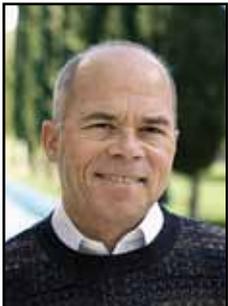


Enterprise adoption of Cloud computing: the next five years for IT

by Bernard Golden, CEO, HyperStratus

While IT departments hold back, many business units move to Cloud computing aggressively, drawn by low cost and capacity elasticity. Like PCs and web content, Cloud has to transition from business-led to central IT management. This requires fundamental changes, not just in the technology but also in re-skilling, resource planning and financing priorities. With Cloud, IT will finally get a place ‘at the table’, but only if it develops deep partnerships with the business units. The organisation must be prepared for variable demand patterns that often occur with innovation, and Cloud computing is both the answer and the catalyst for it. Cloud computing may be the beginning of the true growth phase for IT that transforms traditional, inefficient manual operation into a cost-effective information machine.

Bernard Golden has been called a ‘Cloud guru’ and a ‘Cloud computing rockstar’. He is the CEO of HyperStratus, a Silicon Valley Cloud computing consultancy which works with clients in the US and throughout the world. The firm’s clients include Korea Telecom, Chunghwa Telecom, Pepsi, and BMC Software. HyperStratus provides Cloud computing services in the areas of application security, system architecture and design, TCO analysis, and project implementation.



Mr Golden is the Cloud computing advisor for CIO Magazine. His blog has been called ‘brilliant and incisive’ and is read by tens of thousands of people each month. His blog was named ‘Top 50 Cloud Computing Blog’ by Sys-Con Media, a ‘20 Most Important Cloud Blog’ by AlwaysOn Media, and, in a recent poll by AppDynamics, it was cited as the third most influential Cloud computing blog. In a recent study, he was described as a Top 100 ‘Most Powerful Voice’ in security. His writings on Cloud computing have also been published by the New York Times and the Harvard Business Review.

Bernard Golden is the author or co-author of four books on virtualization and Cloud computing. He is a frequent speaker on Cloud computing. He regularly presents topics on the following Cloud computing topics: strategy; Cloud provider selection; application design; security; ROI and TCO economics; and workforce effects. He has keynoted Cloud computing conferences in the United States, Singapore, Seoul, Taipei, and Moscow.

By now it’s clear that Cloud computing is gaining enormous momentum. Every enterprise is developing a Cloud computing strategy, based on the clear expectation that Cloud computing represents the IT platform of the future. The pattern of adoption is different throughout the world, however. While the North American market is the best-established user base of Cloud computing, other global regions are emerging as rapid adopters. This is driven, in part, by the paradox that existing investments in traditional data centres hampers enterprises in the North American markets from aggressively embracing Cloud computing. In other regions, particularly in emerging economies within Asia, South America, and the Middle East, where there has been less IT investment in the past, enterprises are

adopting Cloud computing quite rapidly, unhindered by past decisions or investments.

The inconsistent adoption patterns is not confined to geographical regions, however, or even within specific industries. We often find that individual companies have different adoption across divisions or among different functional organisational units. In particular, it is often the case that individual business units have moved to Cloud computing enthusiastically, drawn by its low cost and easy availability, while central IT groups have hung back, preferring to concentrate on a viable long-term solution that aligns with existing products and processes.

There can be little doubt, however, that ultimately central IT will be the primary

decision-maker and adoption driver of Cloud computing. This makes sense. Other business-led initiatives, such as personal computers or the initial adoption of content delivery via the web, eventually transitioned from business units to central IT. This transition process is always driven by the desire to implement consistent processes, efficient management-based on standardization and specialisation by functional organisational unit. Business units recognise their desire to focus on germane business requirements and, at the same time, illuminate the need to provide technical expertise or support.

In short, while there can be no doubt that Cloud computing will, over the next five years, become the dominant mode of

providing enterprise data services, it will be central IT groups that eventually take on the responsibility of managing and operating those services. Given that, what are the things we should expect to see in IT organisations as they take on that responsibility? Here are five key action items that enterprise IT groups will need to address as they accept the charter of ‘making Cloud computing happen’:

1. Greenfield application architectures

Many IT organisations eagerly covet application characteristics like scalability and elasticity. The vision that applications can grow and shrink automatically in response to changing conditions like user numbers, traffic, or heavy batch processing is tantalizing, indeed. What these organisations inevitably confront is the recognition that achieving these application characteristics requires new application architectures. By contrast, established application architectures assume a static environment and require manual operations work to expand, shrink, or modify the application topology. Retrofitting Cloud computing characteristics into existing applications is neither easy nor cheap. Consequently, most IT organisations will focus on new applications when implementing Cloud application architectures. This is consistent with every IT innovation - the innovation is typically applied to new projects-based on the need to avoid disruption or incremental investment in existing applications.

2. Legacy decisions

This is not to say, however, that Cloud computing will not impact the legacy portions of an IT organisation. Another widely touted benefit of Cloud computing is its ability to reduce costs. Leaving legacy applications and infrastructure unchanged implies carrying forward a legacy cost structure as well. Longer-term, it’s unlikely that most IT organisations will be able to continue devoting 80 per cent of their yearly budget to operating high-cost legacy applications. There will be significant pressure to identify better solutions for existing applications. These may take the form of re-architecting them or migrating to SaaS alternatives. One can expect that the relationship of legacy applications and Cloud computing will become more important once most IT organisations have set their long-term direction regarding Cloud choice.

3. Skill building

Closely associated with the need to develop and implement new application architectures is the fact that IT personnel will need new skills to achieve their new objectives. It’s a mistake to think that the only employees who need skill development are software engineers. New skills will be required throughout the IT organisation. Other groups that will need skill development are:

- IT operations: Operating rapidly flexible application topologies in a shared resource pool is quite different than administering static application topologies on dedicated servers. Operations personnel will need significant skill development regarding automation, dynamic resource configuration, and capacity planning.
- Finance: Most IT finance groups follow processes appropriate to a static, dedicated resource infrastructure. Moving to a dynamic environment that charges according to fine-grained resource use (e.g. cents per server-hour) is a significant disruption to IT finance. Most finance groups will realise the need to upgrade their skills and become more like a commercial sales organisation, capable of providing immediate pricing, responding to changing market conditions, and delivering real-time analytics of use and cost patterns.
- Customer service personnel: Most IT interaction with user organisations within the company has been transactional and quota imposing - in other words, in a resource-constrained, quasi-monopoly environment IT tried to reduce demand and didn’t have to do much relationship management. In the new world, where external Cloud resources are easily available, IT will need to sharpen its relationship skills and implement what is in effect product management. Look for a whole new type of personnel to join IT to avoid ‘shadow IT’ efforts by external business units (see next item for further discussion).

4. IT gets a ‘seat at the table’

For years, IT groups have longed for a ‘seat at the table’, recognising that in an IT-as-cost-centre world they were always going to be excluded from important business decisions. Typical advice to CIOs ran along the lines of ‘learn to speak the language of business’. The good news is, with Cloud computing, IT is implementing customer-facing, revenue-generating applications. The bad news is that, in that position, it’s not nearly enough to use the right words at the ‘table’ - actions speak louder than words. IT is going to have to develop deep partnerships with business

units and mutually plan business offerings that offer customers rich data and desirable functionality as a complement to the base service or product that is purchased. In a world of commodity IT resource availability, what IT can bring to the table is deep contextual knowledge and intimate working relationships. Using those as the foundation for mutual initiatives will be a pre-requisite for the future role of IT.

5. Managing explosive growth

One thing humans are very bad at is foreseeing the implications of innovation. Many IT organisations assume that Cloud computing will just speed up resource availability at a lower cost, but will leave demand patterns unchanged. The history of innovation indicates otherwise. Every other innovation that made a product or service easier to access and cheaper to buy has resulted in explosive growth. Therefore, the biggest challenge of all that IT organisations will face regarding Cloud computing is how to respond to enormous success. All things considered, this is the right kind of problem to have, but one should not trivialise the fact that it is a problem nonetheless.

Managing exponential growth when assumptions and processes are scoped at linear rates along the lines of ten per cent per annum can be daunting, indeed. Unlike many in the industry, I predict overall IT employment will skyrocket as Cloud computing becomes more widely adopted. Far from Cloud computing representing the end of IT organisations, we will someday see Cloud computing as the beginning of the true growth phase for IT. I always encourage senior IT management that I interact with to evaluate what they would have to do if demand doubled year-over-year for five or ten years. What kinds of systems and personnel would need to be available? What kinds of vendor relationships and service partnerships could help in that environment?

Conclusion

Adopting Cloud computing represents, to my mind, the maturing of IT. IT is evolving from an inefficient, error-prone, manual operation to an automated, cost-effective information factory environment. Every transition is difficult - witness the travails of adolescents becoming adults - and Cloud computing will be no different. The long-term benefits of Cloud computing will be well worth the struggle, as IT finally fulfils its promise and companies finally find IT a sturdy partner rather than a burdensome fellow traveller. ●