ERP on Cloud: The winds of change
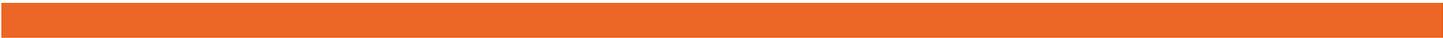
Madhavan Krishnan
Head - Cloud Strategy
Manufacturing & Hi-Tech Business Unit
Wipro Technologies.

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Three rapidly moving developments are shaking businesses across the world: cloud technology, mobile adoption and data proliferation. Core manufacturing processes have been dramatically impacted by the three. Manufacturing, always a little tradition bound, is suddenly witnessing brisk change. The enhanced availability of rich data and mobile adoption is ensuring that the data reaches end users quickly and can be acted upon instantly. Enabling this is scalable and standardized infrastructure on cloud.

Cloud is reshaping the way technology is used. It has made computing power, storage, back up, development platforms, testing environments and the ability to run a variety of applications available with cost savings and increased options for users. Everything from Business Support Systems to Operations Support Systems is migrating to cloud. Businesses are making saving through higher efficiencies, by lowering IT staff requirements and circumventing capital investments in IT. How long can it be before ERP, the cornerstone of manufacturing, begins to completely re-platform itself exploiting cloud?

Industry indicators of change

Non-core areas in manufacturing such as standard administrative business processes, CRM and HR, procurement and project management have already begun to move to cloud. Core processes such as general ledger, accounts payable and receivable, budgeting and costing, production planning, scheduling etc. have been a little sluggish to follow.

But the signs of major change are around us. NetSuite has released workflow management software on a cloud backbone that can be configured and customized for business processes such as customer notifications, sales processes for follow up, customer record management and SLA enforcement. Several other smaller ERP players, including the likes of open source ERP provider Compiere, are in the market with cloud versions of their products.

It's a strong and growing trend. It is forcing larger ERP players to respond aggressively. Global technology majors SAP's acquisition of SuccessFactors shows that traditional ERP providers are responding to the threat posed by smaller cloud ERP vendors. SAP has taken cloud seriously and is re-architecting HCM, CRM, Financials and Procurement to create a new class of cloud applications that complement core ERP. Oracle too is responding with its Cloud Services to deliver an enterprise grade ERP cloud solution. Oracle integrates a complete suite of solutions and services with on-premise systems.

Major ERP product vendors are making a push towards cloud, bringing together diverse technologies related to mobile, data and analytics (for the record, they are also integrating social into the new products). They are able to deliver a rich user experience, improved performance and increased flexibility that an on-premise-only implementation may find difficult to match.

In emerging economies such as BRIC nations and South East Asian markets

that are largely considered the frontiers of new growth, the need is for deploying low cost ERP solutions. In these highly competitive regions, manufacturing cannot afford to invest too far ahead of demand. The ERP solutions must be flexible, in proportion to needs.

Amongst the most daunting aspects of ERP adoption, that prevents most manufacturing businesses from making an investment in ERP, is the fact that they need to come to grips with the technology. This is especially true of the medium and smaller manufacturers. They don't want to invest in unnecessary infrastructure. They want plug-and-play features. And they want to pay for only what they use.

Cloud is creating the solution to address these emerging needs. Manufacturers are adopting cloud for operations ensuring that non-core areas go into cloud as a first step. The strategy of de-coupling core areas from a homogenous monolith ERP is a good one for those keen to leverage cloud and a pay-as-you-go model.

Large manufacturers are discovering that their needs are no different from those of medium sized businesses. They too are de-coupling core processes and using cloud ERP for non-core processes. In several instances, subsidiaries and sister companies of larger manufacturers are using cloud ERP that provides access to elastic infrastructure but is also well integrated with the mobile, data and analytical dimensions.

Organizations show the way in leveraging ERP on cloud

Worldwide, organizations have begun to show how ERP on cloud can be leveraged to deliver a variety of positive outcomes related to cost management, expansion in new markets and in M&A scenarios:

- **Improve productivity and optimize ERP run costs by moving Development and QA ERP instances to cloud:** Many manufacturing ERP organizations incur high ERP running costs by maintaining multiple environments (Development, QA, Staging and Production). While this may be necessary to ensure sanity of functionality and data and change management is protected, there are multiple ways of optimizing the overall run costs by moving non production environments to cloud. A large Europe head quartered industrial manufacturer leveraged Development and QA environments on virtualized private clouds to reduce the run costs of overall ERP environments down by 25% without compromising on performance and SLAs. In addition to reduction in run costs, the cost of environment provisioning and configuration of ERP instances for Development and QA on cloud ensured improved developer/ tester productivity, faster resolution of bugs and issue management. These are invaluable benefits in a world of fast paced changes.

- **ERP on cloud for rapid expansion into newer markets:** Many manufacturing organizations are looking at emerging markets in Asia, Latin America and Eastern Europe for growth through access to new markets for their products and/ or access to lower costs of labour and raw materials. With market uncertainties and the additional burden of learning curve, manufacturers are looking at lower capital expenses to get their operations functional within the shortest possible time. Cloud based ERP systems with their low upfront costs, elasticity in pricing models and the ability to integrate with the HQ master ERP systems, provide unprecedented flexibility to deliver the desired outcome
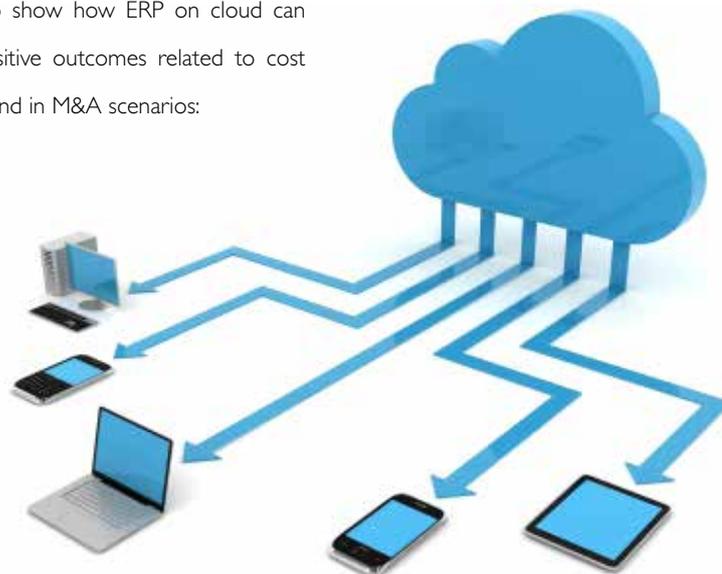
without worry of software licenses, infrastructure updates, patch management etc.

- **Cloud ERP for special scenarios like Mergers and Acquisitions (M&A):** M&As are increasingly becoming key strategic element of growth for global companies. With an M&A, a manufacturer is looking to standardize and integrate key systems and process into a parent company in the shortest possible time. Departments like HR and Finance need the capability to roll out systems that will help with acquisitions rapidly. Cloud based ERP solutions tightly integrated with parent ERP systems like SAP can help provide manufacturers with rapid capability and confidence to integrate new acquired entities.

Manufacturers have begun to appreciate the advantages of using ERP on cloud:

- Enhanced flexibility (modular implementation)
- Enhanced customization (new ERP solutions are highly configurable)
- Lowered cost of ERP implementation (due to lowered infrastructure requirements)
- Lower cost of ownership (pay-as-you-go model)
- Better integration with emerging technologies (mobile, data, analytics)
- Lowered cost of IT talent (no on-premise installations to manage)

The developments indicate that ERP on cloud is not a matter of when manufacturing will become part of the trend, but what it will choose to deliver via cloud first before it embraces ERP on cloud completely.

Mobility driving ERP on cloud

Mobility is adding a new dimension to manufacturing. Mobile shop floor technicians, field technicians, and remote work forces are a growing trend. They need information and intelligence on the move for quick decision making. In addition to the growing business environment that is compelling the adoption of mobile technology, there is the Bring Your Own Device (BYOD) trend that is liberating workforces from their desks and improving their productivity. The BYOD trend is also forcing IT to address the needs of a diverse workforce with a wide array of devices. As manufacturing businesses implement a BYOD policy and extend the enterprise to gain operational efficiencies and real time collaboration capabilities, ERP integration with mobility will be a natural outcome.

Manufacturers who have a mobile strategy in place have an urgent need to integrate ERP technology with the mobile cloud, providing remote workers with immediate access to a stream of live enterprise data. This is especially true in emerging economies where traditional and expensive IT infrastructure like desktops and large data centers has not been fully deployed across manufacturing. These are the markets that want to extract the most from expensive ERP implementations and mobility will play a major role in the process.

ERP providers like SAP have already put in place a large mobility suite via their acquisition of Sybase and Syclo. The company is also moving towards its vision of being a mobile ERP leader by opening its platform to developers hoping to ramp up its mobile app store for functions such as Travel & Expenses, CRM, HCM etc. SAP's bet on mobility is evident from the fact that the company is determined to simplify its mobile licensing policy. There is adequate evidence to indicate that mobility is going to meet ERP at the cross road of cloud.

Mobility holds the promise of delivering higher value from ERP implementation in cloud because of:

- Improved operational efficiencies (employees have anytime-anywhere access to critical data)
- Ability to extend business to new markets and geographies (no requirement for investments in infrastructure and connectivity)
- Ability to integrate other enterprise mobile systems (MES, mobile field forces, sales, inventory tracking, etc)

Using cloud can lower the cost of integrating mobile initiatives with ERP, delivering true Enterprise Mobility.

Big Data and its role in driving ERP to cloud

When mobility and ERP are spoken of in a single breath, can Big Data be far behind? Manufacturing contributes 18 to 20% of the world's GDP and also contributes the highest amount of data (it has the talent available to capture the data and presents the highest overall ease of data capture). Discreet manufacturing, says the McKinsey Global Institute in its report Big data: The next frontier for innovation, competition and productivity (June 2011), had the highest amount of data stored in the US in 2009 (966 terabytes). Process manufacturing stood at #4 (with 694 terabytes).

Data in manufacturing is quickly becoming the new oil. Manufacturers worldwide are using it to furiously extract competitive advantage, create better products for consumers and discover new services to add to their bottom lines. The McKinsey report points out that manufacturing can achieve up to 50% reduction in product development and assembly costs and can achieve up to 7% reduction in working capital. Data holds real value to manufacturing.

One of the biggest sources of the data in manufacturing is from ERP. And today, as manufacturing adopts the BYOD trend, mobile initiatives are generating even more data in real time. But is manufacturing making good use of the data? In most instances, the industry would grudgingly agree that data is under performing.

There is, however, good news round the corner. Big Data generated by manufacturing is forcing cloud adoption – which is where data is being stored, cleansed, sliced, diced and analyzed using massively advanced analytical engines that can remix data from numerous conventional and unconventional sources. Again, we see that ERP is at the intersection of cloud and Big Data.

Is this the end of ERP as we know it?

A major shift has been taking place over the last few years in how enterprises run their businesses and how employees prefer to perform their tasks and duties. Manufacturers are hedging their bets in an uncertain economic environment on elastic provisioning and pay-as-you-go models for infrastructure and services. Innovation is driving wedges into rigid, time-tested systems and delivery models. An increasing number of manufacturers have begun to take some of their basic ERP functions to cloud.

Summary

At the moment, ERP in cloud is poised to play a major role in manufacturing. As organizations attempt to increase flexibility, enhance customization, lower costs and drive the integration of emerging technologies, cloud will become central to success. As manufacturers acquire confidence and begin to experience the upside, modules beyond basic ERP functions will follow into cloud. Mobility and data growth are adding to the need to take ERP to cloud so that efficiencies can be improved and intelligence leveraged regardless of location and time. The coming change is dramatic. One can't say that the ERP landscape is being reshaped. Instead, it would be accurate to say that it is being re-ordered in cloud!

About The Author

Madhavan Krishnan is Practice Head for Cloud Services in Wipro Manufacturing and Hitech Business Unit responsible for Cloud Solutioning and GTM . He has 15 years of Global IT Services Industry experience. Prior to this role, he was Head Cloud Service for Wipro's Business Solutions of India and Middle East market. He was one of founding members of RFID and emerging technologies practice of Wipro Enterprise business in 2005. Madhavan is author of several papers on technology and business and has been a speaker in forums like CII, MAIT among others. He can be reached at madhavan.krishnan@wipro.com

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