

The Cloud Enterprise

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Business Process Utility, the Virtual Enterprise, Cloud Computing, Enterprise Architecture, SOA, all these business and IT developments – how could they all be deployed and integrated in a company? How would the concepts fit together and what would the outcome look like? There is so much confusion, particularly with IT concepts and technologies coming faster than we can absorb them, it is difficult to understand their consequences and their positioning next to each other.

The suggestion here is that a company developed according to these concepts would look like a Cloud Enterprise, that is, a Virtual Enterprise with a SOA-like architecture, with its business functions, processes, and their IT resources supplied over the Web by a cloud of business and IT service providers. The cloud symbol, coming from the networking world and, recently, Cloud Computing, signifies the Internet like distribution.

The Virtual Enterprise, described by some in the business field as the networked Enterprise, consists of transparently distributed business functions outsourced to partners that work together to deliver the product to the end customers. The Web and B2B have an important role in enabling this networked Enterprise. While not going into details, the essential benefit will be business agility and proficiency of the best of breed services.

'Business Process Utilities - BPU - are an emerging form of business process outsourcing. ABPU is useful when a more standardized solution is sought that can be paid for on a transactional basis" (Gartner, <http://www.gartner.com/DisplayDocument?id=527120>).

A classic example would be the personal credit verification, outsourced to specialized companies. Insurance is another domain where BPU registered progress. BPU may well extend to an entire business function, not just a process, as is often the case for HR or payroll. The technology supporting the process or function is outsourced with the function. What is new to BPU, as opposed to the traditional Business Process Outsourcing (BPO), is the fact that the service is rather standard, delivered to more than one customer and easy to integrate. BPU, in effect, supplies a process with an on demand consumption and charging model.

A Virtual Enterprise may, consist of a number of Business Processes Utilities or Functions outsourced to various provider firms.

Cloud Computing (CC) is a new overloaded IT term, and vague at that. In short, I would define it as the outsourcing of the IT services - applications and technology - to partners over the Web. Remote access or managed services relay an incomplete description since they suggest mostly people access. The cloud means outsourced applications integration and on demand, utility-like, services consumption, the novel elements of the model.

Cloud Computing represents, in fact, a new Enterprise business model where the IT services supporting the business are provided, to various degrees, by partners, rather than in-house. It sprang from IT, but so did SOA and Enterprise Architecture. The Cloud only refers to the services cloud of a single Enterprise. Every firm may have its own cloud that may overlap at multi-tenant IT service providers.

CC consists of a few component service concepts (types of outsourced services): SaaS, PaaS (overall, I'll call them XaaS: Application, Platform, Infrastructure, Security... as a Service).

PaaS (Platform) and all its variants, as part of the Computing Cloud, offer the opportunity to outsource not only your data center but to act as platforms for your applications, Web presence, content management... IaaS (Integration as a Service) emerges to provide the orchestration and integration of the XaaS services.

Because of the potential cocktails of various XaaS services, a few business models are possible. At one end, your applications may be outsourced to different SaaS providers in the Cloud, each using their own technology infrastructure. At the other end, the applications are housed by an Infrastructure/Data Center provider, or more than one, managed by a 3rd party. The applications may be owned and managed by the core firm or the application provider.

The Business Process Utility (BPU) business concept aligns well with the SaaS IT application service outsourcing even though BPU, in general, may not rely on IT. But, in reality, SaaS becomes a part of BPU. The difference is that one is an IT term while the other is business. They both are consumed and paid for on an "on demand" model.

Is the Cloud Computing a technology? To start with, it is the business concept of outsourcing IT services, really. As with SOA, companies such as Amazon, Google, Salesforce.com, Microsoft, and many others provide various CC models. From a supplier's perspective, the technology offered is sometimes called "private clouds," even if they are not really that until they are included in an Enterprise cloud. A number of these private clouds may become part of an Enterprise cloud.

Among the benefits of the CC are instant provisioning of IT capabilities (servers, storage, network), utilization of the IT resources on demand (utility-like), service location independence (in the cloud, and technology transparency. The main advantage is that the service aims to be Off-the-Shelf, hiding the technology hurdles and fast and easy to adopt.

Among drawbacks are migration to the CC architecture, integration with other applications, and ownership of Enterprise data. Tools evolve to deploy/migrate applications transparently to different "private cloud" providers. Data security and legalities are key but not unsolvable. One has to separate data management from ownership. SOA, as a style, underlies the architecture of the services cloud.

A cloud computing paradigm, in actual fact, reduces an IT department in time to the IT architecture, strategy, and planning functions. The bitter relations of the past between IT and business could vanish, now replaced by contracts or real-time pre-pay for on demand services. Technology maintenance, upgrades, application management, and licenses are not your concern any longer.

The IT applications and technology become part of an Enterprise cloud. What does it mean? In truth, gradually (as you deploy to the cloud), the IT becomes a separate entity from your Enterprise. Your applications may run in another time zone, country, and company. Along with the supporting IT applications, Business Processes are outsourced to partner companies, all part of an Enterprise Cloud now. And that leads us to Business Process Utility, facilitated by Cloud Computing.

CC demands technology Virtualization, without which it would be impossible for a provider to manage effectively the infrastructure serving many customers. It also stimulates the blades technology because of its scalability and reduced power consumption, etc.

The Cloud Computing directly affects the Enterprise Architecture; SOA offers transparent distribution, loose coupling, technology transparency, and interfaces rendering the integration light, so you can easily take full advantage of what the cloud offers. SOA, is essential in enabling the Virtual Enterprise, Cloud Computing, and Business Process Utility.

The cloud covers both the IT applications and technology layers of an Enterprise Architecture. Imagine the EA Business Architecture layer resting on top of the IT Application and Technology layers, as in the text book, now looking like a fluffy cloud of distributed, outsourced IT services. The firm needs to draw the overall Enterprise Architecture, but not bother with the technological detail any longer. The Data Center and its Virtualization, Grid computing, and blades technologies become less a concern for the business at large but more for the private clouds providers.

There is synergy between the Cloud Computing IT view (based on SaaS, PaaS, IaaS) the Virtual Enterprise business view and outsourced Business Process Utilities. All outsource functionality, eventually over the Internet. All become part of the cloud. All are best served by SOA. Ultimately,

the Cloud Computing serves and becomes part of the Virtual Enterprise or, if in need of a common term, the Cloud Enterprise.

The problem appears to be that business has a different language and vocabulary from IT. There is a deep division between business and IT in terms of skills and goals. The news is that Cloud Computing, supported by SOA, may bridge the division by outsourcing IT services to various service provider firms under SLA contracts.

The Cloud Enterprise has the agility of SOA and the low cost, convenience, and proficiency of Cloud Computing and Business Process Utility outsourcing, while taking advantage of the current networking and Internet capabilities.

While the EAI integrated the IT applications of yesterday, and the ESB serves the today's paradigm, the Web will integrate the largely distributed Cloud Enterprises of tomorrow, structured on SOA.

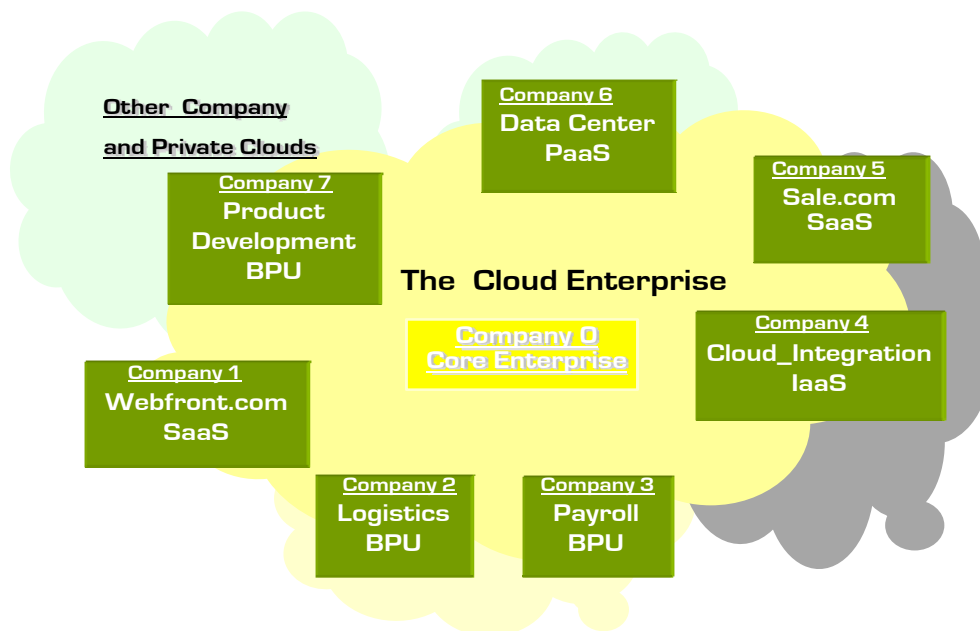


Figure 1

In a simple picture, the Cloud Enterprise looks like a cloud of business and IT service providers surrounding and serving a core firm. In a more complex view, Enterprises, consisting of core firms, collaborate with service provider firms, which, in turn, work with other service providers in their cloud to deliver the goods. It all comes down to Porter's Value systems – that is, a number of company Value Chains that are collaborating to deliver the end products.

Author

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