Seeing Past the Clouds - PLM and what’s What?

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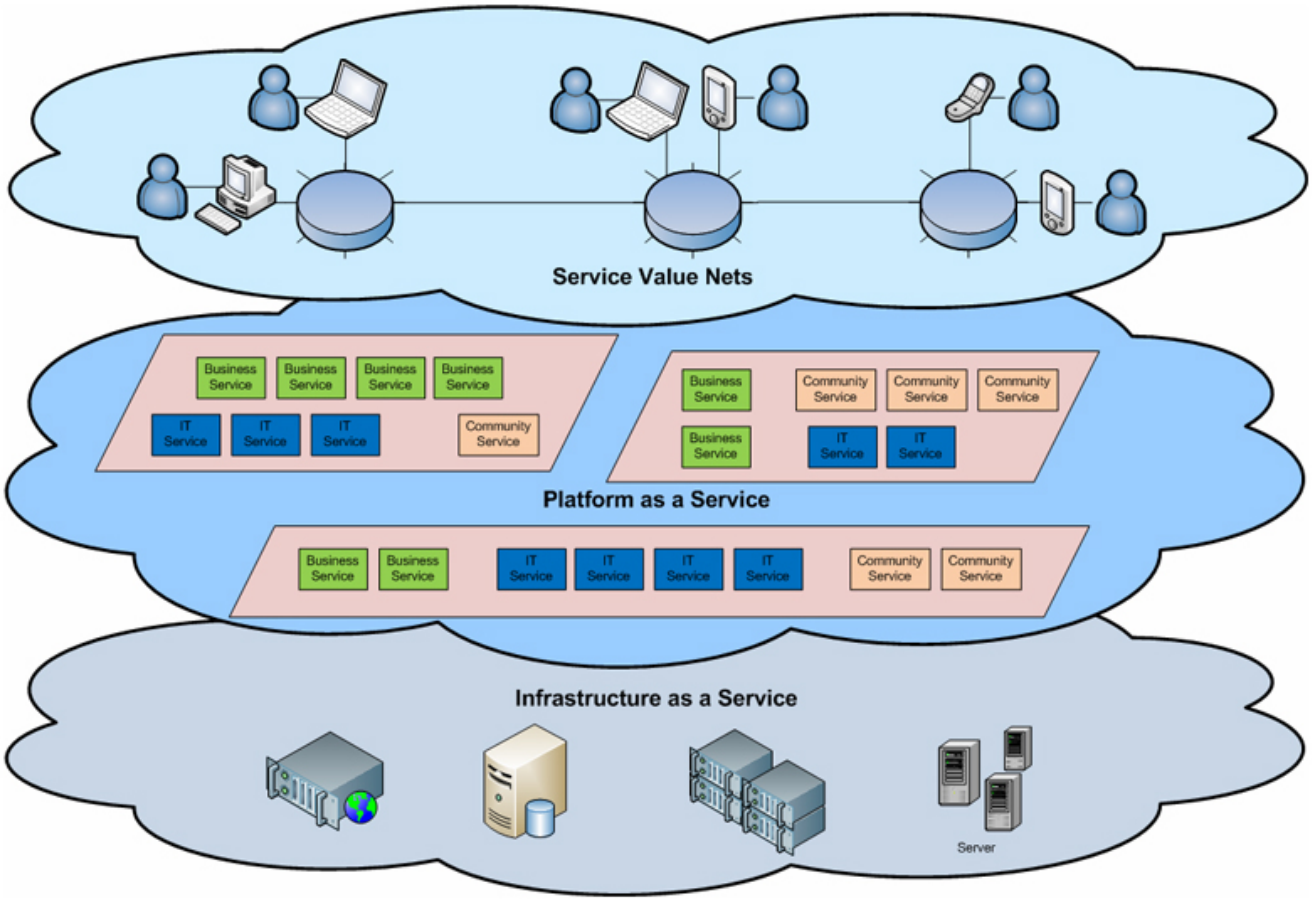
There is a lot of talk about cloud computing today, and its exponentially growing presence among enterprise technology, particularly Product Lifecycle Management (PLM). While PLM “in the cloud” is available today, its adoption can be slow. Customers are having a difficult time deciphering when, how and even whether to use PLM in a cloud. With the type of sensitive information that is managed in PLM, there has been some apprehension about moving to the cloud. Adoption is slowly gaining momentum as more customers see the available options and advantages.

Product Lifecycle Management software is branching out from its traditional stronghold in engineering-intensive discrete manufacturing and moving aggressively into such process-oriented industries as energy, food and beverage and consumer goods, according to a new study released in November 2011 from the ARC Advisory Group. Due to this move, cloud-based PLM is receiving more support and higher adoption as these industries, new to PLM, start to deploy newer technology and more evolved IT computing environments. However, there is still quite a bit of education needed of cloud-based PLM in the market overall.



Cloud Computing supports the increase in the diversification of the activities that different companies undertake.

PwC Principal Technology Leader Tom Degarmo puts it best, "cloud computing accelerates innovation and improves time-to-market successes and offers added flexibility within PLM applications. Overall it can improve connections across a company's network of suppliers, time zones and cultures. It enables an extendable enterprise."

Four Cloud-based PLM Strategies

The easiest explanation of cloud computing is to view it as a grouping of remote computers whose resources you can harness on an as-needed basis regardless of where the computers reside, who owns them or can access them, etc. According to Chuck Cimalore, Omnify Software President and CEO, "Product Lifecycle Management is a set of diverse business strategies, processes and applications. To identify the right projects, processes and problems that can be solved by introducing cloud-based PLM solutions can be a tall order when you factor in the importance of addressing ownership, location and privacy/security issues." Analysts agree and are working with PLM customers today that are grappling with the concept of cloud computing and how best to address these issues.

Analyst firm Frost and Sullivan reports that most people refer to public clouds when

they talk about cloud computing. There are four types of cloud strategies being deployed in PLM applications. "**Public clouds"** are typically systems that are shared by multiple people who use the system and have no control over who their fellow users can be. "**Private clouds"** infer systems available for the sole benefit of a single company/entity where cloud data is secure and protected. Then there are "**community clouds"** where only specially selected companies with common or related goals participate in the system (like partners, channels, supply/design chain, for instance). And lastly there are "**hybrid clouds**" where a private cloud can extend onto a public cloud for specific activities and on an as-need basis. The benefit of a hybrid approach that incorporates a public cloud is that it provides extra performance scalability for the private cloud that would be in use.

Identifying Cloud Services: SaaS, PaaS and Iaas

In addition to the four types of clouds described earlier, there are 3 segments of cloud-based technology called SaaS, PaaS, and IaaS. The first, SaaS short for "software as a service" or sometimes referred to as "software on demand" deploys over the internet and is made available to users when requested. It is usually served as a payment per-usage or on subscription basis. According to Forrester Research, SaaS is the oldest and most mature segment of cloud computing, citing examples like that of salesforce.com, Netsuite, Google Gmail among others.

PaaS, which stands for "Platform as a Service," is a combination of a development platform and solution stack that is delivered as a service on demand. Forrester Research describes it as an infrastructure that can be used to develop a new software app or extend existing ones without the initial cost of buying and implementing additional hardware and software. PaaS often can extend the capabilities of existing SaaS solutions, which Forrester Research sites as Force.com (from Salesforce.com); Google App Engine and Microsoft Azure.

Lastly IaaS, which is "Infrastructure as a Service," provides an environment for running user built virtualized systems, sometimes termed as a platform virtualization environment. It encompasses service, software, data-center and network equipment delivered as a single bundle. Forrester Research cites examples of IaaS environments as Amazon EC2 (Elastic Compute Cloud), GoGrid, and Flexiscale.

Case in Point: The Ultimate Hybrid Cloud Model

What does cloud computing mean for business strategy? How will cloud computing impact any enterprise more broadly? For Mevion Medical Systems, Inc., a radiation therapy company dedicated to advancing the treatment of cancer, its workforce is distributed throughout the globe and requires its business solutions to be available 7x24 on all company-supported platforms (PC, Mac, Linux, Droid, and IOS). According to Edward Quinn, Mevion Medical Systems IT Manager, "to do this, Mevion is leveraging a "hybrid cloud" in order to be able to scale quickly and efficiently to distributed cloud data centers at far less cost than purchasing expensive equipment or renting/building out corporate data centers. The IT department can leverage the advanced international infrastructure already in place by leading cloud computing companies and activate and pay only for the services that its business needs."

Clould computing can facilitate the proper management of information technology resources within the Achieving agility is a key component to the company's business plan. As a pioneer in modern proton therapy systems, Mevion always tries to leverage technology and solutions that provide a distinct advantage. In this case, it is cloud computing because it will allow Mevion to expand quickly while providing a wide range of solutions. It also allows the company to decrease overall technology costs and provide a reliable, agile IT infrastructure.

Integrating SaaS, PaaS and IaaS within One Computing Architecture
The Mevion "hybrid cloud" computing architecture utilizes both internal and external cloud solutions that will provide SaaS, PaaS and IaaS solutions. The architecture will support a distributed workforce utilizing key security measures; integrate with the corporate data center to ensure data integrity, and scale across multiple external solutions to ensure reliability and uptime.

The Mevion IT Department has begun deployment already and will have a fully functioning cloud-based environment by the end of 2012. "IT has been researching this strategy since 2009, so it does not happen overnight. Our IT group needed to ensure that their "hybrid cloud" computing strategy would ensure data security, integrity, and reliability. Going forward, all business solutions must adhere to this architecture," said Quinn.

"Our entire company will be on the Mevion "hybrid cloud" architecture, depending on the employee's job function. All employees in the company utilize the Omnify Software Empower PLM Solution on a daily basis from their computers, smartphones, and tablets; both within the Company Network and through remote secured VPN connections," Quinn continued.

PLM Harnesses the Power of the Cloud
Omnify Empower PLM allows customers to decide which strategy is best for them. "We recognize that companies will have different deployment strategies, and that these strategies may, in time, change. In turn, we have designed our products and services to support cloud-based, on-premises, and hybrid methodologies," said Cimalore. Organizations are starting to identify that they can really benefit from including outside suppliers on their cloud. The elastic nature of cloud platforms makes it possible to scale up when needed which can greatly extend simulation, visualization and computation products. According to Quinn, Mevion anticipates that they will look to including their external partners within their cloud environment in the future. "When we move Omnify Empower PLM to a secured cloud platform, the usage may expand to support authorized company business providers/partners," said Quinn.

The Analysts Sum it Up
Most industry analysts (Forrester, Gartner, Frost & Sullivan, ARC and The Yankee Group) covering IT agree that the power and potential of cloud computing, properly leveraged and deployed, can have a significant impact on the PLM industry. PLM customers are giving serious consideration and evaluating their PLM business processes in regard to how to run them seamlessly and securely connect them to

cloud-based data sets. This is to say that today still few are fully deployed. It is still in the infancy stages of use even if the technology has matured. It is still curing.

However accessing data, processes and business intelligence in the cloud from a PLM platform could, if done correctly, enable global companies a way to leverage critical information sources, maximize expert resources and manage complex analytics - all from within their PLM system. Forrester states that the overall objective for most companies implementing PLM in a cloud is to optimize productivity and achieve an actual ROI from their cloud deployment.

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