



Extreme Competition

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Latest book:
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Cloud Oriented Business Architecture

This Column is adapted from the new book, [Dot.Cloud: The 21st Century Business Platform](http://www.mkpress.com/cloud), Meghan-Kiffer Press, 2009 (www.mkpress.com/cloud).

First things first: What is the cloud? What the hell is cloud computing? "It's complete gibberish. It's insane. When is this idiocy going to stop?" – Larry Ellison, CEO, Oracle¹

Okay, like BPM, Web 2.0, and Enterprise 2.0, it seems cloud computing can mean whatever you want it to mean. It's supposedly cloud computing just so as long as *whateveritis* goes outside the company firewall. Go play the cloud-computing definition game and come up with your favorite definitions. But whatever the definition, cloud computing, still in its infancy, is game changing. Remember how the Internet affected the retail book industry that was slow to grasp an understanding of the non-secure, unreliable, poorly-governed Internet before it got *Amazon-ed*? Ditto for cloud computing.

Cloud computing makes it possible to create new "business platforms" that can enable companies to change their business models and collaborate in powerful new ways with their customers, suppliers, and trading partners – stuff that simply could not be done before. What that stuff is, is up to entrepreneurs and intrapreneurs. But no doubt there are *cloudy* new Amazons and Googles hard at work, and they will no doubt teach the business world new lessons.

Cloud computing is the next step in the evolution of the Internet as a source of "services." It's those services that users are interested in, not the underlying technologies. While most people have become accustomed to using services such as emailing or searching or shopping on the Internet, by extension, it makes sense that business technologies should be accessible in the same way.

What's important for companies to consider today is that cloud computing isn't about technology; it's about technology-enabled business models and business innovation.

No, there won't be a "big switch" where companies dump their data centers and move to data-center boarding houses in the sky (Amazon, Microsoft, Sun, Dell, IBM, Google, et al). The PC didn't eliminate the mainframe; the Internet didn't eliminate the PC. They became elements in overall IT architectures: three-tier client/server, n-tier distributed object computing, and other forms of distributed computing architectures. So, let's consider some of the major forms of cloud computing that are bubbling up: consumer clouds, public clouds, private clouds, and hybrids.

Consumer Clouds. For non-geeks, cloud computing is simply a platform where individuals and companies use the Internet to access endless hardware, software, and data resources for most of their computing needs, leaving the mess to their Cloud Service Providers (CSPs). Got Facebook, twitter, ymail, gmail or Animoto? Then you got cloud.

Public Clouds. For geeks, cloud computing means grid computing, utility computing, software as a service, virtualization, computer elasticity, Internet-based applications, autonomic computing, peer-to-peer computing, on-demand, and remote processing – and various combinations of these terms.

Private Clouds. For large businesses and government organizations, private clouds are centered on the *virtualization* of data center resources. Company data centers are often idle over 80 percent of the time, due to over provisioning to handle peaks. Private clouds can change all that. GE, HP, and the Department of Defense all provide data-center consolidation examples.

Hybrid Clouds. Now it gets interesting. Forget the big-bang big switch from corporate data centers to cloud utilities. The corporate data center isn't going away, and perhaps the best example of connecting a private cloud to a public cloud is when it is used to gain resource *elasticity* for peak demands. Far more important, there are some very new and very important business architectures that can be embraced for new sources of competitive advantage – I call this Cloud Oriented Business Architecture (COBA).

Cloud Oriented Business Architecture (COBA)

Just like the way three-tier client/server and n-tier distributed computing architectures changed the world of IT, Cloud Oriented Business Architecture (COBA) opens new possibilities for business. COBA represents the fusion of Service Oriented Architecture (SOA), Web Oriented Architecture (WOA, a Web-based subset of SOA), and Process Oriented Architecture (as in BPM) set in the context of cloud computing infrastructures. COBA, centered on what I call “situational business processes,” will open new frontiers in how companies redesign their value chains to deliver their goods and services.

Let's go way back, and consider how Harvard's Michael Porter changed management thinking with his value-chain analysis. The value chains Porter described at the time were monolithic, with primary and secondary activities yielding margins based on the value added. Today, however, companies must not just optimize a single value chain, they must manage multiple, simultaneous chains that I call “value threads” (Figure 1), where any one value thread may serve just one customer for just one instance. Others may serve multiple customers over long time periods.

Sound complicated? It is. So what? Business is complicated, and is now completely driven by customers who expect what they want, and demand what they want to be delivered when and where they want it – call it mass customization; call it the new reality of 21st century business.

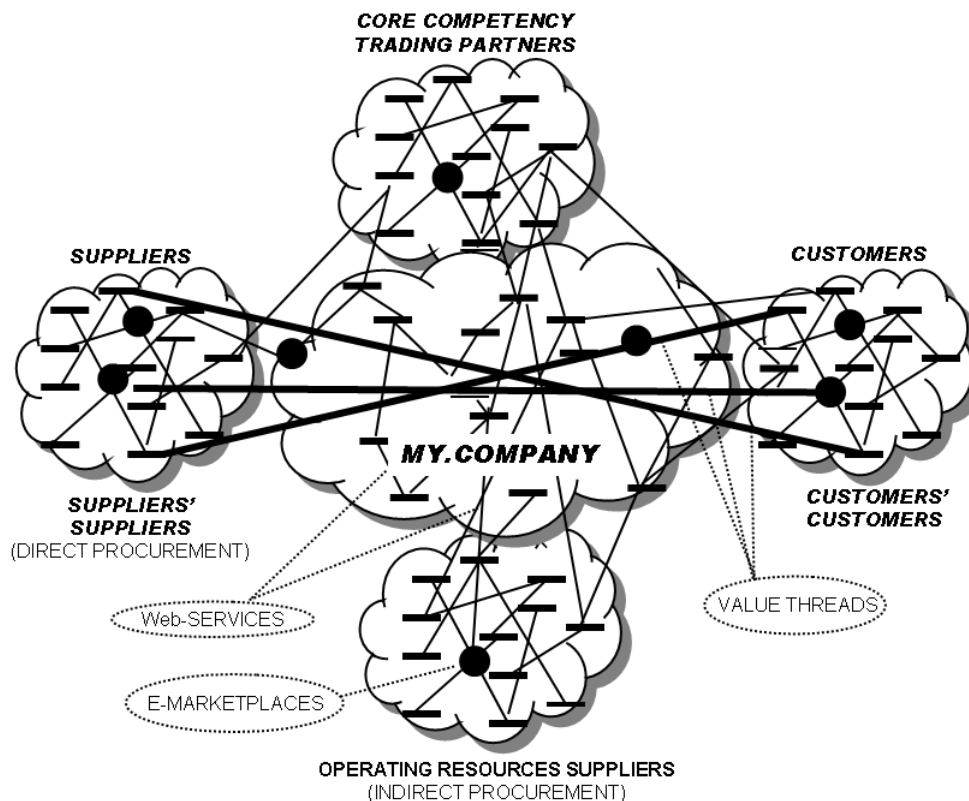


Figure 1. Multiple, Simultaneous Value Threads in the Cloud

Sound far fetched? Sure. But consider how businesses have had to serve their customers ever since the great shift of power from producer to the fully-informed consumer was made possible by the Internet. These days, a company has no alternative but to function as a complex adaptive system, ready for unexpected change and the whims of their ever-demanding, fully-informed customers. How does a company manage multiple, simultaneous value threads? The answer has a lot to do with “situational business processes.”

Tomorrow's Value Chains in the Cloud: Situational Business Processes

As companies adopt SOA to provide standardized services, the value of IT to the overall business mission grows exponentially. Reusable business process fragments (services) can be reused in many contexts and settings: The key is in reusable business process fragments, not just reusable software. Those reusable process fragments can be tapped as companies design innovative business processes as “situational business processes” across multiple business channels. That is, they can be adapted to completely new business situations: new initiatives, new campaigns, and new projects. So it is that service-oriented software flexibility and reuse enables business process flexibility and reuse. That’s the stuff of Cloud Oriented Business Architecture in the hyper-competitive markets of the 21st century.

Just as client/server and n-tier distributed architectures have given IT great flexibility, COBA gives business leaders the flexibility to form new bonds with customers and suppliers in real-time. Figure 2 depicts mashed up, end-to-end, intercloud situational business processes used by My.Company to launch a killer new product, let’s say a new 4G video phone, that is designed and produced by an original design manufacturer (ODM) in Asia. It’s a hybrid cloud mashup that’s

ready for a consumer swarm driven by Facebook. Public and private clouds are tapped to cover the full value-chain spectrum, from design to manufacturing to supply chain management, to marketing, merchandising, service and support. The grand process *orchestrator* is powered by a full lifecycle BPM Suite in a third-party cloud that provides end-to-end business process management capabilities. And when My.Company's compute resources become overwhelmed with demand, they will be augmented by a public *elastic* compute cloud.

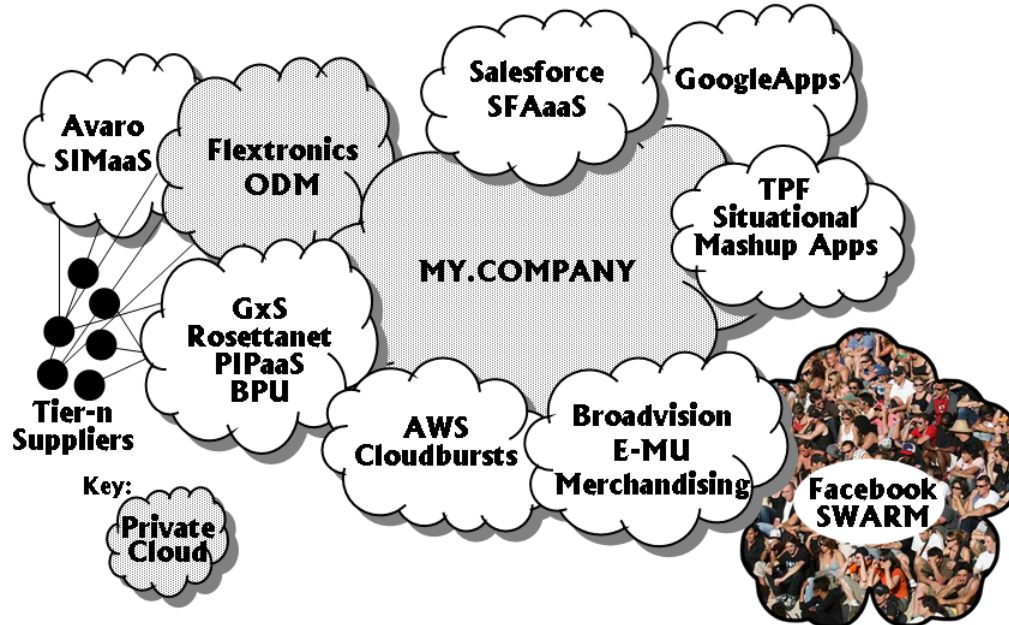


Figure 2. Situational Business Processes in the Intercloud

As business process fragments become disembodied as “services,” their many different uses won’t be known at the time the processes are developed. On-demand processes can be mashed up in new ways as participants in other processes, depending on the situation at hand. For example, an airline’s processes for flight planning, reservations, and ticketing could be mashed up with a conference organizer’s registration process. In each unique situation, the policies and business rules governing the processes will likely be slightly different. Situational business processes, whose unintended contexts may draw on a given company’s core processes, could become the norm; and they must be managed as diligently as all other mission-critical business processes.

Business units can go the way of consumer clouds and do stuff on their own to get their work done, outside the purview of central IT. On the other hand, IT departments can play a championing role, educating business users on how to take advantage of situational business process capabilities in the Cloud without bogging IT down in traditional applications development. And IT can provide the guidance business people need so they won’t create havoc, and help them stay out of compliance hot waters.

The message for IT is to lead, follow, or get out of the way, for COBA is here to stay as the world shifts from using information technology (IT) for transaction and information management to a far more organic business technology (BT) for innovation in the Cloud.

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ⁱ http://news.cnet.com/8301-1001_3-10059361-92.html