



The Selangor JPJ² study made use of data envelope analysis (DEA) to examine how efficiently different resources have been used to do its work by calculating efficiency scores based on the ratio of output to input. The department was broken down into 46 separate functional units such as conducting private driving tests, inspection of driving schools, transfers of car ownership, issuing international driving licenses, court prosecutions, etc. The DEA technique compares groupings of the different units so that the efficient units can be distinguished from the inefficient ones, and then identifies likely causes for the difference in efficiencies between these units. Results based on 1998 data showed for instance that conducting written tests scored 96, sale of preferred car registration numbers got 56, replacement copies of lost or damaged licenses, 42, practical tests for drivers, 10, pursuing court cases, 4, and undertaking investigations, only 0.4. The wide dispersion in scores showed that for certain types of functions more staff (a cost factor) is needed to bring in relatively little revenue, while for other functions relatively few staff need only be allocated that brings in revenue, thereby suggesting that labour might be more effectively reallocated to carry out the different functions at the Selangor JPJ so as to boost efficiency.

One might be convinced from this example that a management tool like the DEA was useful, because it has sensitized managers to where labour has been critical in carrying out various essential functions at the JPJ. However, given further thought one quickly realizes that this is exactly where public and private sectors have important distinctions. A private business that has many different functional units might elect to close down the low scoring ones using DEA but the same cannot be done by public sector departments like the JPJ. There are many things that a government agency has to perform, which might even need costly labour inputs even though these do not bring in money. In the JPJ study, investigations and court prosecutions for road transport offenses are necessary even though there is little money there, compared to conducting written tests. Still despite being wishful thinking that the JPJ might better focus on testing rather than prosecutions to improve on efficiency it remains an important social obligation that both functions are carried out despite the huge difference in cost to revenue ratios. Thus as members of the public, there is the concern that certain public sector managers might be so seduced by management theory that they are inclined to dispense with critical government functions just because they are not efficient in terms of cost-effectiveness.

The study that compared the *TQM* experience between Malaysian and U.S. higher educational institutions or HEIs, does not make use of DEA but uses a comprehensively developed set of questionnaires polled via a mail survey among 216 institutions in Malaysia and 294 in the U.S. between December 1997 and January 1998.³ Results showed that Malaysian and American HEIs went into *TQM* for different reasons. The Malaysian institutions wanted to develop their market potential partly through meeting the expectations of their foreign twinning partners, in other words, to address external factors. On the other hand, in America, the concerns were more internal such as student and staff performance, improved communication and decision-making and how these compare against benchmarked best practices. The study also showed that quality performance rated as excellent was found in 15% of *TQM* adopting HEIs in the U.S. as opposed to 12% of non-*TQM* institutions there. In Malaysia, on the other hand, similarly rated HEIs were found in 13% of *TQM* adopting institutions compared to only 9% of non-*TQM* institutions. These numbers show that *TQM* does make a difference in achieving an excellence rating in the two countries – to the extent that in terms of percentage, about the same proportion of *TQM* Malaysian HEIs can achieve an excellence rating as the proportion in U.S. HEIs that do not.

A study among economics departments at Australian universities is another example of the attempt to measure public sector efficiency.⁴ Like the Selangor JPJ study, the Australian study also made use of DEA. While the JPJ study compared efficiencies across units performing different functions, the Australian study compared the performances of economics departments from 24 universities over a four-year period between 1987 and 1991. The study found that over the period of comparison, the mean efficiency scores almost doubled from 0.37 to 0.72, which is evidence that Australian university economic departments have become nearly twice as efficient in a relatively short space of time. DEA was thus regarded as a useful tool for policy making and managing the universities by the Australian government.

Between the two studies, the DEA was more appropriately applied in Australia than in the Selangor JPJ study, because the different economics departments in Australia essentially perform the same tasks, in which case those that adopt best practices may be benchmarked against others that were unable to do so. In the JPJ study, however, how input resources are used say in conducting written driving tests and how the same resources are used in

say charging offenders in court can never be fairly compared vis-à-vis revenues earned from such tasks. This does not mean that the Australian study is not without problems. It would have been all right if DEA was used to compare the relative performances among post offices or garbage collection across the country. Offering an equitable level of such public services to the community would be ideal. It is not the same for university education. As the student community that the government strives to serve would comprise the very bright, average and the not so bright, so must a similar range of teaching institutions need to be made available in order to match the service with the client. Of course, even if this is true, one might argue that from the very best to the only average institutions, shouldn't they all be just as efficient? This is hard to say, because how teaching is best configured to meet the varying needs among different institutions, such as staff to student ratios, qualifications of the teaching staff or the types of laboratory equipment installed, will make evaluating these institutions using a common yardstick prone to error.

Not to put too fine a point on the subtle differences in the scope for which the management tools have been applied in the studies that were cited, there remains several distinctions that make private and public sectors incomparable. Many things are done in the public sector because public accountability so dictates. For instance, staff manning government agencies must be appropriately qualified according to the scheme for the civil service. In the private sector, qualification provides a useful guide but appointments to positions will more often depend on ability. Thus a modestly schooled businessman, with a record of success, would be readily hired by top-notch corporations ahead of the MBAs or even PhDs. Decisions in the public sector are mostly made through committees at many different levels. It is hard to pinpoint blame when the organization bungles. In the private sector the only place where similar collective decisions are made is in the boardroom, outside which corporate executives often have to make difficult calls fraught with risks that they will be made responsible for should things go wrong.

There is, therefore, a general inability to take calculated risks in the public sector, whereas risk-taking is very much the business of the private sector. To further avoid risks, the public sector sets up, often complex, administrative procedures that add to operating costs not for quality control of the output, as it is in private business, but to instill discipline among civil servants. We often call this government bureaucracy or red tape. Not only do cumbersome procedure slow down day-to-day tasks but just as serious, the inability to take investment risks in the public sector reduces long-run capacities and the level of efficiency possible in the future for the government.

Why then did public agencies not grind to a halt if they had failed to make the proper investments in the past as we have claimed? The answer is government does make investments but much of these originate as political visioning rather than from administrative expedience. Public investments arise as fiscal allocations where political masters rather than civil servants assert more influence. If visions are wise, good things appear in our midst that comes out from our tax money. Sometimes, somewhere government bungles and society ends up with the so-called white elephants of public projects.

So, are management tools, *TQMs* or *DEAs* that useful in the public sector? Yes, but their use have to be tampered by the hard social choices that we all face collectively as a nation. Social choices – this is what government and the public sector is all about - groups of people figuring out what might be best for society, not profits that guide decision making. Management theory is less familiar with them. ***§ Chan Huan Chiang***

Endnote

1. *The Economist*. October 19, 1996
2. Nooreha Hussain, Mokhtar Abdullah and Sureh Kuman, "Evaluating public sector efficiency with data envelopment analysis (DEA): a case study in Road Transport Department, Selangor, Malaysia." *Total Quality Management*. Vol.11:4-6, July 2000.
3. Gopal K Kanji, Abdul Malek, A. Tambi A and William Wallace, "A comparative study of quality practices in higher education institutions in the U.S. and Malaysia." *Total Quality Management*. Vol.10:3, May 1999.
4. Gary Madden and Scott Savage, "Measuring public sector efficiency: a study of economics department at Australian universities." *Education Economics*. Vol. 5:2, Aug. 1997.



PENANG AS A TESTBED FOR THE NATIONAL BROADBAND PLAN

Introduction

Recently, Penang had the privilege to be chosen as the first testbed for the national broadband rollout. The launching of this National Broadband Plan Testbed was held at Equatorial Hotel on July 7, officiated by the Chief Minister and attended by captains of industries and heads of government departments. Subsequent to the launching, a series of roadshows are being held at various locations and associations to introduce the National Broadband Plan and its objectives to the populace of Penang. In addition, the people of Penang were also encouraged to participate in the Broadband Penang Survey, indicating their interest to subscribe to broadband in the near future.

National Broadband Plan --- An Introduction

The Communications & Multimedia Act (CMA) 1998 has ten (10) National Policy Objectives and its most important is the aspiration to turn Malaysia into a Communications & Multimedia (C&M) Global Hub. One of the fundamentals to accomplish this objective is to put in place an efficient broadband network and ensure sufficient subscription to the services. As a result, the Malaysian Communication & Multimedia Commission (MCMC) has taken the initiative to introduce a comprehensive National Broadband Plan (NBP) which aims to achieve the following objectives:

- Generate supply in terms of broadband infrastructure via various available technologies deemed appropriate
- Stimulate demand to ensure efficient take-up of broadband services
- Explore various funding mechanisms to finance this project
- Identify gaps in existing regulations and where necessary, introduce new ones to facilitate broadband rollout.

The importance of broadband in today's economic and technological scene will greatly dictate how fast Malaysia could achieve its communication & multimedia objectives. The speed at which other competing countries adopt new technologies would further stimulate and expedite our adoption of technologies and adaptation process.

Why is Penang the First Testbed?

Penang has many plus points, which attracted and convinced the MCMC to choose the State to be the first testbed for the NBP. Penang has a concentrated urban population, which provides a cost effective solution for a state-wide national broadband rollout. In addition, the economic structure of Penang, which comprises mainly the multinational corporations (MNCs) and small-and medium enterprises (SMEs) manufacturing companies represent a substantial demand for broadband. The recent establishment of the Penang Broadband Stakeholders Group furthers complements this move.

The pro-active Government of Penang, which provides the relevant support such as statistics and data for the formulation of a demand-supply model, will enable a smooth rollout of broadband services. The far-reaching vision of the Penang State Government, as evidenced in the State's policies and development plan to establish Penang as a hub for ICT development is also a contributing factor.

The Penang Broadband Portal (www.northernhub.gov.my), designed to encourage the Penang community, companies and organizations to register their interest to subscribe to broadband services, was recently launched. This

portal is anticipated to help MCMC to gauge the demand for broadband, thus allowing MCMC to look into the supply situation. In addition, the findings for this survey will also assist the MCMC to formulate a demand-supply model as well as to estimate the funding required for broadband infrastructure and services in Penang.

Sound Quality	Telephone like	AM Radio	FM Radio	MP3
File size for 1 hour of audio	2 MB	3.7 MB	7.2 MB	14.4 MB
Download time per hour of audio on 56k modem	7 min.	12 min.	22 min.	44 min.
Download time per hour of audio on Broadband	1 min.	1 min.	2 min.	5 min.

Source: www.broadband4bures.org.uk/bti.htm

Benefits of Broadband

Broadband is used as a tool to improve the quality of life. Broadband is an enabler to assist people and organizations to work together more efficiently, and it has the potential to enrich almost every aspect of our daily activities. Broadband allows accessibility to telephone and Internet, and is probably most useful for home-workers, or for private leisure users who use emails and telephones at the same time. As such, Broadband eliminates the need for separate telephone and Internet lines.

Broadband offers users fast access to rich online information in the context of increasing convergence in content and technologies across broadcasting, publishing and the Internet. It offers, for the first time a technology that streams film, TV and radio over the web in a form that is relatively fast, thus satisfying the demands of users. As a result, broadband access can significantly increase the tendency of individuals and businesses to use and offer online services and processes. In short, Broadband enables new value-added services and it is also a pre-requisite for information-intensive knowledge economy businesses. With Broadband, there will be less *web-crawling*, which requires the user to wait for pages to open slowly.

Advantages of Broadband over dial-up Internet access include the following:

- Allows instantaneous Internet access due to the "always-on" nature of Broadband. Delays due to dialling up and logging in or redialling as a result of busy signals will be eliminated. 'Dropped' connection, which is a norm with dial-up access, will also be eliminated.
- Higher data transfer speed transform the experience of using the Internet from a frustrating one to an enjoyable one. In addition, loading of web pages and file transfers will be faster.
- Higher data transfer speed allows the delivery of high quality audio and video over the Internet in real time as compared to dial-up Internet access which is limited to conveying text, graphics and sub-standard audio and video.

The advantages of Broadband will be the driver for economic growth and social development in Penang. This will be further enhanced by the benefits of Broadband Internet access, which include the following:



- *Enhances business competitiveness* by increasing worker productivity in using the Internet for a wide variety of tasks such as conducting research and reading news online, providing online customer service and support, sending/receiving e-mail with large attachments, purchasing goods and services online, and distance learning.
- *Promotes the development of IT companies*, which are increasingly competing in a global market place. Lack of broadband access or expensive broadband access can force skilled IT companies and people to move to other countries with a more advanced telecommunications infrastructure.
- *Facilitates E-Government* by speeding up the provision of government services and information over the Internet, placing government procurement online and improving the overall speed and efficiency of the government.
- *Encourages teleworking*, thus allowing individuals to work from home yet remain connected to the office, saving commuting time and expense as well as reducing traffic congestion and air pollution.
- *Enriches teaching and learning* and supports the changes in educational practice towards a situation of 'student focussed' rather than 'teacher focussed'. Examples include easier and faster access to information, increased opportunities for communicating and sharing, supporting life long learning, allowing differentiation for specific individual needs, providing a platform to showcase creativity and problems solving capabilities. Access to media rich content can also provide additional motivation to learners of all ages.
- *Promotes tourism* to business and holiday visitors since broadband connectivity is increasingly a significant decision making factor for the selection of hotel and holiday location.
- *Allows teleconferencing* for holding business and personal meetings, inexpensively and safely over the Internet rather than travelling to a distant location.
- *Permits telemedicine* to extend the reach of vital medical services in diagnosing and treating ill and injured patients in rural areas with shortages of skilled medical personnel. It also allows doctors to quickly and inexpensively consult specialists in distant locations for their opinions on medical cases requiring outside expertise.
- *Stimulates E-Commerce* by allowing faster online shopping and purchasing and enhanced display of product and service information using rich media.
- *Allows entertainment and other creative content* including books, songs, music, plays, movies, videos, live performances to be delivered over the Internet to a global market.
- *Speeds up the dissemination and evolution* of human knowledge through Internet access. **§ Lim Peng Keong & Anna Ong**