Commentary: Adopting Emerging Technology

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Continued IT investment in an uncertain economy

Notwithstanding the uncertainties of the global economy, organisations are still keen to invest in technology. Besides the more conventional motivation to improve efficiency and productivity, organisations are also more willing to invest in new technology platform to support innovation and growth, help guide strategy with data and advanced analytics, and stay on top of possible new roles for mobile devices[1].

The McKinsey survey results were also collaborated by PwC Annual Global CEO Survey in 2011 and 2012. In the 2011 survey, 80 percent of CEOs believed innovation drives efficiencies which in turn lead to competitive advantages for their organisations. While nearly 70 percent of the CEOs were motivated by cost reduction through IT investment, 54 percent believed that investment should also be channelled towards growth initiatives that leverage on emerging technologies such as mobile devices and social media[2]. As most aspects of the organisation's functions rely on information technology and coupled with increased market competition, uncertain business environment that require rapid adaptation, companies are more willing to make investment in technology in the wake of the global financial crisis.

Banging on the "right" emerging technology

Last year, as part of their annual forecast many research firms, consulting companies and vendors including Fidelity[3] shared with its investors the three key themes to look out for when investing in the information technology sector: cloud computing, software as a service and Big Data. Others have added "social media" and "mobility". Many new start-ups and forward looking companies that take risks as early adopters of emerging technologies must understand that while new technology gives the organisations the image as trend setters; there are several pitfalls and those who have undergone any major IT transformation at their organisations would attest to. Secondly, these organisations must also evaluate and sieve out what are transient technology vis-à-vis emerging disruptive technologies that will displace existing technology.

While the word processor and digital camera have disrupted the faithful type writer and displaced conventional camera (and Kodak) respectively, other "innovative" solutions that were trendy in the past didn't make the mark. For instance, electronic bill presentment and payment (EBPP) and account aggregation (AA) were hot on the heels of many solution providers and financial institutions some 10 years ago but till date, there has been no large scale successful implementation.

Take Radio-Frequency Identification (RFID) as another example. Although a research report[4] projected that the global RFID market value could reach approximately US$20B by 2014, many industry players have argued that RFID cannot replace the conventional barcodes for various reasons. Firstly, cost of producing and distributing a barcode is much cheaper than the passive RFID tag. Given the low cost of printer and the proliferation of mobile phone: barcode can now be printed by the customers (airlines boarding passes), downloaded and displayed using the mobile phone (electronic cinema passes, discount coupons) compared to the need to manufacture and distribute these physical RFID devices. Moreover, the extended usage of RFID in credit cards, loyalty cards and other personal identification medium has led to various concerns about privacy violation. Compared to their US counter-parts, EU consumers are generally more vocal over privacy issues from the increased commercialisation of RFID in their daily lives[5] which may stifle RFID adoption in the EU consumer market.

Now back to the recent hype that Cloud Computing is the next disruptive technology or computing revolution since the invention of the personal computer.

Before we look at what is Cloud Computing, let's attempt to define what is Cloud Computing? According to CIO.com; there is no commonly agreed description of Cloud Computing. To add to the confusion, vendors, solution providers, researchers and practitioners are putting their own versions daily on the web. Even the 16th and final version released by US National Institute of Standards and Technology (NIST) [6] in late Oct 2011 has 820 words and include five characteristics, three service models and four deployment models.

While Cloud Computing as a whole exhibits several features of disruptive technology such as lower cost, simpler to use, portable (mobility) compared with existing dominant technologies; there are various concerns such as loss of control, information security, privacy issues, regulatory compliance and lack of common standards. Security is the most commonly cited consideration compared to other factors. Cloud security in a simplistic manner should be looked at from the solution provider's perspective and that of the end users. For the Cloud provider, one of the key challenges is how to ensure that its security infrastructure is not only able to meet its internal standards but the expectation of its clients. The other major inhibitor relate to regulatory compliance in multiple jurisdictions; especially surrounding privacy, data ownership and data location. These are major considerations for regional and international financial institutions that plan or are adopting Cloud Computing as part of their IT transformation strategies.

Two other well-hyped technologies involve the wide spread usage of social media and mobile devices (mobile applications). In the case of social media, it has become such an integrated part of our daily lives especially the Y generation that organisations cannot ignore this rapid adoption of social media despite the concern and lack of support typically from the Human Resources and IT departments. On the business front, consumers are generating online conversations on their likes and dislikes about the services of these organisations whether they have social media presence or not.

With the proliferation of smart phones and tablets; supported by cloud technology; thousands of mobile applications are available for free or at very affordable price. Although many of these mobile apps are largely catered for entertainment and digital lifestyle; an increased numbers are productivity tools to help the busy executives that appears to be always on-the-go. Organisations that have not started thinking about how to manage demand from their employees and customers on using their mobile apps on corporate networks or intranet may fear losing out to their competitors.

Avoiding the Pitfalls
According to Gartner's 2012 Hype Cycle Special Report[7], cloud computing and media tablets are some of the fastest moving technologies that have moved noticeably along the Hype Cycle since 2011 and consumerisation is now expected to reach the Plateau of Productivity in two to five years, down from five to ten years as observed in 2011. Bring your own device (BYOD) is identified at the Peak of Inflated Expectations in its 2012's Emerging Technologies Hype Cycle.

So do organisations jump onto the band wagon now to avoid being labelled as laggards?

According to author and researcher, Gerard J. Tellis[8]: "… technological change challenge do not evolve along the conventional S-curve of technological evolution, do not cross in performance only once, and do not always start below and end above the prior technology's level of performance. Rather, performance paths of rival technologies follow irregular step functions, may never intersect, or may intersect multiple times."

In the paper: Disruptive Technology or Visionary Leadership? [9], the author further posits that "…success and failure are unlikely to be deterministic outcomes of inanimate technologies, whether they are radical, revolutionary, or disruptive. Rather success and failure are probably the result of internal cultural aspects of the firm. Important among these is visionary leadership that embraces change and is willing to cannibalize existing assets to serve customers with new technologies."

So the answer to the question: why some incumbents thrive on technological change while other succumb to it lies in visionary leadership and the will of the leader to execute that vision.

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