Mint Jutras

Making Enterprise Business Systems Pay Dividends

CLOUD ERP: HELPING MANUFACTURERS KEEP UP WITH THE TIMES

MORE INNOVATION, LESS COST WITH SAAS ERP

Manufacturing is changing and enterprise applications running in the cloud are playing a big role in helping manufacturers respond to change. Enterprise applications like Enterprise Resource Planning (ERP) used to be viewed as a necessary evil. Those responsible for the design and production of products reluctantly engaged with ERP, but preferred to spend available budget on additional production capacity, namely people and equipment that would help produce more and better product. Today these same decision-makers see the value in better planning, collaboration and visibility to help produce more with fewer (physical) resources. And the ability to access anywhere, anytime, with less information technology (IT) staff, without the burden of servers and software to maintain, makes cloud deployment very attractive to the ever-pragmatic manufacturer today.

TIMES, THEY ARE A'CHANGING

Of course change is a constant in any type of business, but the kind of change manufacturing has seen in the past twenty years has been very dramatic. Automation has drastically changed the operational landscape; global competition has sprung from the most unlikely places; leaner inventory, combined with complex supply chains, requires more visibility, better planning and increased collaboration.

WHERE ARE ALL THE PEOPLE?

If you haven't toured a manufacturing facility in the past twenty years, the first thing you might ask when you step inside one today: Where are all the people? While many blame off-shoring and outsourcing for the loss of jobs, in manufacturing the simple fact is that many disappeared because of automation. The goal of early automation was not necessarily to reduce headcount, but rather to improve predictable quality. So the loss of jobs was not immediate, and therefore not associated with automation. But when hard economic times hit in the early 1990's, those workers, whose jobs had been automated, were the first to go. When the economy improved, those jobs never came back.

Of course this didn't eliminate all workers. But by eliminating workers whose jobs could be automated, the typical manufacturing worker profile changed. Those still employed are no longer "commodities." They are the knowledge workers, the decision-makers. They expect not only to record data in ERP, they expect to get information and knowledge out of it.

A NEW COMPETITIVE LANDSCAPE

While automation accounts for a lot of the jobs lost in the manufacturing space, at the same time the world continues to shrink. Yes, off shoring and outsourcing have become realities with many outsourcing whole segments of the manufacturing process and purchasing both components and subassemblies from low cost country sources. Partly as a result of opening up new markets for offshore services, competition started springing up, sometimes from the most unlikely places – the low-cost countries themselves.

Early on, these emerging economies competed on price alone and quality was typically much lower than products and services from mature and stable economies. But the gap in quality has been steadily reduced. That means established competitors needed to find some other way of differentiating themselves. Often that meant adding services, which can add a whole new dimension to ERP. Today it may also mean differentiating themselves in the way they conduct business, being easier to do business with and improving the customer experience. ERP can either be an obstacle or an enabler in this regard.

DOING MORE WITH LESS

Increased global competition also means customers become more demanding of price, quality and delivery. The answer used to be large buffers of inventory and added capacity. But high inventory and low utilization adds cost that most manufacturers simply can no longer afford to pay. Leaner inventory and better utilization requires more visibility, better planning and increased collaboration, all of which place new demands on ERP.

THE ROLE THE CLOUD PLAYS

All these factors combine to force us to expect more from systems like ERP. Those that recognize this excel competitively, producing "world class" results, while those oblivious to this new world order continue to run outdated technology, often with less functionality, and slip further and further behind.

A cloud deployment can be effective in keeping pace with newer technology, which in turn can deliver more innovation. The access anytime, access from anywhere characteristics of the cloud can be effective in connecting more employees to ERP (Figure 1).

**Figure 1: Percentage of Employees Actively Using ERP**
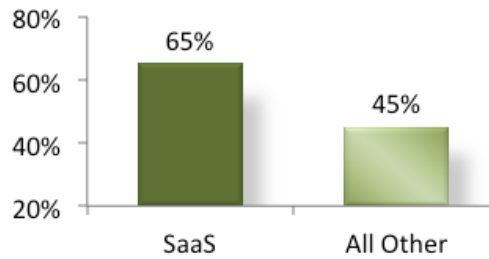
On average, 65% of employees in companies with SaaS ERP actively use ERP, compared to 45% in those companies with more traditional on-premises or hosted implementations. This represents a 44.5% differential and does not include those casual users that are limited to access to specific self-service functions (e.g., paid time off requests, purchase requisition requests, etc.). Actively engaging more of these knowledge workers also keeps all on the same page, making decisions that are data-driven, rather than based on gut feel.

This also reaches into the higher echelons of decision-making in the organization (Figure 2). Executives where SaaS ERP is deployed are 24.4% more likely to have access to and regularly use ERP, with 84% having some direct access (limited or regular use).

Figure 2: Executive Access to ERP: Reaching Higher into the Enterprise
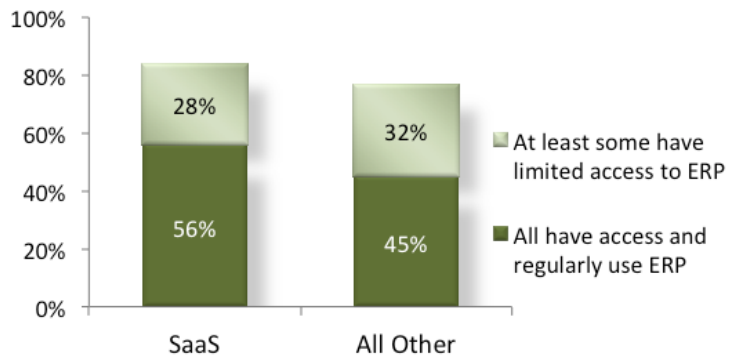
As you collect more data, as you connect more employees, the need for functions will grow. As long as employees had to wait in line to get data and answers they would spend as much (if not more) time looking for a way to work around the system. As you bring them into the fold, hopefully that will change but the system will have to do more. As you remove the barriers and constraints, you could be opening the floodgates for employees to demand more data, features and functions. You need to first cover the basics, but don't stop there.

ERP provides the transactional system of record of your business, and therefore in order to even qualify as a "real" ERP solution it needs to provide basics such as general ledger, accounts payable, accounts receivable, inventory control and order management. But a good ERP for manufacturing has evolved well beyond these basics and a good SaaS ERP for manufacturing is no exception.

If global competition forces you to respond more quickly with reduced lead times, you will need to seriously consider modules such as forecasting and demand planning, supply chain planning, supplier collaboration and scheduling, and perhaps even distribution requirements planning. If you are capacity and capital constrained, capacity requirements planning and enterprise asset management might be critical. If you must differentiate yourself with added services, an after-market service module may be a requirement. If you need to deliver more innovation faster, then engineering change management will be a plus.

Indeed Mint Jutras has seen a significant uptick in adoption of these more advanced, manufacturing-specific modules over the past 18 months, as indicated in Table 1.

Table 1: Adoption of manufacturing-specific modules increases

	2013	2011	%age Increase
After Market Service	80%	47%	69%
Enterprise Asset Management (EAM)	62%	41%	52%
Distribution Requirements Planning (DRP)	61%	44%	38%
Supply Chain Planning	77%	56%	38%
Supplier Collaboration / Scheduling	76%	58%	31%
Finite scheduling	67%	53%	27%
Project Management	71%	58%	23%
Master Production Scheduling (MPS)	81%	68%	19%
Capacity Requirements Planning (CRP)	75%	63%	19%
Forecasting / Demand Planning	77%	66%	17%
Product Configurator	65%	55%	17%
Material Requirements Planning (MRP)	87%	78%	12%
Quality Assurance	81%	75%	8%
Engineering Change Management	75%	70%	7%

Source: Mint Jutras 2013 ERP Solution Study

Without the need for a major capital expenditure (CapEx), even those with smaller budgets can afford a more robust solution by paying (and accounting for the cost) through operating expenses (OpEx). In short, just as manufacturers are forced to produce more with less, you can also expect more from your ERP with less effort and expense.

CHANGE FORCES MORE CHANGE

While cloud deployments can facilitate this change, Mint Jutras cautions that this transition will not happen overnight. One reason is that there are so many traditional, on-premises deployments operating today. Replacing them will require justification. Another reason is the lack of understanding of cloud and Software as a Service (SaaS) today. The savvy manufacturer will seek to educate itself starting right here and right now.

UNDERSTANDING SAAS AND CLOUD

It was this perceived lack of understanding that prompted Mint Jutras to conduct a study to determine level of understanding, along with preferences and possible misconceptions about SaaS.
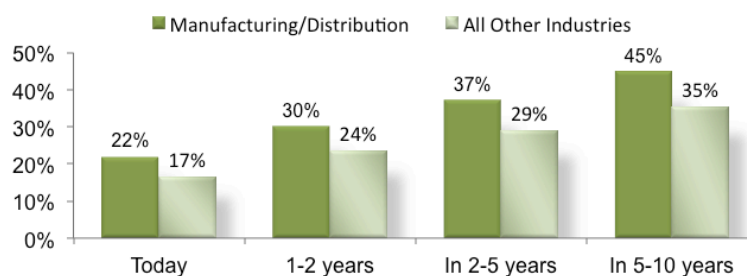
As a prelude to the survey and for our purposes here, we use the following definitions:

- Cloud refers to access to computing, software, storage of data over a network (generally the Internet.) You may have purchased a license for the software and installed it on your own computers or those owned and managed by another company, but your access is through the Internet and therefore through the "cloud," whether private or public.
- SaaS is exactly what is implied by what the acronym stands for: Software as a Service. Software is delivered only as a **service**. It is not delivered on a CD or other media to be loaded on your own (or another's) computer. It is accessed over the Internet and is generally paid for on a subscription basis.

Using these definitions, we can confidently say **all SaaS is cloud computing, but not all cloud computing is SaaS.**

Survey participants were asked to estimate the percentage of business software that is deployed today as SaaS and to predict how that will change over the next decade. Figure 3 compares responses from manufacturers and distributors to those of all other industries.

Figure 3: Percentage of Business Software that is SaaS

Source: Mint Jutras 2012 Understanding SaaS Study

Data Source

During the months of August and September 2012 Mint Jutras collected more than 300 responses to an electronic survey for its "Understanding SaaS" Study. These responses were qualified by the participant's knowledge of enterprise applications. The purpose of this study was to determine the level of understanding of SaaS deployment and also to uncover:

✓ *Preferences for SaaS*
✓ *Priorities for characteristics of SaaS deployment*
✓ *Perceived benefits*
✓ *Concerns over SaaS that may or may not prevent SaaS selection*
✓ *Deployment today and in the future*

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Often manufacturing in particular is singled out as lagging behind in information technology adoption and many further assume manufacturers will lag behind in transitioning to the cloud. Indeed survey results indicate the opposite. Manufacturers participating in the survey not only exhibited a better understanding of cloud and SaaS, but were also more disposed to move to the cloud. This supports our theory that manufacturers are the ultimate pragmatists, preferring to concentrate on their own core competencies, leaving the care and maintenance of servers and software to the experts. This makes this process a prime candidate for outsourcing.

When we asked Mint Jutras 2013 ERP Solution Study participants to select all the different deployment options they would consider in any purchase of ERP we see a precipitous drop in those that would consider the traditional on-premises deployment prevalent in the majority of manufacturers today. Figure 4 includes only responses from manufacturers. (Note the time span between when the 2011 and 2013 responses were collected was actually about 18 months).

Figure 4: Which deployment options would you consider in the future?
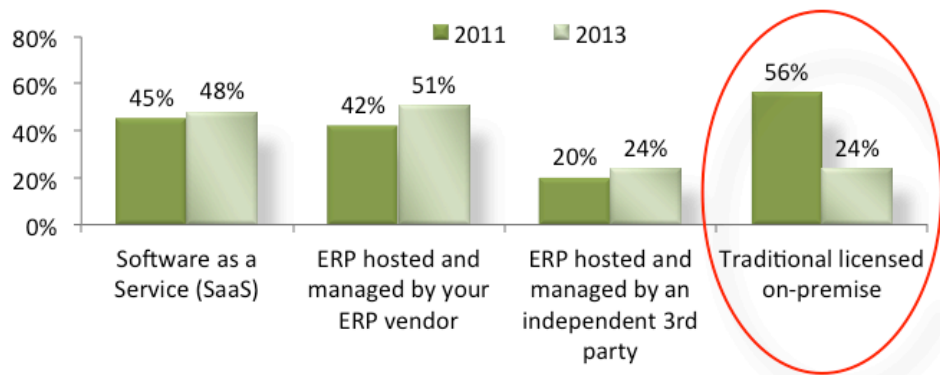
Source: Mint Jutras 2013 ERP Solution Study

SaaS versus Hosted

Enterprise application software is never purchased in the sense that you buy a physical product. For both on-premise and hosted deployments, the software is licensed for use. In a hosted model, the software may be accessed via the cloud.

Software that is delivered as a service (SaaS) is not licensed in the same way. Instead the enterprise subscribes to the software.

Of course there are several different ways you can outsource, SaaS being one option. We should point out that the percentage that will consider SaaS may be understated. Some survey respondents, particularly business users (versus IT), can't clearly distinguish between SaaS and a solution "hosted by their ERP vendor," particularly if they access it through a web-based interface. This supposition is substantiated by the fact that we found a certain percentage of participants known to be running via SaaS (because the solution they use is only available as SaaS) who did not indicate they would consider SaaS. But in each of these instances, they would consider it hosted by their ERP vendor.

If hosted, you might be accessing ERP through the cloud, but you will likely not be avoiding the up front and recurring maintenance costs as you would in a SaaS deployment.

Progress measured against possible goals:

Survey respondents were asked to rate progress (on a scale from No Progress to Fully Achieved) for each of the following possible goals:

√ Better visibility from quote to cash

√ Sustained growth without additional headcount

√ Reduction or redeployment of headcount

√ Reduction in operating cost

√ Reduction in administrative cost

√ Reduction in inventory cost

√ Reduction in obsolete inventory

√ Better utilization of resources

√ Reduce time-to-decision (better decision-making)

√ Positively impacted bottom line profits

√ Reduction of waste

√ Reduced cycle time

√ Increased production (output volume)

√ Increased value delivered to customers

So understanding different deployment options is a logical first step to moving forward. But if you are currently running an on-premises ERP solution, unless you can simply "lift and shift" to a SaaS environment (your current solution is available both on-premises and through SaaS), you still need to cost justify a transition. Regardless of deployment option, ERP requires a commitment of resources to implement, along with a commitment to make changes. Unless you are willing to make some changes in order to lower cost and/or improve performance, why bother?

JUSTIFYING THE COST

In order to cost justify such a transition, we look to the cost savings realized by ERP implementations in manufacturing. In doing this, we compare "World Class" implementations to all others. When we refer to "World Class," we refer to the ERP implementation. We capture cost savings and other improvements measured since the current ERP solution was installed and combine those results with progress measured against a set of possible goals. Of course not all manufacturers have the same specific goals for ERP, but the more goals that are set and the more progress that is achieved against those objectives, the higher the probability the implementation will achieve "World Class" status. Possible goals relevant to manufacturing are listed in the sidebar to the left. Finally, we temper those results with some universal measures of current performance. Each company receives an aggregate "score" based on all three, and the top 20% are categorized as "World Class."

Figure 5: Cost and Inventory Reduction Since Implementing ERP
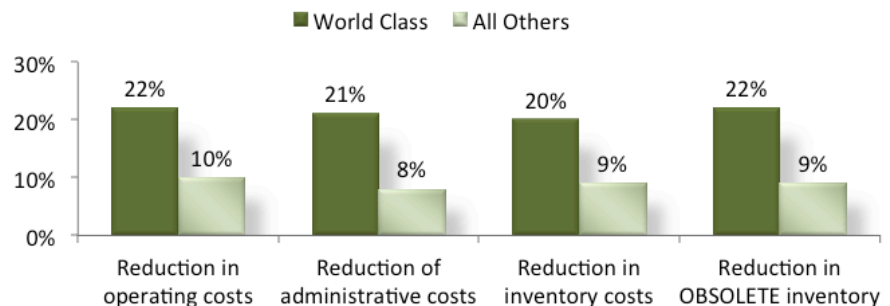
Source: Mint Jutras 2013 ERP Solution Study

We start by comparing cost and inventory savings measured since implementing ERP. While the categories of operating and administrative costs are quite broad and leave some room for interpretation, a precise definition is less important when we measure the savings as a percentage of total costs.

Think about your own operating costs, administrative costs and inventory costs. Think about inventory on your books that is obsolete and simply will not move. Take 8%, 9% or 10% and do the math. You might have your return on investment right there. These are the average savings produced by

implementations that are not World Class. Then take those savings and double them, and you have savings realized by World Class implementations. If 8% to 10% is significant, 20% to 22% is extraordinary.

Cost savings, while very important in terms of cost justification and profitability, are both very internally focused results from ERP. In order to stay competitive and achieve a competitive advantage, you also need to produce results that are more focused on your customer. In order to measure this type of success, we use a variety of metrics, which are shown in Figure 6.

As in measuring cost savings, we measure the improvements since implementing ERP.

Metrics Defined

✓ *Complete and on-time delivery are delivered 100% complete, on or before the promised delivery date*

✓ *Customer retention is the percentage of customers retained from the previous year*

✓ *Cycle time for* ***manufacturers****: start of plant production to completion of primary product*

✓ *Increased production measures output volume*

Figure 6: Other Improvements Measured Since Implementing ERP
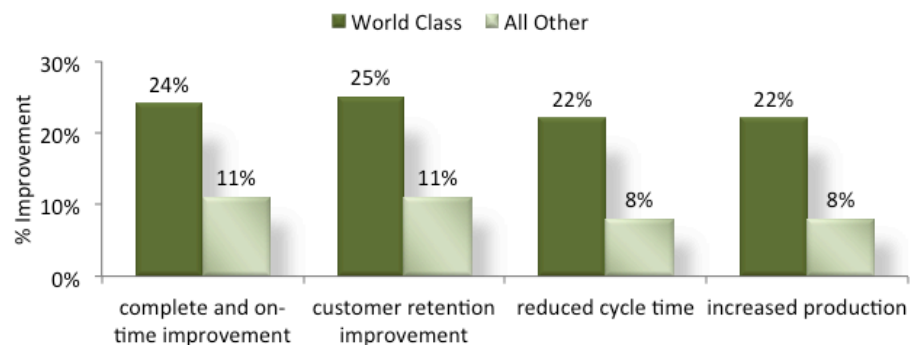
Source: Mint Jutras 2013 ERP Solution Study

These metrics are intimately dependent on one another. Complete and on-time delivery is a critical metric and can directly impact customer retention. Cycle times can directly impact your ability to deliver, not only as promised, but also as customer requested. One symptom that indicates you need (a new) ERP is not being able to meet customer demand, even as your inventory levels rise. And the visibility and scheduling capabilities can help you significantly ;increase production volume. Make more; sell more, generate more profits.

MORE INNOVATION

Survey respondents in our Understanding SaaS study were presented with five general categories of benefits of SaaS and asked to sequence them in order of priority. Upgrade issues were second only to cost factors. Cost and return on investment (ROI) are important considerations for those that are either considering or have already made the transition to SaaS and the cloud. Yet beyond cost factors, the only way to keep up with change is to innovate.

While industry observers and pundits like to hype "disruptive technologies" today, this should not be confused with disruption of your business. While technology that disrupts "we've always done it that way" kind of thinking is a good thing, disruption that stands in your way of getting business done

(product made, shipped and invoiced, cash collected) is bad. Software upgrades can indeed be costly and disruptive, which is why the consumption of innovation lags behind the vendors ability to produce it and deliver on-premise.

But what if the vendor also took responsibility for upgrading the software? A good SaaS solution provider will not only relieve you of this burden but will also provide more frequent and apparently seamless upgrades. Although a SaaS environment may take control over the timing of the upgrades away from the individual customer, if innovation is delivered in such a way that the customer may optionally choose to take advantage of an enhancement – or not – then there is no down-side and a lot of up-side. This is an important characteristic to evaluate when selecting a SaaS solution provider.

The pace of change is not going to slow down any time soon, so the benefit of more frequent and transparent updates is a definite plus in deciding to move to the cloud.

SUMMARY

Manufacturing must change with the times. The pace of business is accelerating, requiring more and better responsiveness. Yet most manufacturers are capital-constrained even as they attempt to expand and grow. As manufacturing becomes more globally competitive, competing on connectivity and collaboration are just as important as price, delivery and quality. But all these require new and better tools.

Cloud-based SaaS ERP can help with:

- Lower cost
- Easier access, any time anywhere
- Connecting at the exec level
- Easier upgrades
- Ease of expanding the footprint (easy provisioning at a reasonable cost)

In short, SaaS ERP allows you to do more with less and keep up with the times.

About the author: Cindy Jutras is a widely recognized expert in analyzing the impact of enterprise applications on business performance. Utilizing over 35 years of corporate experience and specific expertise in manufacturing, supply chain, customer service and business performance management, Cindy has spent the past 7 years benchmarking the performance of software solutions in the context of the business benefits of technology. In 2011 Cindy founded Mint Jutras LLC (www.mintjutras.com), specializing in analyzing and communicating the business value enterprise applications bring to the enterprise.