

Convergence in education: Fading campus boundaries through Technology

The irony is that it is always harder to tell what is imminent than to frame what is far-fetched. Internet technologies and online social activity have created as much curiosity in education as they have in business. How would these trends disrupt the education system is a story half told.

We find that these trends would not change the fundamentals of education and teaching. Rather, they would help revive what we have lost due to the increasing commoditization of Education. These trends will also help Institutions embrace the openness of Internet which is blurring campus boundaries today.

About the Author

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In his previous role, he was the Director of TCS' Global Consulting Practice (GCP) and was instrumental in the structural formation, development and positioning of TCS' consulting offerings. Consulting Magazine has named him amongst the top 25 consultants of the year 2007.

During his 16 year tenure at TCS, Swamy has held several strategic positions including managing key customer relationships, building and heading the Process Consulting group, managing the Corporate Resource Management function, leading numerous Centers of Excellence, as well as launching TCS' first steps in geographies such as Hungary and China.

Swamy is a firm believer in the power of IT to create business value and is known for his interest in Innovation & Quality and expertise in Six Sigma. He is also recognized as a champion of many digitization drives within TCS, including deploying digital platforms for Six Sigma, creativity and talent acquisition.

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The practitioner dare not become a teacher

The paradox of practitioner becoming a teacher has stayed for ages, drawing a fine line between academia and industry. Ironically, we spent significant time in looking at each other to connect theory with practice. This attempt would continue through civilizations. And, when an industry attempts to be more academic than it is mandated, it faces an identity crisis - the best example being the Palo Alto Research Center of Xerox, which has been the mother of many industrialized products today (GUI PCs, LCD, Optical Disks, LAN) but played little role when those got commoditized. Such examples of theoretical brilliance alongside industrial failure make many firms overly cautious when we delve into the specialized world of academia.

Given this, I still draw the courage to attempt and write about the future course of education, and let me be cautious that I would do so in the capacity of an industry practitioner and not transgress. I would draw this line by limiting myself to talking about the role of IT in framing new education models, which seems as much obvious as it is intriguing.

Technology is disruptive. The Facebooks, Wikipedia, iPhones, Kindle, all these have changed the way society has defined its boundaries. Would this also disrupt education where many of the principles have survived ages since Plato created the Academy? And when we are here to talk about a notion that computers would become intelligent and take over the role of the teachers, we fear that we may lose many of the cherished principles of traditional education that are still sacrosanct. Hence, the role of technology in education is more delicate than one would think. This is understood when we delve into the challenges in education – which suffers from the evil of knowledge commoditization in terms of curriculum and some IT geeks now expect computers to “industrialize” it. On the contrary, the role of technology would emerge to be very different.

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The death of impersonal teaching

One of the pitfalls in our pursuit of knowledge lies in the notion that there exists more information that could change the way we think. This is an endless mirage, and often detracts us from stopping to look back on how we can utilize the information already gathered. Students of today suffer from this (the scholars even more!) – overwhelmed by a fire hose of information, being consumers for a notional gratification but little to produce.

The purpose of education has changed from delivering knowledge to spurring the natural curiosity. This methodology had swept western education and we are glad to see institutions in this part of the world now embracing it. The role of the teacher is transformed to a facilitator, and this does not lessen the role in this

noble profession because being a facilitator is more intricate than being a teacher. The facilitator engages with the learner's mind, a function that is more personal. Teaching, on the contrary, has always been an impersonal skill.

Question remains, has technology a role to play in this? Let me draw an analogy from technology itself where it is changing a very different domain – that of entertainment.

Here the dilemma between being personal and impersonal is as much intriguing as it has been in education. Since 70's we saw the age of "broadcasting" where entertainment has been delivered by Televisions with a scheduled program reaching the choiceless masses. Today, with YouTube and concepts in IP TV, we are moving towards "unicast" where one finds and chooses what he or she would like to watch. The departure from being fed to being a seeker is as much applicable in education as it is in entertainment, with the role of technology being no less disruptive. Hence, in our age of "unicast" education, the role of the facilitator remains paramount. How does a teacher morph into a facilitator, and what technologies are incidental?

In this discussion, I would cover two aspects of education technology. One, how technology is set to increase the effectiveness of teaching. Two, how technology would improve efficiency in institutes. I claim that we would eventually discover that the two are related – an institute can teach well only if it is efficient.

The fading campus boundaries

In the institutions of tomorrow, neither the student nor the faculty would be captive to the campus. The line between the land and the virtual is becoming blurred. The teacher could be a member of an education department or an avatar on the internet. The student could be an active blogger – being source of knowledge himself. The transition here is that we would see the taught to be a teacher himself - the student creating content on internet by reproducing what he has learnt with his interpretations.

Isn't this cycle of enrichment fundamental to any learning? This existed since the prehistoric Academy was created – Plato wrote what Socrates had taught, but he used his version in doing so. One would never know how much of Plato is in the Socrates that we know.

These fundamentals don't change in education; what changes is the way we lose it and then try to bring it back. This time we are empowered by technology to revive the fundamentals of teaching. The emphasis of today's education shifts from being institutions of imparting knowledge to communities of enriching knowledge.

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Consider some statistics that reflects how knowledge sharing and development is picking up on the internet - a recent Forrester study shows that 61% on the online adults are internet “contributors”, who actively participate in creating internet content – this is either in way of blogs, critiques or even videos and music. More interestingly, number of people joining online communities has doubled in the last two years. The success of Wikipedia is a fine example of content being created by people across the globe. Initially there were questions raised whether such a model would swamp the system with information of doubtful validity. However the new model revolutionized content contribution and its usage. This reflects that creating content by sharing knowledge or skill is an instinctive societal behavior, which found internet as the natural platform of expression. “Natural” because it has no boundaries and no regiments. In the context of education, I see campus as the constraining boundary and curriculum as the imposing regiment. The internet is exactly the opposite.

Hence, we are to infer that institutions of tomorrow will have to embrace the looseness of the internet and revisit many of cherished practices in education, which would soon look antiquated to the newly empowered scholar – one who is here to exploit the online media. One good example in the IT world is the development program for one of the popular browsers, “Mozilla”. Mozilla foundation leveraged the internet to develop the browser with loosely held volunteer developers across the world. In a similar way, learning can be interactive and loosely coupled with required structures for mentoring, assessing skills and certification to establish reputation.

Re-industrializing the administration

I am inclined to infer that the purpose of curriculum has always been dominated by the economics of running the institute, often overriding the need of the students, or even the generation. Curriculums, and justifiably so, are tailored to the availability of faculty and the wherewithal of the institute. This model worked economically in past when students were reliant on the institution to impart knowledge, and they were mere recipients. It worked well also because the institutions could arrange for long term faculties in seemingly unchanging subjects. For instance, a management curriculum in a good institute could remain sacrosanct for a long time since many of the subjects in it, like organizational behavior, deals with relatively veteran disciplines like psychology. Hence, it would not seem very orthodox for institute to emphasize heavily on, for example, Freudian teachings in an MBA course. If at all this teaching is not absolute in the context of modern developments, it would have remained unquestioned since the campus had closed boundaries.

Today, however such shortcomings show up blatantly. A curious student may well stand up to question the applicability, if not ably refute it. The openness of content and debates on internet has brought us to this situation.

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This means that technology has equally disrupted the industrial model of education and the pedagogy. While this disruption causes many of the orthodox institutes to re-engineer their functioning, it also presents new opportunities for efficiency.

For an IT practitioner like me, I can relate the change with what we saw in banking. Traditional banking relied on the concept of branch, with each managing its finances and profitability. This got entirely changed with information technology bringing in the model of core banking. Here a branch is non-existent. Rather, ATMs and online media like internet banking enable the network and outreach. Today, even the ATMs are not captive to banks; the same ATM is shared by many banks.

The campus would see the same fate that branches and ATMs saw in banking. It would reach to learners, practitioners, mentors, and teachers through channels less physical and less captive. Interestingly, the lines between these roles would get blurred. This is social networking brought to education.

This efficiency model is unprecedented - no longer would you need a full time faculty, with a static curriculum to oblige it. No longer would you need your own captive laboratories, but you would use shared facilities nearest to the learner and faculty. Would this mean that there would be emergence of multiple players in the ecosystem, each confined to its niche competency? An industrial supplier thence would provide laboratory services; the institution would share faculty with each specializing on few; and the student would choose the best-of-breed learning package and precociously enrich it to present a thesis!

Convergence in media, not in disciplines

It is apparent now that efficiency and effectiveness of education are inter-related. An institute would consume less resource and include more knowledge with IT. One question is obvious to most institutes that have built significant reputation over the past – does the new paradigm threaten the identity of the institute, with one not differentiable from the other? I believe, like any community art form, each institute would preserve a genre and would efficiently manage it. It is like the Italian opera or the Paris painting school or the Broadway theatre, all would continue to differentiate no matter how globalized these art forms become. Education has to positively embrace this globalization and consciously choose its genre. I am provoked to think that in 10 years from now each IIM or IIT would pick very niche areas, just like how Princeton is known for theoretical physics and Carnegie Mellon for software engineering.

Hence, the convergence that I see is not in disciplines of teaching but in that of the campus. This is the future education in its true industrialized form. With this, the processes and software to run education need a roadmap that includes the fast changing pedagogy and economics of the sector.

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Role of IT sector – a line still finely drawn

I strongly believe that no software solution can provide a complete alternate to the education model that is in store. The purpose of any software in business model transformation lies in how the software adapts to unforeseen changes. Such software would help the business architect its model continually, in tandem setting a roadmap for itself. At TCS, our experience in helping transformation of business models has taught this firmly.

Power of information technology lies in setting the connects between resources and consumers. In the world of education, the faculty and students are resources and consumers themselves, making the system self-enriching. Hence, the purpose of the software is to enable this enrichment and support new forms to do it. Simply setting up a local networking site for enrichment and adopting a packaged ERP for process efficiency is not the panacea. We need to connect the two by raising questions like:

Can Wikipedia be the canvas where students reproduced their knowledge, leaving the sanity to be judged by the social mechanisms, and not buy a faculty – the model that has already given high credence to the information on Wikipedia?

Can the likes of Facebook or Linked-in be our campus, where faculty and expertise are validated by network mandate, not by institutional stamps?

Can administrative part of education, like enrollment, be managed by shared services specialized in dealing with the learning lifecycle? Can this service provider tell you which students are likely to drop out and what faculty would help retain them? In this age of management by analytics, why should the education sector be left out?

Today, I believe the education sector would seek this support from the IT industry, as much as IT looks back to the sector for talents. Our role in the emerging ecosystem is in being a provider of IT that supports changing education models. The synergy lies in the rule that the education sector cannot afford to be reduced to a manager for IT ecosystems, and conversely the IT industry cannot afford to be academic. The line is finely drawn.

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- Stringent security and data privacy ;
- Guaranteed availability (99 per cent uptime);
- Disaster recovery;
- Reduced need for IT staff.

iON, therefore, manages your processes while you use the software. You gain from:

Integrated solutions

We ensure that all your solutions are connected. For example, if you are using a CRM along with an ERP, and have a document management system to organise your files, we ensure that these solutions are connected and work as one. So for you, it is simply IT and not applications.

Increased agility

We bring in the agility to keep pace with changing processes or a new line of business. We help you configure the processes to work differently or simply choose new practices recommended by the software. Our activation system flags on best practices while the system is running. As you pick and choose, we give you more options to choose from.

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This model eliminates capital investment as we provide the IT infrastructure and software on rent. You pay as you use and only for the number of users who actually use the software. The rent is charged monthly. Typically, the cumulative rental for three years is equal to the capital cost of acquiring similar or lesser software with one-time payment. Usually, the ROI exceeds rental within three months, when best practices are well followed. The rental includes maintenance and training, with no hidden costs.

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iON is Tata Consultancy Services' strategic unit for Small and Medium Business. iON provides end - to - end business solutions to the SMB segment, the growth engine of the economy. iON caters to the needs of multiple industry segments with best practices gained through TCS' global experience, domestic market reach, skills, know-how and delivery capabilities.

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