eBook

InfinityQS®
Quality Re-imagined

Cloud Mythbusters

Dispelling the Myths of Manufacturing in the Cloud

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Intro

The world is turning to the cloud — yet many manufacturers feel lost in the fog.

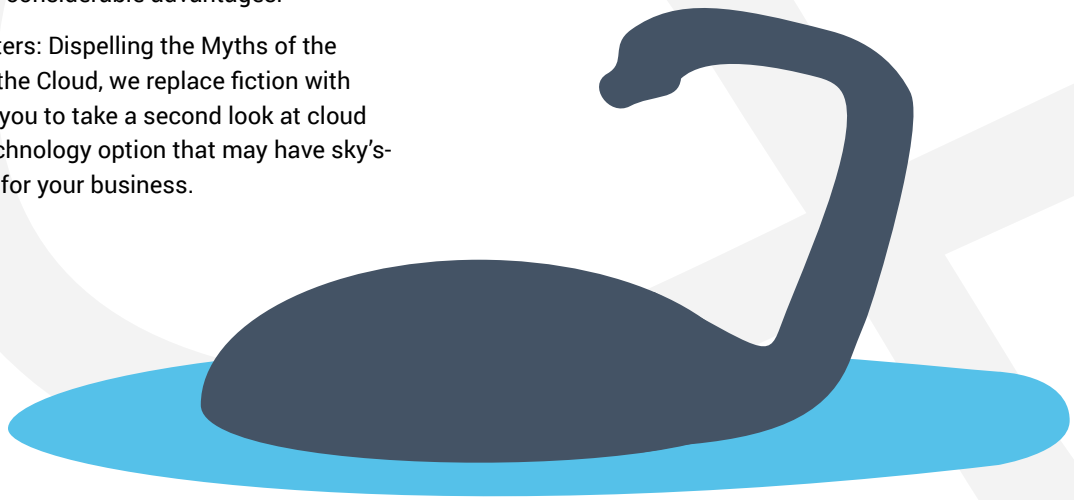
Given that typical manufacturing employees spend up to 60% of their time collecting and processing information1, you would think that employers would rally behind promising new technology developments that centralize information, standardize data formats, and facilitate rapid communications among manufacturing sites, suppliers, vendors, and more.

The technology that does all these things is the cloud, the virtual space in which computers communicate via real-time networks such as the internet. In business speak, the cloud enables access to computer power liberated from the obligations of maintaining your own hardware or software.

With cloud computing, all authorized users can access the same information at the same time, regardless of device or location. Physical barriers to information dissolve, and manufacturers can open new opportunities for remote collaboration or control. Cloud-based solutions can enable real-time visibility into the supply chain, support lean manufacturing processes, and automate the data collection necessary for effective quality control.

As you'll see in this paper, although some manufacturers have embraced cloud computing, many others are reluctant to let go of their familiar environment — and all the structures that go into supporting it. Given the stakes, it's entirely reasonable that manufacturers prudently consider their options before making significant changes. Yet when it comes to the cloud, too many manufacturers may be fogging up their decisions with unfounded myths that prevent them from seizing considerable advantages.

In Cloud Mythbusters: Dispelling the Myths of the Manufacturing in the Cloud, we replace fiction with fact, encouraging you to take a second look at cloud computing — a technology option that may have sky's-the-limit potential for your business.



1 "Study Forecasts Rise in Manufacturing Intelligence Investments," TechMatchPro, December 20, 2011

Myth 1

The cloud is just for consumers.

Sure, when you think of who's doing business in the cloud, you think of the big consumer brands that get so much media attention, like Amazon or Hulu. But behind the scenes, services like Salesforce.com, Dropbox, and Microsoft Office 365 prove that the cloud is as efficient a means for delivering value to businesses as it is to consumers. In fact, many industries that labor under intense regulatory pressures and compliance demands — such as financial services and trading firms — depend on the cloud to fulfill their services.

Consider what cloud computing could facilitate for manufacturers:

FLEXIBLE CAPACITY

Combined, automated data access and data standardization give the manufacturer a fast and effective way to adjust capacity across multiple worksites to meet changing market conditions.

STANDARDIZATION

Because of their autonomous nature, onsite solutions tend to take on a life of their own. Even the language of the business becomes complicated; different terms may be used for the same process at different sites. That lack of standardization can wreak havoc at the corporate level when leaders attempt to compare or combine data from various facilities for analysis. A cloud-based system ensures all facilities are using standardized terms and measurements, making data analysis easier.

AUTOMATIC DATA ACCESS ACROSS MULTIPLE SITES

Every site with its own system remains a silo; without manual intervention, data from one site cannot inform activities at another. Cloud computing enables data integration across locations, allowing both local inputs and centralized management.

REDUCED IT BURDEN

Your business is about manufacturing your products, not maintaining IT departments. Cloud computing and cloud-based services relieve you of the burden of buying, installing, supporting, and implementing software on your own.

"Lettuce" suppose you have to manage 16 locations – without an IT team

That's the reality for a major produce supplier that oversees 16 food processing sites in two different parts of the country: Salinas Valley, California and Yuma, Arizona. For seven months of each year, the business operates on the coast. Then when the seasons change, operations shift east to Arizona. In just one weekend, the business moves its entire facility – machines, lines, equipment – from one place to another without missing a harvesting beat.

Yet, even with all the sites and all the movement, the company does not have an IT team. Instead, it works with one cloud-based contractor for quality control. Through a single cloud service, the company has eliminated the time and dollar costs of installation and implementation — and found an efficient way to coordinate quality at all its facilities, year-round.

Myth 2

Over time, it costs more.

Just as cloud computing moves technology from your on-site locations to off-site services, it moves your financial structures as well, from a capital investment to an operations expense.

Getting started in the cloud takes considerably less money than building a data center. Unlike a capital expenditure that is eventually paid off, however, the cloud is a reoccurring cost that will remain on the company books indefinitely. That difference discourages some companies from adopting the cloud.

When you look long, don't neglect to look deep. Companies often fail to consider the ongoing costs associated with on-site solutions such as:

› Software installation and implementation

› Assembling and sustaining an IT staff

› Hardware infrastructure (e.g., electricity)

› Software maintenance and upgrades

› Bug-fixes and responsibilities

And finally, the big consideration: obsolescence. Your large IT investment will have to be renewed with regular capital investments to keep pace with changing technology. In the cloud, your service provider keeps pace with technology for you.

In typical cloud deployments, routine maintenance, installation, and upgrade costs are included in the service contract. As the technology improves, your provider automatically adjusts, sparing you the expense of new technology investments. That's why, in both the short term and the long run, cloud solutions tend to impose a lower total cost of ownership.

Not only is cloud computing much faster to deploy, it supports consistent financial management because it gives you predictable, ongoing operating expenses.

Myth 3

The cloud isn't secure.

In an imperfect world, there is no such thing as perfect security. The real issue isn't whether the cloud is completely secure for everyone all the time; it's whether it's as secure

The truth is, it's not as secure — ***it's more secure.***

In its revealing paper State of Cloud Security Report (spring 2012), Alert Logic revealed the results of a year-long examination of common attacks on more than 1,500 of its customers2. In both levels of occurrence (percentage of customers experiencing attacks) and frequency (number of incidents per impacted customer), study participants who used on-premises computing experienced more security assaults than participants who computed in the cloud.

Nature of attack	On-premise occurrence	Service provider (cloud) occurrence	On-premise frequency	Service provider (cloud)frequency
Web application attack	71%	65%	46.6	32.4
Brute force	84%	44%	47.3	22.4
Reconnaissance	51%	42%	10.1	2.4
Vulnerability scan	54%	37%	22.9	21.8
Malware/botnet activity	43%	2%	28.1	8.4
Application attack	9%	2%	6.2	6.2
Misconfiguration	12%	1%	4.0	3.0

Participants in Alert Logic's study included businesses such as Hosting.com, LogicWorks, Rackspace, and Sungard Availability Services. In every category of attack, service provider (cloud) operations experienced greater security than on-premises computer operators.

[2]**"Removing the Cloud of Insecurity: State of Cloud Security Report," Spring 2012, Alert Logic**

Myth 4

Our suppliers won't accept it.

Supply chain strategies tend to focus heavily on managing the logistics of the supply chain – procurement, lead times, and delivery – with a focus on "Is the product in the right place at the right time?"

However, post mortems of quality failures often reveal that problems could be avoided if stringent testing protocols for critical attributes are in place. The traditional model of supply chain management can leave businesses exposed to risk from the "domino effect" that results when supplier quality failures result in adverse events.

The cloud allows companies to establish collaborative networks with their suppliers to facilitate real-time analysis of process performance and critical product attributes. The new model allows supply chain managers to look further than whether the product is in the right place at the right time. Now, they can answer the question, "Is the product is in the right place at the right time and verified to the right specification?"

Quality systems allow suppliers to accomplish two goals: win new business and keep costs low. Those goals — and the advantages below — are driving suppliers to not just accept cloud computing connectivity, but welcome it.

Supplier advantages:

- Integrated cloud computing closes the feedback loop, giving suppliers real-time data they can apply instantly to their operations.
- Rapid data access accelerates improvements and reduces waste.
- Win/win: Both manufacturers and their customers profit from fewer and shorter production delays.
- For suppliers, the quality control improvements they gain through cloud connectivity to one client can also be applied to improve other processes for other clients.

"Inherent quality problems (i.e. raw materials, ingredients, production, logistics, packaging) in any of the supply members trigger a domino effect that spread through a multitier supply network. For this reason, it is hard for a network member to keep track of who did what, and when, to the final quality of the products. The product that a local firm sells to the consumer comprises components made by the local firm and the suppliers. When the product breaks down due to defects in either the firm's component or the supplier's component, the firm has to bear the consequences."

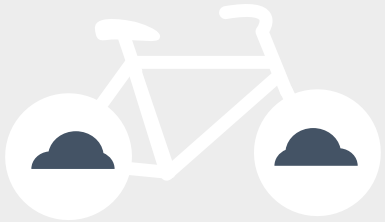
-Tse and Tan3

[3] **Tse, Y.K. and Tan K.H., 2009. Product Quality Risk in Multi-tier Global Supply Chain, 3rd ICOSCM Conference**

Bike manufacturer fixes "flats" at the supplier's side of the road

A major U.S.-based bicycle manufacturer had successfully deployed statistical process controls at its own facilities, but couldn't apply the same quality control to its parts suppliers in Taiwan and China. The resulting lack of visibility meant the bike manufacturer remained unaware of problems — until products arrived in U.S. market, leaving the company exposed to a high potential of risk.

By implementing a cloud-based quality solution, the U.S. company put its far-flung suppliers on the same quality page, sharing the same critical data at the same time. Now, the company and its partners get real-time alerts that support rapid corrective actions, creating a leaner manufacturing environment and reducing the defects that could have otherwise cost two months of transit time across the Pacific Ocean.



Case Study

Beverage giant attains time-to-value using the cloud

How the industry leader deployed a quality platform across 143 plants in 18 months

Establishing and maintaining standardized manufacturing quality for a global enterprise poses numerous challenges. In addition to geographical barriers, manufacturers must consider different languages, available tools and resources, and even a localized preference for varying best practices. A global food and beverage leader with a history of more than 50 years producing some of the world's most recognizable beverages and snack foods accepted this challenge in an effort to standardize quality across 143 bottling plants worldwide. A private cloud deployment allowed the company to attain time-to-value as they fully deployed the system across 143 sites in less than 18 months.

At the time, the $20-billion company had been using a homegrown product for its quality checks that was installed on site at each of the plants. However, with the realization that it needed to incorporate an off-the-shelf product with external support services, the company chose InfinityQS® ProFicient™. Powered by statistical process control (SPC), this software could easily accommodate the company's established quality checks and offered features and functionality to promote continuous improvement efforts.

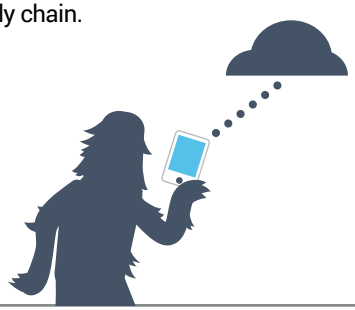
For deployment, however, the prospect of travelling to each of the 143 individual plants to evaluate and upgrade the existing system was unfathomable, requiring significant time and financial commitment. As an alternative, the global F&B leader turned to cloud technology. This approach created an environment in which the software application would be installed in one location and each plant would use a local browser or thin client to access the centralized application and database via the internet. With the cloud, plant managers' options expanded; they could now incorporate tablets and mobile devices for lines that were removed from the main plant floor area or for management to access reports and analytics while away from the facility.

To address the standardization across geographies, the F&B's technology team worked closely with InfinityQS's statistical experts and application engineers to employ user-based permissions and preferences that immediately recognize a user's location, preferred language, level in the corporate hierarchy, and required view of the software. This means that line operators in Istanbul log into a screen written in Turkish and customized for real-time quality check alerts and data entry, while a quality manager in Mexico logs in to see dashboards and reports for data analysis in Spanish. With the cloud, the technical team configures these global settings in one location and can then make instantaneous, system-wide updates to the software one time, in one location.

InfinityQS also helped the company create naming conventions based on thousands of product codes from the company's ERP software and integrated them with the user-level, location-based permissions so that operators in the United States would only see the product codes for the beverages that were being produced for North American distribution, and so on around the world. The engineers also worked to integrate electronic data collection devices in laboratories for sample testing, on production lines to automate collection of data for net content control, HAACP compliance, federal regulations, and specification limits on PET bottle creation.

With careful planning of the underlying architecture and meticulous attention to initial deployments, the global food and beverage leader fully deployed the software to all 143 plants with 18 months.

The time to value and ongoing management benefits are compelling the manufacturer to assess other systems and identify opportunities to leverage cloud technology to overcome the challenges big data is imposing on the global supply chain.



Should you take a second look at the cloud?

Today, IT is an integral part of any manufacturing process. If your organization is considering its next step up in applying computing power to manufacturing quality, efficiency and productivity, it may be time to consider cloud-based alternatives to on-premises IT commitments.

Use the following questions to see if cloud computing might be useful to you:

- **Can your current IT system coordinate and manage data from multiple sites?**
- **Does your system facilitate standardization of terms, measurements, and processes?**
- **Does your current network structure allow you to match capacity to rapidly shifting market conditions?**
- **Are you comfortable carrying the burdens of managing your own IT?**
- **Do you have to manage installations, upgrades, maintenance, on your own?**
- **Can you get automated updates and bug fixes?**
- **Can you turn your IT investments into a more predictable operations expense?**
- **Is your on-premises technology as secure as cloud service options?**
- **Can you provide your suppliers with the advantages of real-time data access and analysis?**

If you answered “no” to most of these questions, it may be time to say “yes” to cloud computing. Learn more about your options for quality control via the cloud by talking to an InfinityQS expert at 703-961-0200 or sales@infinityqs.com.

Or visit us online at infinityqs.com.

InfinityQS®
Quality Re-imagined

About InfinityQS International, Inc.

InfinityQS International, Inc.® is the global authority on enterprise quality. The company's Manufacturing Intelligence solution delivers unparalleled visibility across the enterprise, from the shop floor to the boardroom, enabling manufacturers to re-imagine quality and transform it from a problem into a competitive advantage. Powered by centralized analytics, InfinityQS solutions provide operational insight to enable global manufacturers to improve product quality, decrease costs and risk, maintain or improve compliance, and make strategic, data-driven business decisions. Headquartered near Washington, D.C., with offices in Seattle, London, Beijing, and Shanghai, InfinityQS was founded in 1989 and now services more than 40,000 active licenses with more than 2,500 of the world's leading manufacturers, including Kraft Foods, Ball Corporation, Boston Scientific, Graham Packaging, and Medtronic. For more information, visit infinityqs.com.

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