TECH FOR YOU

Technology Trends for 2012 and How Chartered Accountants Could Successfully Surf This Technology Wave[1]

As 2012 has just arrived and plans are being made to engage with and encash the emerging opportunities, this article uses the prediction of global experts and research firms to remove the veil from the crystal ball and bring to you predictions of the emerging technologies and assess their impact on the role of accounting fraternity in 2012 and beyond. Hopefully you will gain insights on the challenges in the road ahead and prepare your plans to leverage the technology advances for the betterment of your professional career whether you are in practice or in employment.

The Evolving Role of IT

Information technology is all pervasive and the impact is extensive for enterprises, professionals and individuals. IT encompasses all aspects of functioning of enterprises from strategy to operations, conception to completion and from ideation to value creation. Business, regulatory and competitive requirements are demanding innovation in technology deployment resulting in changing business models of delivery of services using diverse digital media. Successful enterprises in the digital age are those which create positive customer experience and make this their business lifeline. IT is crucial for delivering a positive customer experience and this in turn drives revenue and growth. Enterprises, professionals as also individuals are becoming increasingly dependent on IT and need to knowingly or unknowingly embrace IT. IT is evolving at an accelerating pace and the role of IT is transforming business processes. It is expected that role of IT in enterprises will fundamentally change from being a service provider to IT becoming a Service Broker, aggregator of services and primarily responsible for building, maintaining and sustaining the business relationship by rendering core services to the customer.

Challenges of the Future for CAs

The core competencies of a CA are a unique combination of knowledge and skills in various aspects of accounting, assurance, information systems, governance, management, risk, controls, regulatory compliances, business processes, human relations, technology and related areas relevant for enterprises of all types and oriented towards the objective of providing value and deliverables as per requirement of clients/users. Studies by reputed accounting bodies across the world suggest that continuous enhancement, upgrading and updating of the core competencies is the key to sustaining a competitive and differential advantage in the marketplace. This leads to a continuing pressure on CAs to expand their skills and services beyond traditional roles to broader based and decision-making skills by harnessing the power of technology. The dynamic changes in IT create challenges not only for the CAs as professionals but also the economic and business world.

Reshaping Our Professional Future Using IT

Global studies have shown that the traditional core competencies of CAs needs to be enhanced with increased understanding of technology systems and there is urgent need to develop the ability to process and integrate information among various areas of business practice. CAs of the future will be called upon to provide solutions to complex issues by integrating specialised technology with their extensive experience to create new strategic business processes. CAs will have to provide assurance on the security, effectiveness, and reliability of information, applications, and new and effective business practices and processes. As IT increasingly becomes a key enabler in enterprises of all types and sizes and there is transformation from "Technology Oriented" to "Business and Technology Oriented, governance and risk management become value creators and right security is critical to strive and thrive in the highly intensive IT era. Experts predict that the most successful future for the accounting profession lies in transitioning from information-based services to higher economic value services to so as to remain relevant in the emerging knowledge age. Hence, it is important for us as accounting professionals to reorganise our IT toolbox, review our tool-kit of techniques, re-look at our processes, refine our approach, and update them by adding appropriate IT related competencies and skill-sets. The unwritten rule is we need

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to evolve using IT lest we become extinct in our relevance to the IT enabled enterprises. The success mantra is: "Find the right IT related tools to use and use them effectively and efficiently to create value addition for the stakeholders".

Industrial Revolution to the Knowledge Revolution – Pervasive IT

Evolution and revolution are part of history and keep on occurring at frequent intervals. A few decades ago, we were witness to the industrial revolution which brought in significant changes through:

1) The invention of machines to do the work of hand tools;
2) The use of steam, and later of other kinds of power, in place of the muscles of human beings and of animals; and
3) The adoption of the factory system.

It is said the role of information technology in the evolving knowledge society is comparable to that of the railroad during the Industrial Revolution. With the aid of IT "tracks" — high-speed computers and telecommunications systems — now inter-connecting most of the world, reaching all key enterprises, government, and our homes and lives, we have the opportunity to learn about events virtually as soon as they occur and we are able to process the information in a myriad of increasingly useful ways. The magnitude of the growth of IT can be exemplified by comparison with other sectors. For example: if the automobile and airplane business had kept pace with development in IT, then a Rolls Royce would cost $2.75 and would run for 3 million miles on one gallon of gas and a Boeing 767 would cost just $500 and would circle the globe in 20 minutes on five gallons of gas. In terms of power of computers, the speed of the latest personal computers is about 25,000 percent faster than it was in the mid-1980s, and the computers cost half as much.

A Gartner study says that the era when IT was the passive observer of the world are over and global politics and the global economy are being shaped by IT today and IT is becoming a primary driver of business growth and is expected to make a greater contribution to success of enterprises. Further, investment in IT is being made as it impacts business performance.

Next Wave of IT: Pervasive Connectivity and Speed

The future of IT deployment can be exemplified by this: a Dutch start up, Sparked is using wireless sensors on cattle so that when one is sick or pregnant, it sends a message to the farmer. Each cow transmits 200 MB of data per year. We can monitor ourselves this way too. Using a wireless cardiac monitor your physician can check for health risks. And this is just the beginning of embedded IT.

The CEO of Google Eric Schmidt says: "The next wave of technology-enabled business impact will come from the power of quickly connecting companies, processes, people, computers, and physical devices to collaborate in new ways. Just thinking about the impact of powerful personal devices, low-cost sensors, ubiquitous high capacity networks, vast quan-tities of data, and the broad array of interoperable technology services — all connected to the Internet — can make your head hurt. Everything will happen much faster . . . every product cycle, every information cycle, every bubble, will happen faster, because of network effects, where everybody is connected and talking to each other . . . The Internet levels playing fields in many ways — distribution, branding, money, and access . . . [and has] implications for the way corporations operate. They can't be as controlling. They have to let information out. They have to listen to their customers".

IT Investment and Connectivity Enabling Knowledge Revolution in India

It is said the green revolution helped increase the productivity of wheat and rice but the knowledge revolution is expected to increase productivity in all its dimensions. As of September, 2011, India has over 850 million mobile subscribers with over 90% of villages having mobile coverage. A growing number of private sector services are now being provided either online or via mobile phone. The National e-Governance Plan, is facilitating increasing number of government services to be provided online. An m-governance policy has also been drafted covering services provided via mobile phone. Core banking enables banking from anywhere and basic banking services can be accessed via the mobile phones. E-Services are becoming seamlessly linked through mobile, internet and other modes of delivery. A pan India Broadband Plan has been initiated with the objective of providing broadband connectivity across the country by 2014 which will propel the growth in a bigger way. These are pioneering efforts across India to connect as many of the country's population as possible to the internet so that they can be part of a new knowledge revolution.

A Gartner study reveals that despite global economic challenges, enterprises will continue to invest in IT with IT spending in India projected to grow 9.1% at $79.8 billion (₹4,154.79 billion) in 2012 against $71.1 billion in 2011. As per the study, India is the ninth-largest economy in the world, and the pace of economic growth in India – with a mild dip during the worldwide recession in late 2008 and 2009 – has brought the role of IT into sharp focus within many enterprises. India like other emerging markets continues exercising strong momentum despite inflationary pressures and appreciation of local currencies, which are expected in rising economies. The telecommunications market is the largest IT segment in India with IT spending forecast to reach $54.7 billion in 2012, followed by the IT services market with spending of $11.1 billion. The computing hardware market in India

is projected to reach $10.7 billion in 2012, and software spending will total $3.2 billion.

Growth of India-Centric IT Companies

By 2012, India-centric IT services companies will represent 20% of the leading cloud aggregators in the market (through cloud service offerings). Gartner is seeing India-centric IT services companies leveraging established market positions and levels of trust to explore nonlinear revenue growth models (which are not directly correlated to labor-based growth) and working on interesting research and development (R&D) efforts, especially in the area of cloud computing. The collective work from India-centric vendors represents an important segment of the market's cloud aggregators, which will offer cloud-enabled outsourcing options (also known as cloud services).

The 10 Rising Strategic Technology Trends of 2012

A report recently released at the Gartner symposium provides an excellent perspective of strategic technology trends of 2012. A strategic technology is defined as one with the potential for significant impact on the enterprise during the next three years. Factors that denote significant impact include a high potential for disruption to IT or the business, the need for a major investment or the risk of being late to adopt. This list could be used by enterprises and professionals as a starting point and it is to be adjusted as per specific requirements of industry, unique business needs, technology adoption model, and other factors.

As accounting professionals, we are impacted by IT in terms of assessing the IT deployment of our clients for providing assurance and consulting services and harnessing IT effectively to provide services. Hence, we could use the technology trends to be better prepared so as to re-define our role in emerging technology and shape our own future as thought leaders in the IT arena. The key technology predictions for 2012 by Gartner are:

1. **Media tablets and beyond:** Employees bringing their technology to work could become the norm, not the exception. This provides challenges of providing appropriate security and management of these devices which needs to be addressed. The era of PC dominance with Windows as the single platform is expected to be replaced with a post-PC era where Windows is one of a variety of environments IT will need to support.

2. **Mobile-centric applications and interfaces:** There will be increasing demand for building user interfaces for multiple screen sizes and operating systems. This requires new types of tools which can take the data feeds from applications and transform them so they are usable on the target device. This has to be done with the right engineering skills to design the right outputs as there is no automatic way of doing. Further, mobile applications will require input data input mechanisms which include not only keyboard but touch, gesture and voice.

3. **Contextual and social user experience:** Multiple devices such as GPS, NFC, bar code readers, image recognition, augmented reality, and various types of digital sensors will work together to make computing devices automatically adapt to the environment and streamline things for users. This is known as context-aware computing (CAC). It uses information about an end user or objects environment, activities connections and preferences to improve the quality of interaction with that end user or object. CAC system anticipates the user's needs and proactively serves up the most appropriate and customised content, product or service. More and more smart phone users will opt in to context service providers that track their activities on various devices and apps.

4. **Internet of Things:** We had the internet of information, audio and video. The next era will be of the Internet of things which will enable a wide range of new applications and services to be connected to each other. In 2008, the number of things connected to the internet exceeded the number of people on earth. By 2020 Internet of things will have 24 billion devices and by 2050 there will be 50 billion. These things are not just smart phones and tablets. They're every thing. This will present its own new challenges. This will result in pervasive computing where cameras, sensors, micro-phones, image recognition – everything – is now part of the environment. Remote sensing of everything from electricity to air conditioning use is now part of the network.

5. **App stores and marketplaces:** There will be increasing use of apps for performing various business processes. This will lead to enterprise app stores and the role of IT will change from that of a centralised IT department planning and maintaining IT deployment to a process manager providing governance and brokerage services to users and provider of support for these apps.

6. **Next-generation analytics:** Enterprises will focus on harnessing the power of information by using business intelligence and data analytics tools to monitor and improve performance and costs. Data analytics is possible not in high end data center systems but also using mobile devices. In future, IT may be required to focus on

developing analytics that enable and track collaborative decision making. Further, enterprises will use technologies for using big data for decisions, new analytic applications and pattern-based strategies.

7. **Big data:** Unstructured data is expected to grow by over 80% over the course of the next five years, creating a huge IT challenge. Big data has such a vast size that it exceeds the capacity of traditional data management technologies and requires the use of new or exotic technologies simply to manage the volume alone. Technologies such as in-line de-duplication, automated tiering of data to get the most efficient usage patterns per kilowatt, and flash or solid-state drives for higher-end performance optimisation are expected to increase in importance over the next few years

8. **In-memory computing:** In-memory applications refer to running existing applications in-memory or refactoring these applications to exploit in-memory approaches. This can result in improved transactional application performance and scalability, lower latency (less than one microsecond) application messaging, dramatically faster batch execution and faster response time in analytical applications. The relevant in-memory platforms include in-memory analytics, event processing platforms, and in-memory application servers.

9. **Extreme low-energy servers:** This refers to systems which will remove virtualisation and lessen the shared use of systems. These radical new systems being marketed by mostly new entrants to the server business are expected to take the buyer on a trip backward in time.

10. **Cloud computing:** The cloud wave is expected to change everything. By 2012, it is expected that 20% of businesses will not own IT assets but rent out IT service from the cloud as a service. Several interrelated trends such as: virtualisation, cloud-enabled services, and employees running personal desktops and notebook systems on corporate networks are driving the movement toward decreased IT hardware assets.

IT – Transition from Core Competency to Baseline Competency

The AICPA conducted research to update the CPA Vision Project to position the CPA profession for success through 2025. The findings state: "Technology is no longer a CPA Core Competency (a differentiator) for CPAs. Rather it is a part of our base — it is a tool that we must leverage as part of the way that we work on a day-to-day basis — and no longer something separate that was only the domain of a specialist. Technology competency is now a baseline skill that all CPAs need to have in order to be successful and meet the needs of our clients or coworkers". The report requires all CPAs to look at their practices or enterprises and determine whether as CPAs they have the baseline competence in utilising the technology tools available to them. Further, CPAs are required to go beyond the baseline to figure out how they can leverage technology to deliver "superior services" — a differentiator between a CPA and "just an accountant." This will empower CPAs to move up the Economic Value Chain. Some of technological expectations from CPAs are:

■ CPAs with solid IT skills will be required to design, integrate, and implement advanced software systems, as well as serve as consultants to link hardware/software solutions with sound business plans.

■ CPAs will awaken to the countless ways that technology is reshaping, refocusing, and redesigning our lifestyles, working methods and techniques, educational experiences, communication skills and applications, and the practices and processes of the finance, economic and business world.

■ CPAs will continue to cultivate a working and strategic knowledge of current and emerging technologies and appropriately utilise technology to efficiently enhance the interface between people, procedures, structures, and systems.

Need for Assurance over IT – Rediscovering our role

Enterprises in India are continuing to invest in IT in a big way to remain globally competitive as shown by the research and there is not much difference between the IT deployments in India when compared with other countries. Hence, the challenges faced by the accounting fraternity such as CPAs are equally applicable to Chartered Accountants based in India. We need to draw our own inference from the research and formulate our plans and strategies for developing IT expertise as required. A key requirement of enterprises in IT deployment is to ensure that business objectives are achieved and not mere implementation of latest technology. A key challenge in implementing IT is: higher the technology, greater is the need for controls. The scope and objective of assurance do not change with technology but the way controls are reviewed is drastically changed. Chartered accountants their in-depth knowledge and core competencies in business process and internal control are uniquely positioned to provide assurance and consulting services in IT area. We need to encash this challenge by updating our competencies and skill-sets to successfully surf the technology wave. Happy Surfing! ■