ICT ROADMAP IN THE PHILIPPINES: THE ACADEME

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A road map shows the links among various points in geographic space. ICT Road Map for Philippine technology schools would serve an analogous purpose.

Philippine technological schools continue to suffer from a severe paucity of resources. State schools pale in comparison with other schools in the region due to lack of government support or inability to raise tuition or other funds. So do private schools, which can provide quality education only up to the level that can be afforded or ill-afforded by its students. Just barely able to provide professional training to its students, Philippine technological schools cannot and have not made any significant dent in research, which by any measure, in the field of engineering, is an expensive undertaking. Thus in the landscape of local technological education there is yet no traveler labeled *"research school."* There are schools, however, that are good teaching schools - good enough to be the source of engineers to the world despite the great odds. The immediate challenge before ICT schools is to bring standards up to international levels – to have the graduates certificated to appropriate standards. Another challenge is to make the global connections with industry in order to produce the ICT professionals they need and demand.

Keywords: ICT roadmap, Philippine technological schools, ICT proffessionals

ENGINEERING SCIENCES AND TECHNOLOGY
(Videoconference)

CONFRONTING GLOBAL CHALLENGES IN ENGINEERING

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Within the Globe Telecom, Inc. and our industry, we have seen many challenges that have far reaching implications for our competitiveness. Global trends in science and engineering can be discussed at a very high level.

Four global trends that have already reached popular headlines will have direct influence on our country: (a) nano scale technologies, (b) the rise of IP or the Internet Protocol, (c) genetics, (d) environmental engineering. Work on these fields has the potential to radically transform electronics, communications, medicine and our environment.

In telecommunications, the collapse of the dot-com craze and the severe debt burdens on telecommunications companies worldwide have led to sharply lower purchases of equipment as well as a dramatic slowdown in research. In our country, we have been fortunate that telecommunications has continued to be a key driver of economic growth, especially with the intense competition for customers among the GSM operators. The resulting pressure to grow networks and cover as much of the Philippines as possible has led to requirements for engineering resources, at the very least in radio, transmission and switching, but as importantly, in IT and systems integration fields. Today, this pressure to get and keep the best talent in electronics, communications and software engineering fields remains.

Keywords: nano technology, internet, genetics, environmental engineering, IT, systems integration

CAPACITY BUILDING FOR ENGINEERS

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The professional life of an engineer should be one of continuous study, learning and honing.

Computers and networks have proven effective in the teaching and learning process. Simulation software and the Web have become tools for the efficient and quick interaction of teachers and students. The Web has also started to enable schools to share their libraries and other educational materials and even their faculty with other schools around the world. This has put in the hands of scholars an amazing wealth of knowledge and resources that enables them to become better students and teachers.

In an era of global outsourcing of engineering services it behooves all engineering schools to impart to its students the most advanced problem-solving methodologies and tools, including engineering software. After schooling, engineers depend, among others, on the colleagues in professional societies to keep up with developments in their fields. For capacity building our engineering societies must be thoroughly wired and able to help their members navigate electronically through the mass engineering data and information

available worldwide. This would ensure the use of the state-of-the-art in problem solving.

If heightening engineering R&D capability is among our objectives then ICT can play a natural role in capacity building. The internet has dramatically facilitated collaborative research work. Researchers can now share electronic fora that allow great number of enquiring minds to focus simultaneously on any given topic. Experiments could be set up, theories proposed and data reported very quickly. The lag time between conferences and publishing has simply evaporated.

ICT will be no panacea but it will be indispensable to engineering capacity building.

Keywords: ICT, capacity building, web

ENHANCING PHILIPPINE ENGINEERING THROUGH ICT

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Engineers have been using ICT mainly for communication, information processing and visualization. Their main tools are personal desktop and laptop computers and peripherals as well as application software that they themselves developed or they acquired from others. With the advent of computer networking, the Internet and the Word Wide Web, more sophisticated ICT tools have become available, including project management and decision support systems, knowledge integration and software that support complex engineering design processes. To be competitive in the market, Filipino engineers have to have access to these tools. But because they are quite expensive to acquire and to maintain, there is a need to create mechanism(s) to share them so that the costs can be distributed among many users.

This presentation will deal with how to enable the sharing of common ICT resources among Filipino engineers together with their suppliers, partners and clients over the Internet and the Word Wide Web.

Keywords: ICT, information processing, communication, visualization, internet, web