

# Engines of the Mind

As we make the transition to the Knowledge Economy, the driver of development moves away from the earliest stages of large armies of manual laborers to the industrial times with physical power of steam, electricity and oil, and now to the engines of the mind in the form of computing power and connected computers, the optimum leveraging of information and allied technologies will provide the competitive advantage to individuals, corporations, nations and multi-national corporations.

Coercive collection of land revenue from farmers was an important activity for Governments a century ago. But in this century, Governments which will foster creativity, encourage innovation and enhance value are the ones that will prosper. In the recent past, we have had a glimpse in the emergence of Singapore from a struggling nascent state faced with numerous challenges and only a small chance of survival to a highly development economy by breaking away from its past and embracing a model of integration into the Global economy.

The emerging ICT technologies, open courseware availability and especially the set of tools being generally labeled as web 2.0 including wikis, podcasts and blogs are capable of giving a jumpstart to an accelerated development of the new economy skills to an ever large population. Thus we will be able to move away from a tribal model of intellectual capital, where we look for naturally occurring intellect following the Bell curve, to a model where extra-ordinary performance can be delivered by ordinary people, thus leading to a manifold jump in the productivity of each person, and with the billion odd people that we have, catapult us to the top of the league tables in GDP.

The core methodology to achieve this is a revamped education system driven by the above goals, and not to maintain the status quo of the past. An investment in ICT based education is therefore the best option, whether it is for self, the family, the community, the state or the country.

The starting point is of course the 'education for all' initiative, but the goals for the education should not be to complete the unfinished work of Lord McCauley or even the feelings of a newly independent country. We are now a mature country, and as said by our Prime Minister after winning the trust vote in Parliament

"...India's head and heart are sound and India is prepared to take its rightful place in the comity of Nations." While this was said in the context of the nuclear treaty, it applies as much to other emerging areas of space, biotechnology, nano-technology, grid computing and who knows a few decades from now in the field of quantum computing.

If we want to take along a large number of people along this path rather than a handful from the IIT's and a dozen or so prestigious academic Institutions, we need to have a completely new model. Any model of education that cannot respond to the learning needs of a heterogeneous learning population with a variation in the level of preparation and including SC/ST, OBC's, disabled in a common mode of education should actually be seen as violative of Article 14 of the Constitution of India, and any system that cannot address a cohort of at least 10,000 learners should be seen as against the right to life. Right to life in the Knowledge economy would encompass the alignment of the skill-competencies of all citizens to enable a gainful participation in the economy, without the need for crutches like reservations and other forms of insulting and disgraceful affirmative action.

Where will the new education model come from? Not from yet another 'Knowledge Commission' but from the way all improvements and progress happen. For example, the practice of medicine is not done the same way as it was done say 100 or even 50 or even 20 years ago. The outcomes of medical research are applied to create pharmaceutical products and the protocols of treatment are updated regularly. Our teaching method is still based on the 'sage on the stage' model of religious preachers, with further strangulating control by regulating agencies on what and how and by whom the preaching should take place.

The new 'learning products' i.e., books, CD's, podcasts, etc should reflect the progress being made in understanding of how we learn and teaching practices should also take account of differing learning styles, meta-cognition and learning rates. Only a modern comprehensive ICT enabled system is capable of delivering on this promise.

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