

IDC Manufacturing Insights

Supply Chain in the Cloud: Looking Beyond Total Cost of Ownership

WHITE PAPER

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At IDC Manufacturing Insights, we have had a significant number of conversations recently about cloud and how it applies specifically to the supply chain. It is not all that surprising that such conversations occur; after all, along with mobility, cloud is very much at the apex of the hype cycle. Yet if one looks beyond the hype, cloud offers the potential not only to transform how supply chain organizations procure IT capabilities but also to fundamentally change how they manage business processes. Certainly, we do not wish to "over-egg" the omelet here or suggest that this change will happen tomorrow, but it is coming — and perhaps faster than we might appreciate.

Up to now, the conversation about cloud in the supply chain, and its "as a service" progeny, has tended to begin with total cost of ownership (TCO). There seems little question that for some companies, and in some cases, an as-a-service application can provide a lower TCO than the on-premise alternative. Whether there are diminishing returns (driven by company size and/or number of users) is for another discussion, but suffice it to say that you are remiss if you do not at least consider a cloud alternative when evaluating a system change.

Although TCO will always be important, it appears that the conversation about cloud in the supply chain is rapidly moving beyond just cost to also consider capabilities and the speed with which capabilities can be made available to the supply chain. We recently made the observation that as the "clock speed" of business accelerates, multiyear IT implementations increasingly make no sense. How can you possibly anticipate where your supply chain will be? Although it will be different for all companies, it seems clear that the clock speed of business *is* running faster and faster for most manufacturers — whether in the volatility of demand, the requirements for shorter lead times, or the acquisition of new capabilities — yet the delivery of traditional IT capabilities is struggling to keep up. Software vendors have done a good job of offering quicker implementation capabilities; however, for most manufacturers, IT resource limitations quickly become a bottleneck for the supply chain. It is the view of IDC Manufacturing Insights that cloud does not need to be constrained by these limitations and can be transformational in better aligning the clock speed of business with the acquisition of IT capabilities.

The Current Reality ... and the Future

Cloud is among the most-discussed new technologies, and the current reality is that approximately 20% of discrete, process, retail, and wholesale manufacturers are using it. For the purposes of this paper and subsequent discussions, we are defining cloud computing as an approach for enabling on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released as demand requirements dictate. Cloud computing includes as subsets software as a service, platform as a service, and infrastructure as a service; in some instances, it may also include analytics as a service.

Table 1 illustrates the cloud adoption plans of companies in a selected number of industry value chains. Adoption is clearly gaining momentum. When evaluating a new application or IT tool, fully 75% of these same companies ask for a cloud alternative in their request for information (RFI). This certainly suggests that we will continue to see strong growth in the adoption of cloud capabilities; as a result, IDC projects an annual growth rate for cloud computing of 7% through 2013.

TABLE 1

Cloud Adoption by Selected Value Chain Segment (% of Respondents)

Q. Does your organization currently use, or have near-term plans to use, IT cloud services, such as SaaS application services; "compute" services; or application development, test, or deployment services in the cloud?

	Total	Discrete Manufacturing	Process Manufacturing	Retail	Wholesale
Evaluating the cloud approach for a specific workload or service	21.2	20.7	20.6	22.2	21.7
Have already deployed and are using cloud service(s)	20.0	24.1	22.1	13.3	21.7
Generally educating ourselves about the cloud model	12.7	10.3	10.3	15.6	17.4
Implementing/contracting for a cloud service	17.6	17.2	19.1	17.8	13.0
Planning to implement/acquire cloud service(s) within the next one to two years	23.0	27.6	25.0	15.6	26.1
Not implementing	5.4		2.9	15.6	
n =	165	29	68	45	23

Source: IDC's *Cloud Survey*, 2011

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In other surveys that IDC Manufacturing Insights has conducted over the past year, and in conversations with manufacturers, we see the following responses regularly:

- Total cost of ownership remains the most visible benefit.
- Adoption of enterprise-level tools is increasing.
- Enterprise-level applications delivered as a service appeal to many small and midsize manufacturing companies.
- Supply chain is viewed as the business area with the most potential to grow cloud adoption.
- Data security persists as a concern.

Challenges in a "Traditional" Supply Chain and Common Complaints About IT

The manufacturing business is complex and is becoming more and more so as customer demand diversifies and supply globalizes. As a result, the requirements on supply chain organizations are intensifying, posing the following challenges to "traditional" approaches:

- Collaboration problems with partners, customers, and consumers
- Inability to easily and quickly acquire new capabilities
- Lack of data quality and consistency
- Lack of a single view of the business
- Extended, distributed supply networks and fulfillment partners
- IT systems and business process incompatibility
- Lack of access to systems and information — particularly for remote or field workers

These challenges have proven to be both persistent and pernicious, and frankly, they are proving to be increasingly problematic as companies' supply chains grow in complexity. At the same time, supply chain organizations have common complaints about their IT tools, namely:

- The high fixed cost of IT
- Limited resources (both line of business and IT) available to address problems
- Lack of speed of implementation

- Lack of ease of use
- Lack of partner alignment
- The proliferation of "shadow IT"

The Benefits of Cloud IT for the Supply Chain

In the discussion of challenges inherent in current supply chains and IT tool deployment, a few overriding themes emerge: collaboration, IT capability modernization, and implementation clock speed. Certainly, cloud IT will not magically solve all of these issues; however, it remains our contention at IDC Manufacturing Insights that cloud brings an intriguing new approach to these challenges.

Collaboration

There are a myriad of reasons why manufacturing companies collaborate poorly, but it is not our intention to recite a litany of reasons here. However, in our discussions with manufacturers, lack of common systems/processes and barriers to entry for smaller supply partners come up routinely as constraints to more effective collaboration. In both of these cases, cloud IT is in a position to address the problem by enabling a common, broadly accessible platform for both headquarters and field employees. It is also notable that where we see cloud initially adopted within the supply chain is where there is the benefit of the "network effect" in terms of either external constituents (i.e., an established community of carriers) or a common view of the business (i.e., transparency of data).

IT Capability Modernization

If there is a single term that best describes the modern supply chain environment, it is *volatility*. The unpredictable nature of both demand and supply is creating havoc in traditional manufacturing organizations. Forecast accuracy levels are at historic lows, and supply disruptions are on the rise. One of the more significant consequences we see resulting from these trends is the desire for businesses to have variable rather than fixed-cost structures. This is manifest not only in terms of outsourcing but also in how companies acquire IT services. At IDC Manufacturing Insights, we think of this as IT resiliency — the ability to scale easily to demand or business changes — something that cloud IT can do inherently more effectively than traditional on-premise applications. But the volatility in the external business environment also translates into volatility in IT requirements and suggests the need for more frequent modernization and/or capability enhancement. Enhancements to traditional behind-the-firewall applications may be easy in some cases, but not in most cases.

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Implementation Clock Speed

Perhaps the most powerful ability that cloud can bring is in better aligning the clock speed of business with the acquisition of IT capabilities. The clock speed of business is running faster and faster for most manufacturers, whether in the volatility of demand, the requirements for shorter lead times, or the acquisition of new capabilities. Yet, the delivery of IT capabilities remains largely at the same pace with multiyear implementations that increasingly make no sense. After all, with the volatility in the marketplace, how can you possibly anticipate where your business will be? Just as companies need to be able to make quick, intelligent supply chain decisions, they also need to be able to support these decisions with agile, flexible IT tools — precisely the kinds of things cloud can bring to the table.

Essential Guidance: A Few Things to Keep in Mind

Whether the hype surrounding cloud computing proves fully warranted or not remains to be seen. As we have argued in this paper, the current state of cloud offers intriguing capabilities that make it an attractive fit where business conditions favor flexibility, speed, and the desire for an extended network of partners or service providers. Cloud will not solve all of your problems; however, where failures in collaboration, IT capability modernization, or implementation clock speed occur, it is worth a closer look.

As manufacturing companies turn more to cloud as a viable alternative to an on-premise installation, they should consider a few factors:

- **Clarity around key functionality.** Don't expect less from a cloud offering. Ensure that the selected application is adequately robust and scalable and satisfies your business needs.
- **Understanding of the economics.** Understand how usage fees are generated and the contract length. Know if you can easily scale usage levels up and down without any assessment of penalty fees or compromises in performance.
- **Implementation timeline.** Be specific on the duration of the initial implementation process and the internal resources required and for how long.
- **Ease of use.** Know how easy the tool is to learn and use and whether it has embedded educational/tutorial functionality.
- **Data security.** Do the due diligence necessary to ensure the robustness of the security provisions and disaster recovery capabilities.

- **New product capabilities.** Determine how new functionality is added and if it will be available to the business when you need it.

We began this paper with a discussion of TCO, so perhaps that is a good place to end it. IT budget pressures will continue to motivate CIOs to look at cloud computing in increasing numbers, but as we have argued, it can be so much more than just a mechanism for reducing cost. We would advocate taking a total value of ownership (TVO) approach to cloud offerings. You will be surprised at the result!

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