

CLOUD FINALLY ADDRESSES MANUFACTURERS' MOST PRESSING BUSINESS CHALLENGES

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THE THREE Bs FOR CLOUD ADOPTION ARE CONVERGING, FINALLY PAVING THE WAY FOR MANUFACTURING'S MIGRATION TO CLOUD

It is no surprise that manufacturing functions were not the first workloads to move to cloud. The equation for cloud adoption to accelerate comes down to the three Bs: barriers, benefits and business impact. It may have taken longer for those three elements to fall into place for manufacturing applications, but now that they have, we expect cloud to play a much larger role in how manufacturing processes are executed and managed. In fact, if you look at how ERP overall has been aligned with cloud delivery, the broader group of applications that includes HR, finance and various manufacturing functions has been one of the latest groups of applications that customers are transitioning to cloud delivery. As shown in Figure 1, adoption of cloud ERP functions may have been delayed, but recently picked up steam, putting it on par with most other SaaS applications in overall cloud adoption.

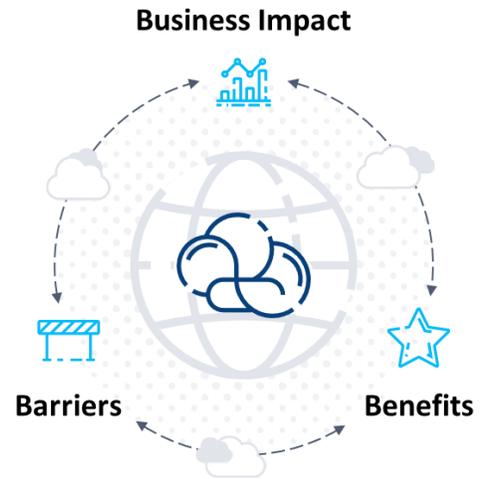
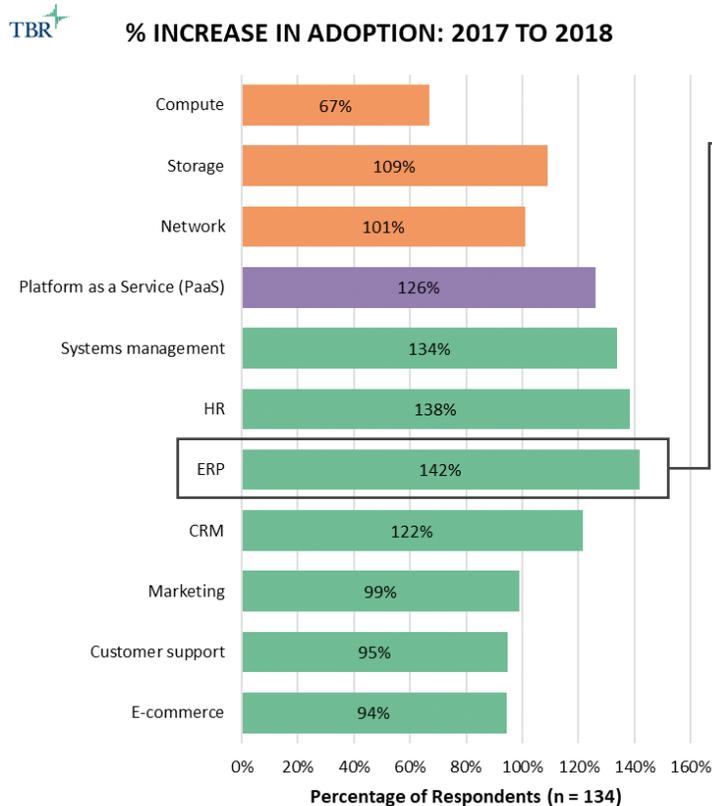


Figure 1



SOURCE: TBR 1H18

Includes manufacturing, supply chain management, planning, purchasing and professional service automation solutions

THE HISTORIC BARRIERS TO CLOUD IN MANUFACTURING HAVE ALL BUT ERODED

In many ways, manufacturing workloads such as supply chain, manufacturing execution and asset management set nearly unsurmountable cloud adoption barriers. As seen in Figure 2, the major pain points around cloud adoption have been relatively

consistent for SaaS adopters, with security, integration and disaster recovery topping the list. For manufacturing functions, these concerns are even more heightened, as the degree of integration, performance requirements for live operations, and security inherent in mission-critical workloads are challenging to deliver regardless of where these solutions reside.

Many of the general advancements in cloud delivery have been particularly beneficial in addressing these primary concerns for manufacturing organizations. The advancements have come from the billions of investment dollars that cloud providers have poured into building out their cloud data center footprints and enhancing the performance and security of their off-the-shelf cloud-native solutions. In some ways, these legacy barriers have become selling points for cloud-delivered functions, as illustrated by the following manufacturing decision makers.

“Disaster recovery is one of the biggest reasons why we’re considering cloud-delivered manufacturing solutions. Being able to leverage the multiple data centers of these providers and the built-in backup and failover capabilities would take a lot of that effort and investment off us.”

— VP of Operations, Plant Manager,
Industrial Parts Manufacturing

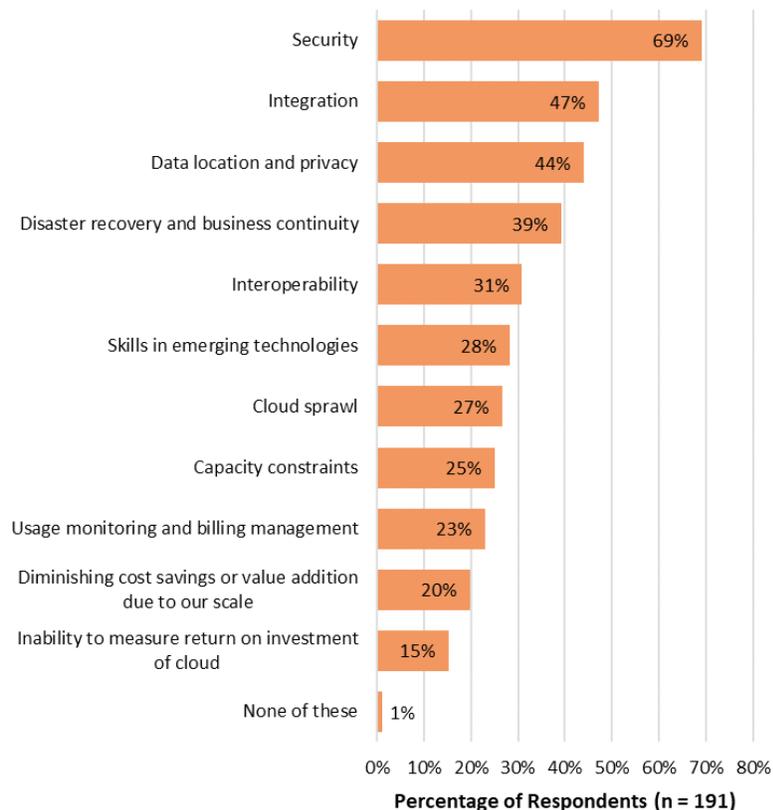
“We can talk about security all you want, but our manual processes are a huge liability from a control perspective. To get the visibility we need from our partners we are doing flat file uploads, which we know is not secure or controlled. Automation is definitely the best way to get that done, and I think cloud solutions inherently have that type of capability.”

— VP of Operations,
Plant Manager, Industrial
Parts Manufacturing

Figure 2



CLOUD PAIN POINTS: SAAS ADOPTERS

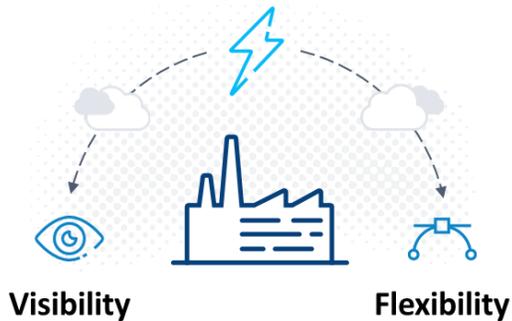


SOURCE: TBR 1H18

VISIBILITY AND FLEXIBILITY ARE CRITICAL BENEFITS TO ENSURE MANUFACTURERS' SURVIVAL

Many manufacturing challenges are consistent across organizations, regardless of the industry.

The most widespread issue is constraints on visibility into the manufacturing process. Integration with suppliers certainly came up in our discussions, but even being able to manage inventory levels and manufacturing capacity was a constraint.



The pace of change in markets that manufacturers serve is occurring much faster than their current solutions were built to accommodate. Acquisitions are a common strategy to achieve growth and economies of scale, but legacy systems are not designed to integrate or expand as the businesses and operations are brought together. Customers want the ability to customize products, but long process times and systems set up for high volume production are unable to accommodate that desire. Lastly, the competitive pricing landscape requires maximum facility utilization. A common element underlying these business issues that is not well addressed by many legacy manufacturing solutions is flexibility. To address the need for flexibility, a more agile technology platform is a critical objective for many manufacturers. Many of the homegrown or legacy ERP tools supporting manufacturing processes are seen as outdated. Those systems, which are very slow to change or adapt, are set up for consistent manufacturing operations. The pace of change in the markets that manufacturers serve are demanding a more agile approach.

“An initial step I took coming in was to facilitate the sharing of data as we opened facilities in China. We had no visibility before, which led to issues around recalls and an inability to manage the expiration time frames for our raw materials in those locations.”

— Supply Chain Director, Food Manufacturer

“Right now, the only demand signal we have is our retail partner placing an order. Ideally, we’d have better insight to anticipate and predict the timing and volume of those orders before they happen.”

— VP of Operations, Electronics Manufacturer

“Our value proposition has evolved into two main components: the ability to customize our products and for our customers to receive their order within two weeks. Traditional ERP just can’t handle that level of customization and variability.”

— VP of Operations, Electronics Manufacturer

“We acquired a company in September and within two weeks we migrated everything into our ERP and had given them access to some services on day one. In that case, we could launch a product to market one month after acquiring a company; it’s astonishingly good. Prior to that, six months was our best record.”

— Head of IT Services, Healthcare Manufacturing

SAP'S DIGITAL SUPPLY CHAIN PORTFOLIO IS FULL OF NEW TECHNOLOGY BUT ROOTED IN BUSINESS VALUE

SAP's presence in manufacturing applications is tough to underscore. The company either had solutions in place or was closely watched by all the interview respondents we spoke with during this research. Most customers had on-premises SAP solutions in place, which certainly were still able to support the majority of manufacturing processes. However, there was interest in more targeted solutions that incrementally modernize operations, which is one of the design tenets for SAP's Digital Supply Chain portfolio. Particularly with new emerging technologies such as Internet of Things solutions, blockchain, machine learning, augmented and virtual reality, and digital twin, customers were in different states of awareness and adoption, which lends to more incremental adoption into the manufacturing process. Part of the dynamic is driven by the equipment being used for manufacturing operations, as highlighted by this high-tech manufacturing manager.

"I brought machine intelligence with me, but we had to use a third-party add-on to deploy the sensors and dashboard. Our machine life span can exceed 20 years, so most did not have integrated intelligence. In an ideal world, we could consolidate that information into our core ERP system, but anything is better than what we had."

— **VP of Operations, Electronics Manufacturer**

By providing a core ERP platform with a selection of modules that address deeper manufacturing functions, SAP is allowing customers to design a solution based on their most pressing business needs. Based on feedback from customers, SAP's Digital Supply Chain portfolio aligned directly to many of the most sought-after business outcomes.

TRANSPORTATION & LOGISTICS:

"Better visibility into when shipments arrive has a direct monetary impact, we could reduce the fees we pay for not meeting our unloading time frames with our suppliers."

— **Supply Chain Director, Food MANUFACTURER**

"Our customers have crews in place to receive and install our shipments; if we're early or late it costs them money."

— **VP of Operations, Electronics Manufacturer**

PRODUCTION PLANNING MANAGEMENT & OPTIMIZATION:

“To meet orders, I need to make full use of the nine facilities I have to shift production to different sites based on both the capacity and inventory availability.”

— Supply Chain Director, Food Manufacturer

“If we have raw materials coming up on expiration, we’ll coordinate with both marketing and our manufacturing facilities to minimize wastage and drive as much revenue as we can.”

— Supply Chain Director, Food Manufacturer

INTEGRATED MANUFACTURING EXECUTION:

“Skills are the biggest challenge for us. We can’t find or keep enough skilled and unskilled labor. Anything that increases automation goes a long way to helping reduce that risk.”

— High-tech Electronics Manufacturer

THE COMBINATION OF CLOUD DELIVERY AND SAP INNOVATION CAN HELP MANUFACTURES ADDRESS DIFFICULT CROSSROADS

Manufacturing organizations are caught at a difficult crossroads. The demands for greater visibility, more flexibility and increased automation are constrained by the realities of physical plants, systems and processes. Somewhat ironically, cloud solutions have delivered many of these benefits to other functions within many organizations, but have been more slowly adopted within the manufacturing function. With many of the security, performance and integration barriers greatly diminished over the last five years, the stage is set for the next phase of change to occur within manufacturing, driven by cloud solutions that align quite well with the biggest challenges facing these practitioners. Greater visibility can be achieved through a consistent cloud platform, delivered via the growing network of globally distributed data centers, enabling real-time data to be shared within entire networks of suppliers, manufacturers and distribution partners. Flexibility to align supply chains and manufacturing operations based on smaller batch orders and customization can be enabled through configuration of a modern cloud environment. For emerging technology, a cloud environment is uniquely suited to roll out updates and enhancements as they occur, enabling customers to benefit from the latest developments.

As manufacturing organizations integrate more cloud solutions into their IT environments, SAP brings a unique value proposition. Though SAP has been the trusted provider of on-premises manufacturing solutions for decades, it is not resting on its laurels. SAP is leading customers into the cloud model, innovating to provide solutions that directly address its customers’ most pressing business needs,

centering on flexibility, through consistent access to inventory, supply chain and manufacturing capacity. These solutions cannot only be deployed modularly, but they can also be integrated to provide the cohesiveness and visibility customers so desperately need to gain competitive business advantages. As manufacturers make greater use of cloud-delivered technology, we have no doubt SAP will continue providing customers both the benefits of cloud and the best of emerging technology with an ongoing commitment to innovation.

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