

ICT – Can It Be An Enabler Of The Knowledge Economy?

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INTRODUCTION

The potential of Information Communication Technology (ICT) to make a difference in the lives of people globally is a fact that has come to be accepted by all. With development and innovation progressing simultaneously, knowledge is now becoming one of the most important factors in determining the global standard of living of people. Advanced economies and companies today are those that play the knowledge card as a tool to drive development and business.

It is an undisputable fact that the richest men in the world are all in businesses that influence choice and decisions aided by the deployment of knowledge like publishing, media and communications, among others, the media Moghuls like Rupert Murdoch and the IT superstars like Gates, Jerry Yang and others are among the visible personalities that have used ICT and found success.

With ICT increasingly becoming a key factor in driving production and development, a knowledge-based economy is a permanent feature and is one in which the generation, adoption and exploitation of knowledge play a key role in the creation of wealth especially in emerging economies. This is because ICT is a viable platform for generating wealth especially if it releases people's creative potential and knowledge.

In the developing and transition economies, where such supporting structures and policies cannot be taken for granted, evidence suggests that government-sponsored ICT strategies usually stand a greater chance of succeeding. For example, Estonia had a very low level of ICT technology and activity when independence was restored in 1991. Per capita income at the time was US\$600. Today the country has one of the highest degrees of connectivity in Europe and ranks among the top 20 nations worldwide. All schools have been connected to the Internet: 80% of bank transfers are made over the Internet; 28% of the population is connected to the Internet either at home or at work compared to just 7% in 1997; and annual per capita income is US\$5000. (Policy brief: Estonia, European TrendChart on innovation (2005))

K-ECONOMY : DOES IT REALLY EXIST?

For the last two hundred years, neo-classical economics has recognised only two factors of production: labour and capital. Knowledge, productivity, education, and intellectual capital were all regarded as exogenous factors that are, falling outside the system. New Growth Theory is based on work by Stanford economist Paul Romer and others who have attempted to deal with the causes of long-term growth, something that traditional economic models have had difficulty with.

Following from the work of economists such as Joseph Schumpeter, Robert Solow and others, Romer has proposed a change to the neo-classical model by seeing technology (and the knowledge on which it is based) as an intrinsic part of the economic system. Now, knowledge has become the third factor of production in leading economies. (Romer, 1995)

What Is Knowledge And Experience?

"He who receives an idea from me receives instruction himself without lessening mine; as he who lights his taper at mine receives light without darkening me."
(Thomas Jefferson).

Unlike capital and labour, knowledge strives to be a public good. Once knowledge is discovered and made public, there is zero marginal cost to sharing it with more users. The creator of knowledge finds it hard to prevent others from using it. Instruments such as trade secrets protection and patents, copyright, and trademarks provide the creator with some protection.

Knowledge gained by experience is as important as formal education and training. There are different kinds of knowledge. "Tacit knowledge" is knowledge gained from experience, rather than that instilled by formal education and training (Polanyi, 1997). In the knowledge economy tacit knowledge is as important as formal, codified, structured and explicit knowledge.

According to New Growth economics, a country's capacity to take advantage of the knowledge economy depends on how quickly it can become a "learning economy". Learning means not only using new technologies to access

global knowledge, it also means using them to communicate with other people about innovation. In the "learning economy" individuals, firms, and countries will be able to create wealth in proportion to their capacity to learn and share innovation. Formal education, too, needs to become less about passing on information and focus more on teaching people how to learn.

Hence, life long learning is now vital for organisations and individuals. At the level of the organisation learning must be continuous. Organisational learning is the process by which organisations acquire tacit knowledge and experience. Such knowledge is unlikely to be available in codified form, so it cannot be acquired by formal education and training. Instead it requires a continuous cycle of discovery, dissemination, and the emergence of shared understandings. Successful firms are known to giving priority to the need to build a "learning capacity" within the organisation. Thus, ICT can be a great enabler of accumulation of knowledge through life long learning.

What Is Knowledge Economy?

Since technology and knowledge are now the key factors of production, knowledge become the basic form of capital. The new economic growth is driven by the accumulation of knowledge. New technological developments, rather than having one-off impact, can create technical platforms for further innovations, and that this technical platform effect is a key driver of economic growth.

Technology can raise the return on investment, which explains why developed countries can sustain growth and why developing economies, even those with unlimited labour and ample capital, cannot attain growth. Enhancing human capital is critical for GDP growth. But sustained GDP growth doesn't just happen. In order to make investments in technology, a country must have sufficient human capital.

Knowledge Worker And Intellectual Capital

Knowledge workers are defined as "symbolic analysts", workers who manipulate symbols rather than machines. They include architects and bank workers, fashion designers and pharmaceutical researchers, teachers and policy analysts. In advanced economies such as the US, more than 60 per cent of workers are knowledge workers.

Intellectual capital is a firm's source of competitive advantage. A firm's intellectual capital - employees' knowledge, brainpower, know-how, and processes, as well as their ability to continuously improve those processes - is a source of competitive advantage. The physical assets of a firm such as Microsoft, for example, are a tiny proportion of its market capitalisation. The difference is its intellectual capital.

How do we measure a firm's intellectual capital? How can a firm tell whether its knowledge assets have increased or diminished over a certain period of time? According to Strassman (1999), intellectual capital is what is left over after suppliers, employees, creditors or shareholders and the government have been paid, and obsolete assets replaced.

ICT And Knowledge Generation

ICT releases people's creative potential and knowledge. ICT are the enablers of change. They do not by themselves create transformations in society. ICT are best regarded as the facilitators of knowledge creation in innovative societies (OECD, 2008).

Building on the foundations of a Knowledge Economy, ICT enhance efficiency gains and increase productivity. By enabling the creation and distribution of wealth, ICT affect economic growth in many ways:

First, having an ICT-producing sector, although not a prerequisite for growth can be important since the sector is characterised by rapid technological progress and strong demand. More importantly, firm-level investment in ICT, would increase their overall efficiency in combining labour and capital, or multi-factor productivity (MFP).

New challenges are emerging that have major impacts on how ICT enable economic growth. At firm level the challenges are shifting from improving access, to integrating ICT and electronic business processes into firm strategies and productive activities, both internally and in their sector value chains.

ICT are a major factor driving firm-level organisational change and transformation, and major new challenges are to develop policies that provide an appropriate environment conducive to continuing change and adaptation. Furthermore, there are continuing differences in access to new technologies across and within countries that are a major brake on global development. The importance of ICT network effects, for example via Internet connection, means that everyone benefits from increasing numbers of ICT-connected citizens and businesses.

Globalisation & ICT

ICT open up global markets and foster competition. Competition is fostered by the increasing size of the market opened up by these technologies. Products with a high knowledge component generate higher returns and a greater growth potential. Competition and innovation go hand in hand. Products and processes can be swiftly imitated and competitive advantage can be swiftly eroded. Knowledge spreads more quickly, but to compete a firm

must be able to innovate more quickly than its competitors.

Information technology has accelerated this process and made it more successful. It is no longer geography that determines the winners. Idea-driven innovation cycles in the knowledge economy determine an economy's position in the global hierarchy.

Human Capital The Source Of New Knowledge Economy

Our people are a source of competitive advantage. Malaysian companies need to better understand and use the concept of intellectual capital. They need to look at their products, processes and people, and assess and augment the amount of knowledge they possess. They must unlock the value of their hidden assets, such as the talents of their employees, the loyalty of their customers, and the collective knowledge embodied in their systems, processes, and culture. They must learn how to turn their unmapped, untapped knowledge into a source of competitive advantage.

The information age started the "death of distance". Distance no longer determines the cost of communications. This will be one of the most dynamic shaping forces for. Patterns of international trade, concepts of national borders, and the basis of decisions about where people live and work will be altered in ways that are only dimly imaginable.

Any country can be at the centre of the global economy. Our white-collar workers can compete on price and quality with those in London or California. Malaysia will be able to retain graduates who until now have emigrated in search of higher salaries. Work-related travel will decline. People will no longer have to live in cities to work; instead, they will be able to work from wherever they choose to live.

Can Our Economy Really Be Enabled With Ict?

The opportunity to build the foundation of the new knowledge based economy is right now with the decline of the manufacturing and other resource intensive industries. The wide ranging sub sectors in the knowledge industries includes anything from architecture to film making, would require deep creative thinking methodology with ICT driven innovation in processes, systems and tools.

Once the creative process is captured, systemize, package, value-added with the right marketing and branding strategies, it can be replicated many times over in different languages, regions and across industries. The whole process is based on creativity, innovation and most of the time ICT- assisted and driven.

Malaysia, is at the cross-road like the 70s moving up the value chain of agriculture to manufacturing and heavy

industries. This time around with ICT we can still go back to agriculture with enhanced bio-technology, high end manufacturing and virtual manufacturing and adding new creative industries as the next level knowledge based economic foundation.

ICT, Higher Education And Entrepreneurship

It is time that ICT is made relevant to all courses taught in the universities and colleges. Subject like arts, sociology, history creative studies is now becoming more important to unleash the minds to think beyond academic discipline. If ICT is taught as the enabler to make the subject interesting, we do have a chance of developing new breed of social thinkers.

Subjects like entrepreneurship can be taught beyond the normal academic lectures but through doing and we can still assess it by setting performance measures and KPI. The doing process accelerate thinking and action. That's what all entrepreneurs need

Some thoughts on the Way forward

In support of the objectives to build our capacity and advance the culture of ICT use through education, infrastructure, research and development, and ICT business, these are few thoughts on the way forward.

A. Invest, invest and invest in education, training and learning

1. Intensify awareness of ICT career options to develop a culture of knowledge-workers in Malaysia.
2. A re-look at our career guidance approach to consider the job opportunities in ICT.
3. Promote opportunities for retraining the current Malaysia workforce especially in creative industries.

B. Optimised and enhanced ICT infrastructure

Continued economic advantage will be sustained by a vigorous ICT infrastructure that provides access to information, supports electronic commerce, and provides access to services in lifelong learning, health, recreation, and business.

C. New enhanced facilitation modules on entrepreneurship, innovation and creativity at school, colleges and post-graduation

We need to facilitate all those in the more effective manners. The methodology must be hands-on, brains-on and risk-on. A lot of doings, a lot of expressing of ideas, encouraging trials and risk-taking. Teachers must turn to be facilitator, motivator and empowers learning among students.

D. Creative content focus

Focus on the content to fill-up the highways (broadband/infrastructure)

Content for high end engineering and architectural design, learning, training, entertainment and edutainment should be of a high priority to the country now. More funds, and opening up channels for higher utilization of digital content in broadcasting, educational institutions and engineering corporation will create new excitement in ICT and knowledge economy.

SUMMARY

ICT is a real enabler and facilitator of the new economic growth. It will be a great catalytic change agent to transform the existing economic based of agriculture, services, manufacturing into a high-end, efficient and value creation economic supply chain. Knowledge is the essence of the new economic based. ICT helps to translate good experiences, adding value to information, making content accessible and entertaining and allowing more transactions around the globe to facilitate trade, communication and interaction. We need new focus areas

using ICT to enable the knowledge economy as a new national transformational model for growth

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