Mint Jutras

Making Enterprise Business Systems Pay Dividends

December 2018

WHY MULTI-TENANT SAAS MATTERS FOR MANUFACTURING

PLEX MANUFACTURING CLOUD AND THE RACE TO INNOVATION

Data Source

In this report Mint Jutras references data collected from its 2011 through 2018 Enterprise Solution Studies. While some questions are repeated year after year (to spot trends), others vary and therefore we select data from different years based on its relevance to our topic.

The studies collected responses from 450 to 800 participants from companies of all sizes from very small to very large, representing a wide range of industries. The data used in this reports utilizes only the data from manufacturers, which always represents at least 60% of our responses.

We gathered a significant sample of Plex Systems customers each year.

The race to the cloud is on! Cloud is the present and it is the future. Forty percent (40%) of manufacturers have already invested in cloud and software as a service (SaaS) and another 43% are planning to do so. While there are a lot of benefits in moving to the cloud, SaaS has the potential of delivering much more. More innovation is among the added benefits that are possible, and yet it is often overlooked and undervalued. Why? Because it is not guaranteed. Not all clouds and not all SaaS are the same and not all SaaS solution providers are equal in terms of delivering more innovation and making that innovation easier to consume.

Multi-tenant SaaS solutions deliver some competitive advantages to manufacturing businesses that simple hosted or hybrid cloud solutions can't. With multi-tenant SaaS deployments, the entire user community is on the same version of software and therefore all can share best practices without the burden of managing upgrades, patches and different versions. And since the software vendors manage a single line of code, instead of multiple release levels, potentially across different operating systems and databases, they can devote their entire development budget to innovation.

Delivering added innovation through more frequent (and robust) updates not only delivers more value, but is also one of the most differentiating factors in comparing cloud solutions. While some of the potential benefits of a cloud-based solution are inherent to the cloud itself, the cadence and method of delivery of innovation are not among them. Innovation can vary significantly from one solution provider to another. Here we explore some of the factors that fuel the race to deliver more innovation and highlight one veteran SaaS solution provider: Plex Systems and its Plex Manufacturing Cloud.

CLOUD PUSH OR PULL?

Given all the hype around the cloud today, we have to pose the question: Is the demand real? Are solution providers desperately trying to pull reluctant users to the cloud or are consumers of enterprise applications pushing the vendors to provide software as a service (SaaS)? Mint Jutras believes it is a combination of both.

You will find two different categories of vendors offering cloud solutions today, particularly when it comes to Enterprise Resource Planning (ERP) for

manufacturing. There are very few that were born in the cloud. Most of those that started out offering on-premise licenses are now shifting to the cloud. Why is this?

First of all, for many established players, revenue from traditional on-premise licenses is down, or at the very least, stalled. But this is not because the market for these applications is saturated. Legacy solutions have a shelf life, particularly those built on older, outdated technology. Without a major overhaul, perhaps even a complete re-write, these applications need to be replaced as newer, better solutions clearly provide a competitive edge. And as those solutions are replaced, customers vote with their wallets.

Multi-tenant versus Single-tenant SaaS

***Multi-tenant SaaS**: Multiple companies use a single instance of hosted software; configuration settings, company and role-based access personalize business processes and protect data security.*

***Single-tenant (or Multi-instance) SaaS:** Each company is given access to its own instance of the (hosted) software, but may share common services, such as an integration platform, and security.*

As license revenue for on-premise solutions declines, cloud revenue increases, although at a different pace. Without the huge up-front cost of a replacement license, the monies paid to vendors are spread more evenly over time, and often recognized as an operating expense rather than a capital expense.

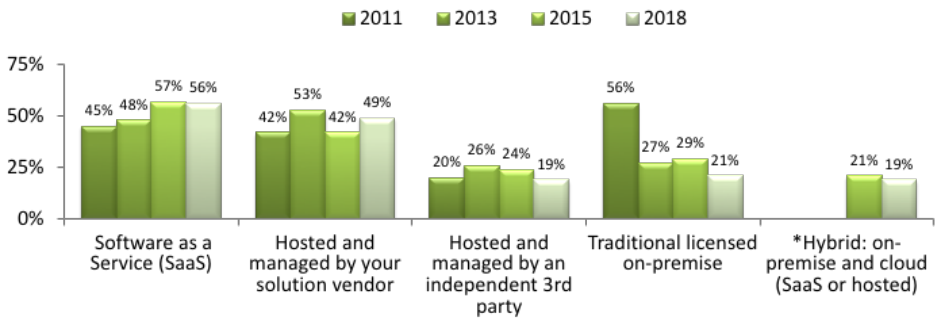
A (traditionally on-premise) solution provider must first invest in this shift towards cloud. For some with web-enabled user interfaces, this might be a quick lift and shift. But for most, in order to compete effectively, it represents a significant investment, particularly if they are moving in the direction of a full multi-tenant SaaS solution. Once that investment is made, the solution provider will likely begin to actively (aggressively?) pull customers in that direction. But during that transition, it is important for prospective buyers to carefully scrutinize whether solutions have simply been web-enabled in order to lift and shift to the cloud, or whether they have truly undergone a transformation.

DEPLOYMENT PREFERENCES HAVE SHIFTED

So… back to the question of whether the demand for cloud is real or not. Our annual Mint Jutras Enterprise Solution Study has been asking the following question for years now: *If you were to consider a new solution today, which deployment options would you consider?* Participants are allowed to select as many as they wish. A summary since 2011 is shown in Figure 1.

Figure 1: Deployment Options That Would Be Considered Today

SaaS is currently the option most likely to be considered and the interest in traditional on-premise solutions has waned dramatically.



Source: Mint Jutras Enterprise Solution Studies
*Option added in 2015

We skip every other year simply to fit the chart on the page. SaaS is currently the option most likely to be considered. The willingness to consider traditional on-premise solutions dropped off dramatically between 2011 and 2013 and has not recovered.

Beginning last year, in 2017 we added a follow-on question, displaying back the deployment models the participant selected and asking which was the first choice. Of those who would consider SaaS, in 2018 about 81% say it is their first choice.

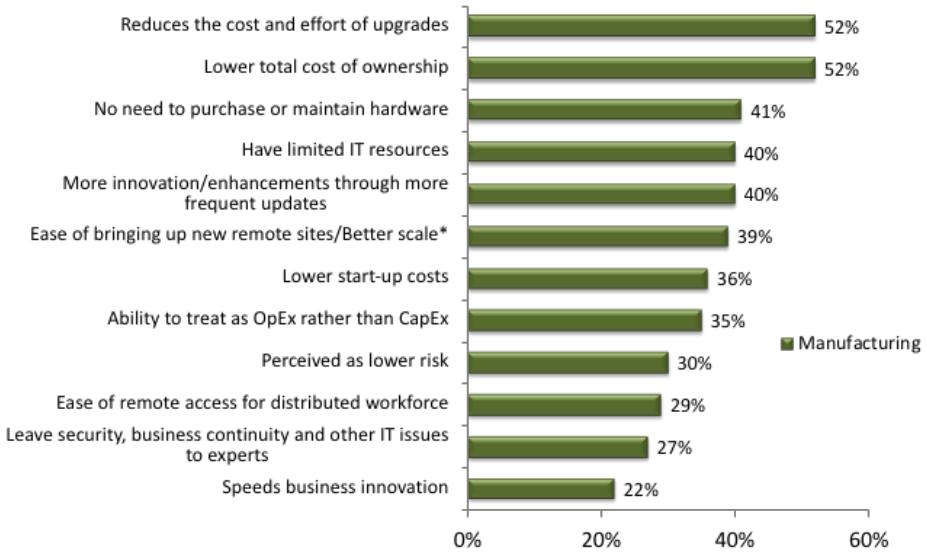
To better understand the motivation behind this shift in preference toward the cloud, we look in two different directions: the perceived appeal of SaaS and the very reasons for looking for a new solution.

THE APPEAL OF SAAS

First and most directly, we asked those considering shifting their current on-premise solutions to the cloud, "What appeals to you about SaaS?" Survey participants are given a fairly lengthy list of potential benefits of SaaS and are allowed to select as many of them as they see fit (Figure 2).

The ability to deliver more innovation through the SaaS model is not the most widely recognized benefit, but it is perhaps the biggest differentiator of solutions.

Figure 2: The Appeal of SaaS



Source: Mint Jutras 2017 Enterprise Solution Study

The long list you see in Figure 2 can be summarized into the following categories:

- Cost considerations (most often recognized as valuable)
- Support of distributed environments (growing in appreciation)
- Lower risk (very often overlooked and undervalued)
- **Innovation (the biggest differentiator of solutions)**

Indeed, the first three categories are largely functions of the solution being in the cloud. Of course, you will need to do some comparison shopping in terms of the price of subscriptions and the price and availability of services to get up and running, but it is the cloud itself that delivers much of this value. Innovation is different. Simply moving a solution to the cloud does not guarantee more innovation. SaaS typically delivers more and multi-tenant SaaS solutions tend to provide the most.

Thus far we have used the terms "cloud" and "SaaS" loosely, even interchangeably. But there are some important differences and what we are really talking about here is SaaS. So perhaps we should define the two:

- Cloud refers to access to computing, software and 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 the acronym. 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 generally paid for on a subscription basis and does not reside on your computers at all.

All SaaS is cloud computing, but not all cloud computing is SaaS… While there will be some value in remote access, you simply don't achieve the kind of benefits we will be describing without a SaaS environment.

All SaaS is cloud computing, but not all cloud computing is SaaS. Traditional on-premise or hosted solutions might (or might not) be accessed via the cloud, although this is more likely to be a private cloud, one created and maintained for a single organization, as opposed to a public cloud, shared by many. While there will be some value in remote access, you simply don't achieve the kind of benefits we will be describing without a SaaS environment.

THE MOTIVATION TO CHANGE

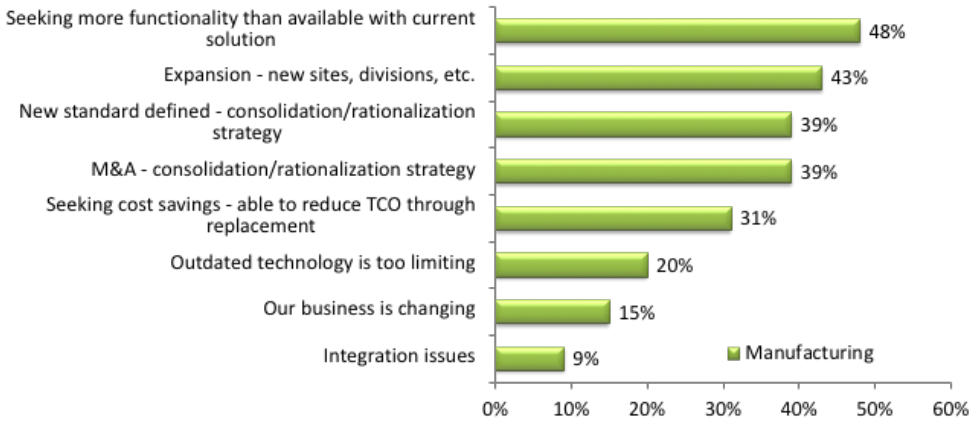
The other reason for this shift in preference to cloud and SaaS: SaaS better addresses the top reasons for replacing existing solutions.

To support this claim, we look to results from our 2016 Solution Study where we examined purchase plans and the motivation behind them.

Most often manufacturers are seeking more functionality than is currently available to them in their existing solution (Figure 3). Indeed, any modern solution today should be more feature-rich than older solutions. Of course, the level of functionality is dependent on the solution provider delivering innovation with a regular, consistent cadence. But equally important is the pace at which that innovation is consumed. More on this later.

The second most often cited reason for replacing solutions is expansion of the business. As new economies and new middle classes emerge, we see a growing demand for manufactured products, both consumer products, and in turn, industrial products.

Figure 3: Top 3 Most Compelling Reasons to Replace ERP



Source: Mint Jutras 2016 Enterprise Solution Study

The new global, digital economy is ripe with unprecedented opportunities. But with those opportunities come risk… You need to be willing to fail, but fail fast in order to move onto the next opportunity.

The new global, digital economy is ripe with unprecedented opportunities. But with those opportunities come risk, especially in dealing with emerging economies. The risk is greater because you are dealing with an increased number of unknowns. You are betting on new consumers and blossoming industries behaving similarly to known entities in established economies. But you can't guarantee the outcome. You need to be willing to fail - but fail fast in order to move onto the next opportunity.

While often overlooked and undervalued as a potential benefit of SaaS, Mint Jutras is of the firm belief that SaaS is a great enabler of growth: No capital expenditure required; no need to build out a data center, or even put hardware or a huge IT staff in the country. The access any time, from anywhere nature of a cloud solution is conducive to supporting distributed users and bringing up remote sites rapidly and easily.

Tied at third is the desire to rationalize solutions and merger and acquisition (M&A). For many years corporations left subsidiaries largely on their own to select and implement a solution. These same corporations have been talking about rationalizing solutions and implementing corporate standards for years. But until recently that was mostly talk. Subsidiaries balked at the concept of "rip and replace." Why pull out a perfectly good solution, only to spend an enormous amount of effort and money just to get back to where you started? That argument was valid once, but not today. Whether you are rationalizing solutions or replacing a solution at a division or subsidiary that was divested through M&A, turning to a SaaS solution saves time and capital and supports an added level of consistency, governance and control.

THE RACE TO INNOVATE

These reasons are compelling and also make a move to the cloud attractive. But it is the most common reason for replacing a solution that turns the race

89% of manufacturers believe they face some level of risk in their businesses and/or industries being disrupted by new innovative products, new ways of selling or pricing existing products or services, entirely new business models, or some combination of all of the above.

to the cloud into a race to innovate. Almost half (48%) of the time, the need for additional functionality is the motivation behind selecting a new solution. And as the pace of change accelerates today, the need for more features and better functionality doesn't stop once you get a new solution up and running. We live in an age of disruption.

The 2018 Mint Jutras Enterprise Solution Study found 89% of manufacturers believe they face some level of risk in their businesses and/or industries being disrupted by new innovative products, new ways of selling or pricing existing products or services, entirely new business models, or some combination of all of the above. And then of course there are still the more traditional disruptive factors like expansion and growth, organizational restructuring and regulatory changes, just to name a few. This disruption will have a cascading impact on business application requirements, making agility - the ability to easily innovate, evolve and change - even more important than current functionality.

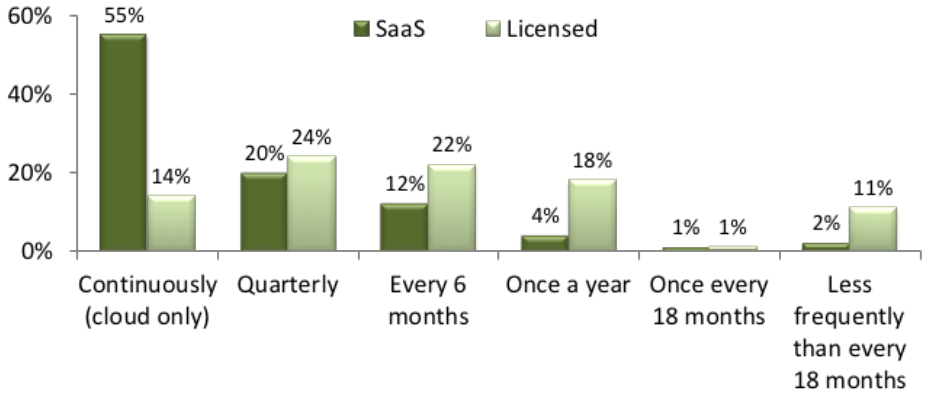
Does SaaS deliver more innovation, and if so, how?

COST AND EFFORT OF UPGRADES

The willingness of on-premise customers to go through the upgrade process was always a gating factor for solution providers. Why expend the effort to package up a release every few months if customers only upgraded every few years?

Traditionally, upgrades have been costly in terms of time, effort and possible disruption of your business. In on-premise environments, it has always been quite common for companies to skip releases, perhaps catching up periodically, or getting woefully behind in release cycles. The willingness of customers to go through the upgrade process was always a gating factor for solution providers. Why expend the effort to package up a release every few months if customers only upgraded every few years? But the pace of innovation has indeed increased, especially for SaaS solutions. Thirty-nine percent (39%) of all manufacturing respondents to the 2017 Mint Jutras Enterprise Solution Study reported the pace of innovation had increased since their initial installation. Figure 4 demonstrates the higher frequency of delivered innovation in a SaaS environment.

Figure 4: Frequency of Upgrades

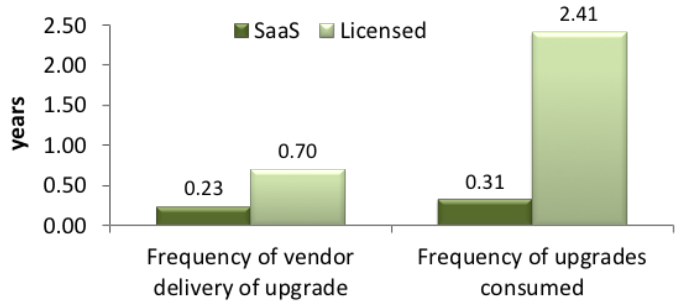


Source: Mint Jutras 2017 Enterprise Solution Study

It is one thing to deliver innovation more frequently, but quite another to consume it.

However, it is one thing to deliver innovation more frequently, but quite another to consume it. If we average the frequency of delivery across all our respondents, we find upgrades being delivered just about every 6 months. We also asked our participants how often they upgraded and found those with on-premise deployments consumed those upgrades about once every two and a half years. But in SaaS deployments, we found upgrades consumed more than three times each year (Figure 5) – a stark contrast.

Figure 5: How frequently are these upgrades "consumed?"



Source: Mint Jutras 2017 Enterprise Solution Study

In a SaaS environment, your staff is relieved of the burden of the upgrade of the software. All bug fixes and regulatory requirements are taken care of and new features and functions are available for use. But upgrades are still not consumed as fast as they are delivered – at least not on average. Whether innovation is consumed or not is often a function of quality and quantity of innovation, which is, in turn, a function of how it is developed and delivered.

QUALITY AND QUANTITY OF INNOVATION

The reduced cost and effort of upgrades (the process itself) is just one aspect of innovation. Our survey respondents have been recognizing this as a benefit for many years. But another aspect, which many companies have been slower to recognize, is the fact that you should be receiving **more** innovation, more frequently. However, part of the reason for this aspect being under-valued is the simple fact that not all SaaS solutions deliver this.

Vendors that offer their solutions exclusively as a multi-tenant SaaS solution typically have a distinct advantage of only having to maintain a single line of code.

Multi-tenant solutions tend to offer more innovation than single-tenant solutions. And solution providers that offer only a SaaS solution are typically able to deliver more innovation than those that offer the same solution on-premise and SaaS. Those that offer their solutions exclusively as a multi-tenant SaaS solution typically have a distinct advantage of only having to maintain a single line of code. This not only makes innovation easier but also makes it consumable by all of their subscribers simultaneously.

Solution providers that deliver on-premise solutions are forced to maintain multiple versions of the software. Very often the software is offered on a choice of platforms and databases, and the vendor must support multiple release levels determined by their customers' ability to keep pace with

upgrades. For every person-day they spend on innovation, they spend another multiple of that day making sure it works across multiple environments. Those vendors that offer the same solution both as SaaS and on-premise must accommodate these choices. And, as noted previously, they are also gated by their on-premise customers' ability to accept change. Those offering a multi-tenant SaaS solution exclusively can devote their entire development budget to innovation.

But there is more to delivering more innovation than just maintaining a single line of code. Platform and architectures are important factors in determining the quantity of innovation that can be delivered.

PLATFORM MATTERS

Developers tend to care a lot about the platform on which a solution is built. But business users? Not so much…. Yet they should.

Developers tend to care a lot about the platform on which a solution is built. But business users? Not so much. While this may have been appropriate in the past, today platform matters a lot. The platform will determine how easily the software can be personalized or tailored by company or individual without invasive code changes. And it will determine how quickly new code can be developed to add new features or modules that extend the footprint of the solution.

Did you ever wonder why it takes so long to develop software? It's because of all the little (and big) things you (the businessperson) don't see… things like securing records in a file so that two users aren't trying to update the same one, at the same time, causing changes to be lost. Or maybe it is indexing a file so that a program doesn't have to search the entire file sequentially to find the right data. You probably never even think about these components of programming, but your developers must.

A development platform can provide "application services" such as these and many, many more, so that developers don't have to worry about all these details, for each and every program. The platform handles them… and handles them consistently, the same way every time a program is written.

With a good platform, enhancements, features and extensions can be built much more quickly, hence another connection back to the frequency (and volume) of innovation.

With a good platform, enhancements, features and extensions can be built much more quickly, hence another connection back to the frequency (and volume) of innovation. With a modern, technology-enabled architecture, this innovation might just be possible without ever touching the core application.

This means tailoring the look and feel is easy. It also means that configuration (versus customization) does not require deep technical skills and is carried forward as the software is enhanced. In fact, with a good platform this type of configuration should be easy enough for a business user to do.

In addition, a platform might introduce a set of business rules that are created and maintained. These rules might be used to determine behavior of a function or to configure next steps in a workflow. Business rules might define different thresholds for approval (e.g. all purchase orders require approval but those over a certain value require an extra step in the approval process). This

keeps a lot of the "intelligence" of the application out of the code. Less code means faster development and easier maintenance as business conditions change.

This becomes even more important in a multi-tenant SaaS solution where all the "tenants" are running the same core product. Even though the underlying code is identical, it can look and feel very different from company to company and user to user. Two implementations of the same instance of the software can look and operate very differently. That said, since the underlying code is the same, sharing best practices throughout an active and engaged community is both easy and enormously useful.

THE PLEX MANUFACTURING CLOUD

Plex Systems did not become a "SaaS only" company in 2001 to be on the bleeding edge of new deployment options. It was because the founders had developed technology and processes to rapidly develop applications and SaaS was the only way they could deliver software as fast as they could develop it.

Speaking of communities, it would be hard to find one more active and engaged than the community that has grown around the Plex Manufacturing Cloud. This culture of sharing has deep roots that reach back to when and why Plex Systems first became a "SaaS only" company in 2001. It wasn't because SaaS and cloud were the hottest topics back then. It wasn't because the company wanted to be on the bleeding edge of new deployment options. It was because the founders had developed technology and processes to rapidly develop applications and SaaS was the only way they could deliver software as fast as they could develop it. They wanted to share new functionality and new technology as it was developed, not 12 to 18 months later, when the next release was scheduled. As a result, early on, customers didn't buy the Plex Cloud **because** it was SaaS. They bought it because of the broad and deep functionality, **in spite of** the fact that it was deployed and delivered through the cloud.

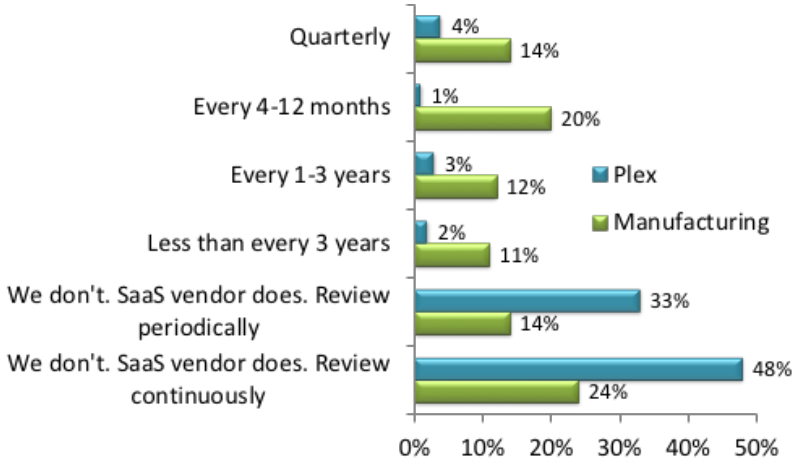
So, the frequency of updates is obviously one way Plex is unique. The company could be updating the software as often as every day. Does that mean the system appears to the user to be in a constant state of flux? Of course not. Most users don't see anything different from day to day. All innovation is delivered in what Plex likes to call "opt-in" enhancements. You have to make a conscious decision to turn them on.

So how often do Plex customers typically do this? Some do so more frequently than others, but all consume innovation more frequently than the typical manufacturer (Figure 6). To counter the resistance to SaaS prevalent back in the early 2000's, very early customers were offered a license, much like an on-premise solution. A small percentage of these customers still view upgrades much like those still running on premise. But the largest majority recognize the fact that they don't "do" upgrades at all. They sit back and let Plex do all the heavy lifting. Some (33%) still review the innovation available on a periodic basis, but a larger percentage (48%) review it continuously.

Some Plex customers consume innovation more frequently than others, but all consume innovation more frequently than the typical manufacturer.

All Plex customers benefit from the reliability and security that allows them to focus on their core business rather than upgrades or disruptions.

Figure 6: How frequently do you upgrade?



Source: Mint Jutras 2017 Enterprise Solution Study

While some might still approach the upgrade process from a more traditional (timing) perspective, all Plex customers benefit from the reliability and security that allows them to focus on their core business rather than upgrades or disruptions.

The Plex community is promised at least 99.99% availability. This translates to 525 minutes (8.75 hours) of planned downtime and almost negligible unplanned downtime per year. In 2017 Plex customers experienced 18 minutes of unplanned downtime and so far in 2018, a total of 7 minutes.

CONCLUSION

The race to the cloud is definitely underway. Whether you have yet to enter the race, or are well down the path, you also need to consider your final destination. Will it be one that helps bring continued innovation to the solutions you use to support your business, and in turn speeds the growth and innovation of your business? Or will you simply jump to the cloud and continue to stagnate?

There are many potential benefits that are inherent in all (or at least most) SaaS solutions, including lower costs, better support of distributed environments and lower risk. But don't be content with just any SaaS solution. Look for one that also brings you onto a path to more innovation – innovation that is robust and easy to consume. The cadence of innovation should be quite easy to discover. But beyond the cadence, remember platform and architecture matter. If you don't understand the technical underpinnings of potential solutions, seek more information and perhaps some expert guidance, but be sure to probe deeply. After all, it is your own sustained growth and profits that are at stake.

If you are a manufacturer in the market for a new solution, the Plex Manufacturing Cloud from Plex Systems is a proven solution with the kind of SaaS longevity that is still rare today. If we have convinced you of the merits of a multi-tenant SaaS ERP for manufacturing, take a look at Plex. If you're not yet convinced, that might be even more reason to give them a chance to convince you.

About the author: *Cindy Jutras is a widely recognized expert in analyzing the impact of enterprise applications on business performance. Utilizing over 40 years of corporate experience and specific expertise in manufacturing, supply chain, customer service and business performance management, Cindy has spent the past 12+ years benchmarking the performance of software solutions in the context of the business benefits of technology. In 2011 Cindy founded Mint Jutras (www.mintjutras.com), specializing in analyzing and communicating the business value enterprise applications bring to the enterprise.*