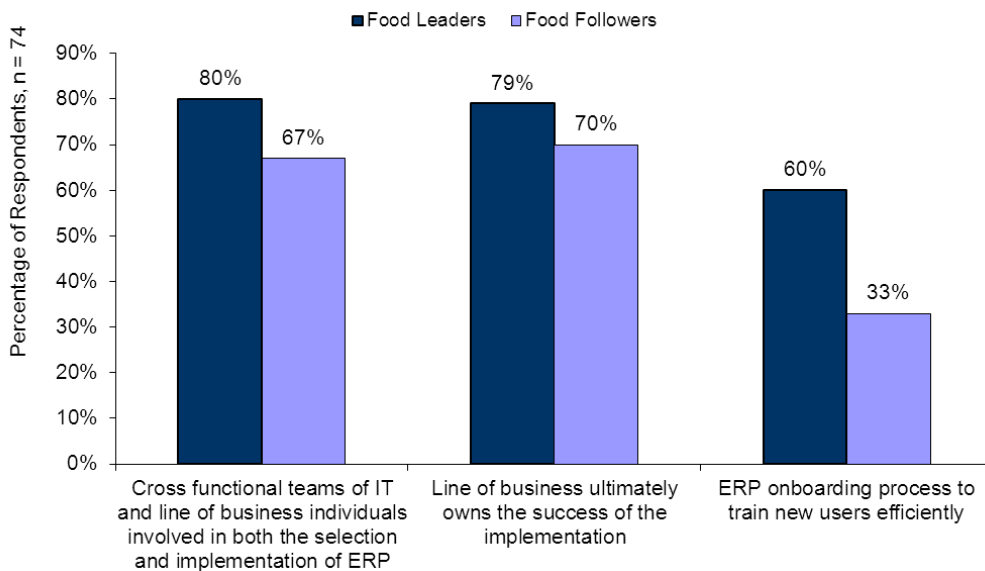
It was all about the time we wasted. We spent so much time fixing the system, it was very inefficient. We knew that we wanted to expand globally, so implementing something that we had to fix all the time would have really hindered us."

~ Scott Schulz, VP of Finance,
Walter Gremlin Co.

Our research shows that Leaders in the F&B industry have widespread implementation of the capabilities needed to perform effective S&OP. Leaders are a third more likely to be able to do demand planning, and almost 20% more likely to measure forecasting accuracy. This difference between Leaders and Followers can by itself account for leading companies' ability to manage inventory more effectively. It also makes the NPI process more efficient by providing visibility into new products' impact on operations and sales.

We have established that ERP is difference maker for top performers in the F&B industry, but now let's take a detailed look at how these companies manage their ERP strategy and set their organizations up to take full advantage of their ERP system. Figure 6 shows how F&B companies commit their organizations to their ERP strategy.

Figure 6: Organizational Commitment to ERP Strategy



Source: Aberdeen Group, December 2011

Commitment and support of ERP is almost universal amongst Leaders. It is especially heartening to see that both Leaders and Followers have driven accountability for a successful ERP strategy into the business leader ranks. This eliminates a lot of finger-pointing and drives more collaboration between business Leaders and IT Leaders. One less-heartening point for F&B companies is that less than a third of Followers have a formal onboarding process to develop new people to support the ERP strategy. This leads to the “one and done” syndrome for some ERP strategies. “One and done” is when a company puts a large effort into implementing ERP, but the enthusiasm, as well as the commitment to the ERP strategy, fades away to the point that the company wonders what happened to all the anticipated benefits of the strategy.

Cost Management in Food and Beverage

F&B companies tend to run on very thin margins and the volatility in the raw material market can lead to significant cost issues that are outside the control of a company. This study found ERP had a significant impact on cost positions of F&B companies:

- ✓ **43%** of F&B companies saw a reduction in operational costs due to their ERP strategy.
- ✓ **39%** of F&B companies saw a reduction in administrative costs due to their ERP strategy.
- ✓ **52%** of F&B companies saw a reduction in inventory costs due to their ERP strategy.

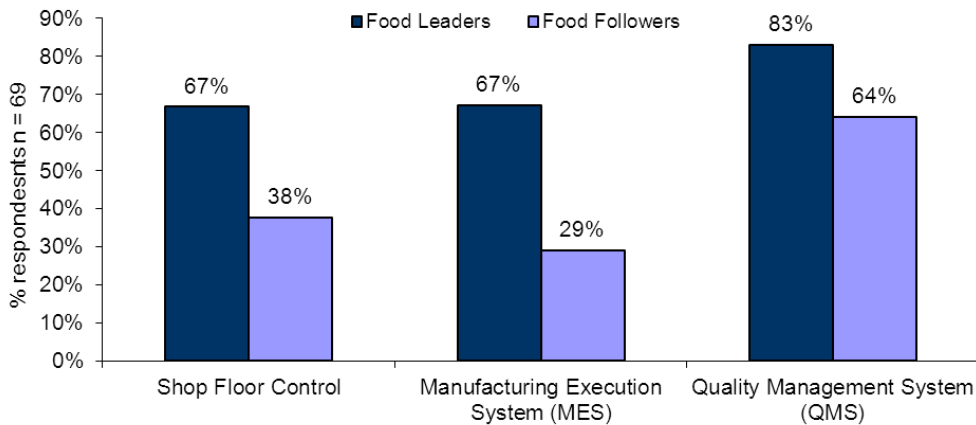
So ERP had a significant impact on companies and their ability to manage costs and react to changes in cost positions.

"With ERP, we now react faster, have better transparency, and have only one set of numbers to manage the business."

~ Martin Murphy, Director of Supply Chain, MARS Corporation

A critical component of F&B manufacturing is a connection to the processing shop floor. Traceability requires getting information about how a product is made or batched to the floor, and confirming that the product was produced to specifications. Figure 7 shows how F&B companies use manufacturing functions in conjunction with ERP.

Figure 7: Use Manufacturing Functions in ERP



Source: Aberdeen Group, December 2011

As we can see, F&B Leaders are over twice as likely to be using MES and shop floor systems to manage the plant processes. MES is especially likely to be used where traceability is a significant concern. Quality Management Systems (QMS) are almost universal amongst Leaders, while two-thirds of Followers are using a formal quality function.

And the last capability we will study is even more overlooked than the organizational aspect of an ERP strategy: the ongoing measurement of the ERP systems' operational impact. Figure 8 shows that large discrepancy in how Leaders and Followers measure their ERP system.

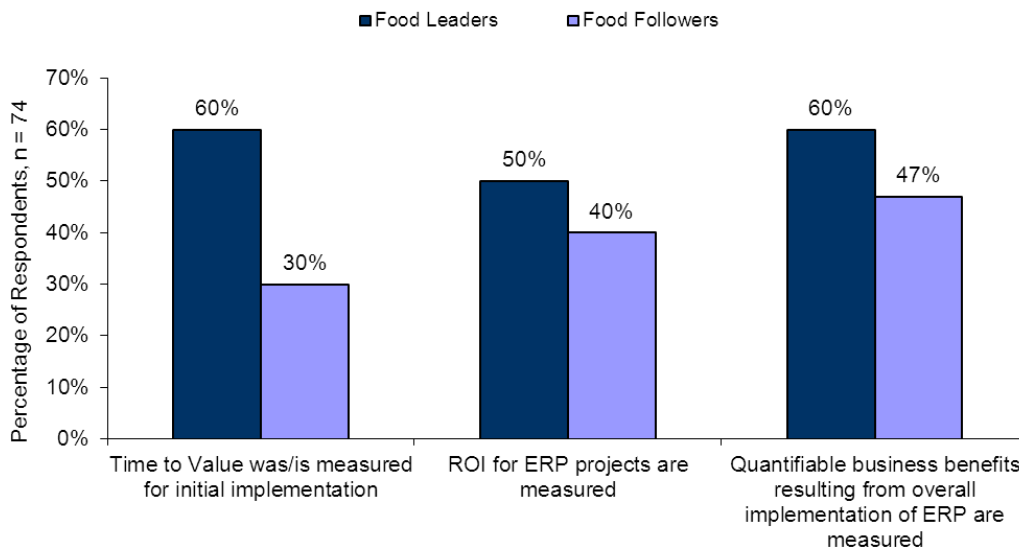
Traceability in Food and Beverage

Traceability is the capability of an F&B company to track how a product was made, confirm it was made to specifications, produce records on demand, and manage recalls. Multiple systems are typically involved, but below is a list of the most common systems leaned on for traceability:

- ✓ **71%** have ERP as part of a traceability system
- ✓ **59%** have a QMS as part of their traceability system
- ✓ **53%** have Supply Chain technology as part of their traceability system
- ✓ **35%** have MES or Manufacturing Operations Management systems as part of their traceability system

This data comes from Aberdeen's [Food Safety and Traceability 2011](#); November 2011 report. As you can see, ERP forms the lynchpin for any traceability program.

Figure 8: Measuring the Success of Your ERP Strategy



Source: Aberdeen Group, December 2011

For the initial ERP implementation, leading companies are twice as likely to measure time-to-value and 20% more likely to measure Return on Investment (ROI) as other F&B manufacturers. But they are also almost 20% more likely to have ongoing measurements of the impact of the ERP strategy on operational metrics. Top-performing F&B manufacturers not only make sure they hit the initial project targets for their ERP strategy, but that the ERP strategy contributes operational benefits moving forward. This allows them to make well-informed decisions about adjusting their ERP strategy as the business and organization change.

Recommended Actions

Food & Beverage manufacturers have the same financial and transactional needs that drive other companies to develop ERP strategies. But they also must contend with severe regulatory and compliance issues, as well as perishable inventory. The questions that any F&B manufacturer need to ask in relation to their ERP strategy are:

- How old is my ERP system, and does my strategy allow me to manage a volatile market, control inventory, and support increased NPI?
- Is my organization structured to drive accountability for the performance of my ERP system?
- Does my ERP strategy support the continuous improvement processes of the company?

Resource Planning in F&B

Resource planning is actually in the name of ERP. So how do Leaders and Followers compare in using the planning modules for ERP:

- ✓ **Material Resource Planning (MRP)** – Leaders at 100% and Followers at 31%
- ✓ **Capacity Resource Planning (MRP)** – Leaders at 78% and Followers at 25%
- ✓ **Distribution Resource Planning (MRP)** – Leaders at 44% and Followers at 19%

Leaders are just plain using the planning portion of ERP and Followers are not.

Recommended actions are directly dependent on the maturity level and experience with the ERP system:

Followers' Steps to a Successful ERP Strategy

- **Focus on waste and inventory.** Nearly four times as many F&B Leaders as Followers saw a significant reduction in waste driven by their ERP system. Those same Leaders had better inventory accuracy performance. In F&B companies, those two issues are tied tightly together because of the possible spoilage of raw materials and finished product. Followers should use an ERP system to get a better handle on inventory and reduce spoilage potential.
- **Use the planning tools you have.** Less than a third of Followers are using the planning capabilities of ERP to do material planning, while all Leaders use this capability; the resulting inventory performance of each group reflects that difference. Followers should immediately begin using MRP to manage and plan their material requirements.
- **Use demand planning and S&OP.** Followers are over a third less likely to use demand planning and have a formal S&OP process.
- **Leverage the manufacturing functions you are given.** Some ERP systems come with detailed manufacturing capabilities as an organic part of the system. Two-thirds of F&B Leaders use those functions, which is twice much as Followers.

"Our ERP systems has allowed us to shorten our delivery times, provided more reliable financial reports, and improved our business processes."

~ Federico Murillo, Unicer
(Carlsberg Group)

Leaders' Steps to Improving Your ERP Strategy

- **Keep measuring your ERP impact.** Leading F&B companies out-measure all other F&B companies by over 20%, but still less than two-thirds of Leaders measure ERP's impact on operations. Continue to measure ERPs' impact to stop yourself from making critical ERP decisions in a vacuum, and extend this measurement to operations.
- **Continuously improve the S&OP process.** While Leaders are more likely to measure their forecast accuracy than Followers, still only two-thirds of Leaders do this. Little can be accomplished to improve S&OP without feeding back the results of the forecast and analyzing its accuracy. All companies should use that feedback loop as part of S&OP continuous improvement.

F&B manufacturers work under a heavy regulatory burden that is only growing more stringent. Companies that rely on an ERP strategy which only addresses certain financial and transactional capabilities are wasting an opportunity to use ERP to relieve some of the regulatory burden, and also to improve operational performance.

For more information on this or other research topics, please visit www.aberdeen.com.

Related Research	
<u>ERP in Manufacturing 2011: Defining the ERP Strategy</u> ; July 2011	<u>Aging ERP: When Old ERP is Too Old</u> ; June 2011
<u>To ERP or Not to ERP: In Manufacturing, It Isn't Even a Question</u> ; April 2011	<u>Food Safety and Traceability 2011</u> ; November 2011
	<u>ERP: Is High ROI with Low TCO Possible?</u> ; January 2010
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