

*Speech by Mr M H Au, Director-General of Telecommunications  
at the Closing Ceremony of the International Project Management Forum 2006,  
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Ms Wong, Dr Chan, Honourable Guests, Ladies and Gentlemen,

It is my honour to speak to this assembly of senior executives, academics and professionals in the field of project management around the world. I note from the programme that over the past three days, distinguished speakers have already covered project management in a wide variety of sectors. In this closing ceremony, I would like to address a sector which I am more familiar with – telecommunications. I shall give my views on some features of the telecommunications infrastructure and their implications on project management.

I do not think that I need to justify the statement that the telecommunications infrastructure is as important to an economy as the other infrastructures. What distinguish the telecommunications infrastructure from the other more traditional infrastructures are perhaps three features - technological innovation, market competition and globalization.

First, technological innovation.

The public switched telephone network, as we all know it, has been in existence for over one hundred years. It is probably one of the most extensive infrastructures in the world. Thanks to the coordination by the International Telecommunication Union, and interconnection among operators, you can dial to any one of 1.2 billion fixed line telephones around the world.

From the 1980's, the public switched telephone networks based on fixed wirelines have been extended by mobile telephone networks based on wireless technology. There are now 2 billion mobile phones in the world. In fact, the number of mobile phones has exceeded the number of fixed line telephones three or four years ago. Many users are content with using their mobile phones alone. They do not need their fixed line telephones any more. This phenomenon is known as “mobile substitution”. As a result, the fixed telephone line penetration has either remained stagnant or has begun a slow decline while mobile penetration continues to grow beyond 100%. For example in Hong Kong, the fixed line penetration has remained at 54% for some years while the mobile penetration has reached 127%.

Now networks based on IP technologies are challenging the traditional networks based on circuit-switching. Within less than 20 years of its commercialization, the Internet is already connecting 1 billion users – quite a remarkable achievement when you consider that there are 1.2 billion fixed line telephones after a century of its invention. With improvement of capacity, the Internet is not just carrying e-mails or for web-browsing which are not very sensitive to time delays. Real-time voice and video are now routinely transmitted over the Internet. With a broadband connection, one can have “triple play” services – meaning telephone, Internet access and pay TV all from the same pipe. This phenomenon is called “Convergence” – convergence of telecommunications, broadcasting and information technology into the Information and Communications Technology (ICT) sector. “Convergence” is now the buzzword of the telecommunications industry. Operators around the world are now planning the phasing out of the conventional networks by their Next Generation Networks based on the IP technology which can carry voice, data, video and multimedia over the same network.

The mobile networks themselves are in a state of endless innovation. The first generation (1G) based on analogue technologies operated roughly for ten years. Then the second generation (2G) based on digital technologies came in the early nineties, bringing in more capacity to satisfy the ever-growing demand. Since then, there is progression to 2.5G and 2.75G to add the capability to carry data traffic in a more efficient manner. The third generation (3G) networks arrived at the turn of the century to provide broadband data capabilities. Now while the 3G operators are still trying to convert their 2G customers to 3G, operators are upgrading their networks to 3.5G to provide even higher speeds and capacity for data. In the meantime, many cities are rolling out their city-wide Wi-Fi networks for the so-called “nomadic” users. Now when operators and users are upgrading their 802.11b to 802.11g, newer technologies like WiMax with higher speeds and longer ranges are around the corner. 4G would probably be available shortly after 2010. Technology innovation in the telecommunications industry is a never-ending process.

The second feature of the telecommunications infrastructure is competition in the market.

With the proliferation of technologies, telecommunications networks can no longer be regarded as natural monopoly. Competition among different platforms is possible. ADSL-enabled copper local loops are competing with the cable modem platform on a

hybrid fibre coaxial cable television networks. These networks in turn find challenges from the networks based on fibres to the nodes, fibres to the building and fibres to the homes. These fibre networks are in turn challenged by new broadband wireless technologies. Governments around the world are opening up the telecommunications industry to competition. Competition is intense in the developed economies. In Hong Kong, over 90% of households have access to at least two networks, the ADSL-enabled copper local loop network and the cable modem service of the cable television network. More than 70% of households have a choice of at least three networks, i.e. the ADSL based network, the cable television network and the fibre-to-the-building networks built by the new operators.

The third feature is globalization.

Globalization brings even more competition. Operators seek to expand the networks globally, build point-of-presence in other countries or look for investment opportunities in overseas markets when their home market saturates. With the huge capacity available in optical fibres, the cost of transmission is now insignificant compared with other costs of setting up a communications infrastructure. When a multinational corporation considers setting up a regional communications hub, it can consider Hong Kong as well as Sydney, Singapore, Tokyo and so on. All cities have to compete with other cities around the world to be communications hubs. Trade in telecommunications services is now an important topic under the World Trade Organization's agenda. Trans-border supply of telecommunications services is feasible. For example, you can use a Voice over IP service set up anywhere in the world to call your home country and any other countries around the world.

What are the impacts of these features of the telecommunications industry on project management?

The special features of the telecommunications industry pose challenges to entrepreneurs and project managers, during the project definition, planning and implementation stages.

As a result of the pace of technology innovation, the project managers need to grapple with more options in the project planning stages. For example, they would need more knowledge about the market, the consumer needs and the trend of technological developments. There are more options to choose from - more technology options, more vendors. Should they build a 3G network or a WiMax network? If they

decide to build a 3G network, should they opt for W-CDMA, cdma2000 or TD-SCDMA?

With more variables, the project managers have to face more risks – risks of uncertainties of customer needs, risks of technology obsolescence. Do the products and services meet customer expectation? Would the chosen technologies be overtaken by newer technologies within the lifecycle?

In an environment of intense competition, budget and timing control would obviously be of utmost importance. The project managers are expected to complete the project within the budget and on time so as to meet the market demand and generate cash flow. In designing the project, the project manager has to pay attention to the efficiency of the future operation and maintenance. In an environment of competition, only the operators that are efficient are expected to survive. Project managers need to understand the regulatory environment, particularly if they have to implement their projects in different countries. What are the restrictions on road opening, on erecting radio towers? How do they tackle objections from landlords and residents? They may have to tackle regulatory problems that are unique in a particular territory.

With the risks come the opportunities. As the world progresses into the Information Society, the information infrastructure will play an increasingly important role in the social and economic development. Since the “dot.com” crash at the turn of the century, the ICT sector has recovered and started growing again since 2003/2004. ICT will transform many sectors with the launch of e-commerce, e-education, e-health, e-government, e-information, e-entertainment, etc. Numerous projects will have to be initiated to implement the infrastructures of the Information Society. The role of project managers will be indispensable. Plenty of opportunities lie ahead for the project management profession.

Thank you.