Knowledge management: a key global economic resource

The term “global knowledge economy” is being increasingly used to describe the contemporary world economy. The term has emerged from the debates on the knowledge economy, which arise from the recognition that advanced economies derive a high proportion of their economic wealth from the creation, exploitation and distribution of knowledge and information.

The importance of knowledge in economic activity has received much attention over the past 20 years. The economic significance of knowledge related to production techniques, resource availability and market conditions is not new. However, today, "knowledge about knowledge” has become a central economic resource. Indeed, it has even been argued that knowledge has become the only resource that can create a continuous competitive advantage for a firm or a nation.

Characteristics of a knowledge economy

Eight core features that characterize the knowledge economy include:

1. the growing importance of knowledge as an input into the economy;
2. the increasing importance of information and communication technologies (ICTs);
3. the rising importance of knowledge as an economic output;
4. the growing commercialization of knowledge through, for instance, intellectual property rights (IPRs);
5. the growing proportion of knowledge workers;
6. the increasing impact of knowledge across all sectors of the economy;
7. the rise of knowledge management practices; and
8. globalization as a force driving the expansion of the knowledge economy.

Knowledge has always been of significance in economic activity, though in the past it was knowledge of production techniques, resource availability, market demand and supply conditions that were of central importance. Over the past three centuries there has been a transformation not only in the amount of technical knowledge but also in the accessibility of such knowledge through publishing, universities and professional networks. This improved access stimulated a continuous process of new knowledge production, and with this came sustained economic growth.

Association with ICT

During the past three decades there has been an improvement in access to knowledge through the widespread application of ICTs facilitating the acceleration of new knowledge production and the rate of technological change. Investments in the areas of research and development (R&D) and education are often presented as indicators of the growth of knowledge inputs into the economy.

A related feature of the knowledge economy is its association with the ICT revolution, so much so that they are often thought to be synonymous. Some argue that the information technology revolution is central to the rising emphasis being placed on knowledge in economic activity. Although the ICT revolution is not necessarily synonymous with the
advent of the knowledge economy, the availability of ICT systems “radically changes the conditions for the production and distribution of knowledge as well as its coupling to the production system”. Without a doubt, ICTs have significantly increased the capacity to rapidly codify knowledge, allowing the widespread diffusion of new production techniques and knowledge-based products.

The Internet

The Internet is at the forefront of the ICT revolution and as such it is a key facilitator of knowledge collaborations, flows and developments in the knowledge economy. The uneven distribution of Internet users and broadband subscribers across the key regions of the world brings into question the extent to which the knowledge economy is globally integrated. There is a significant difference in use of the Internet between the regions of Europe and the Americas, where more than 43 per cent of the population uses the internet, compared to Asia and Africa, where the figures are 14.43 per cent and 5.48 per cent, respectively. There is a similar marked difference when comparing broadband subscription in these regions, so, not only do they have lower levels of access to the internet, but the access that they do have is significantly slower and of poorer quality than that available in other regions.

Increasing commodification

As the importance of knowledge to the competitiveness of firms grows, so too does the incentive to protect commercially valuable knowledge. Ownership of knowledge may be secured in a number of ways, from secrecy to copyrights, trademarks and patents. The increasing number of US patents provides one illustration of the growing commodification of knowledge. Through the use of IPRs, knowledge is being increasingly privatized and monopolized, such that its benefits are restricted to those who can afford to participate in knowledge markets. Moreover, the appropriation of knowledge previously freely available is a global phenomenon with major socio-economic consequences. Well-known examples include the patenting of the components of traditional medicines from developing countries by the large pharmaceutical companies and the promotion of patented seed varieties by agri-business.

Knowledge workers

A further characteristic of the knowledge economy is the significance of knowledge workers as an essential resource necessary for nations and firms to secure global competitiveness. Such workers have been referred to as “symbolic analysts”, who include engineers, attorneys, scientists, professors, executives, journalists, consultants and other “mind workers” who engage in processing information and symbols for a living.

The rise of the knowledge economy consequently produces a growing demand for highly educated workers necessitating an increasing investment in education, and, in particular, higher education.

A review of the International Labour Organization’s data on employment by sector by region, suggests that knowledge work is unevenly distributed across the globe. Knowledge-intensive work is associated with high-tech manufacturing and the service sector. While 71.2 per cent of employment is in the services sector in developed economies and the European Union, the figure is as little as 29.6 per cent and 24.1 per cent in the regions of South Asia and Sub-Saharan Africa. In these latter regions agriculture dominates employment, accounting for 49.4 per cent and 65.7 per cent of the total employment respectively.

While workers located in the cities of some developing countries, like Bangalore, Hyderabad and Mumbai in India, are benefiting from the outsourcing and off-shoring of certain types of knowledge work, many workers across the globe continue to be occupied in the agricultural sector, often in the form of subsistence farming. Clearly, such groups are largely excluded from accounts of knowledge economy.
Developing knowledge

The emergence of new knowledge management techniques, developed to help private and public sector organizations maximize their return from knowledge assets and to develop their ability to produce new knowledge, is evident across the world. Initially focused on the management of codified knowledge through the application of ICTs to construct sophisticated information systems, knowledge management techniques have more recently turned to the management of tacit knowledge through practice based models of knowledge creation and distribution. In particular, the concept and reality of “communities of practice” has attracted a great deal of attention, and there is now widespread recognition of the role of communities of practice as facilitators of knowledge creation and transfer.

While ICT-based knowledge management systems may be confined to those regions of the world that have the required technological resources, communities of practice type knowledge management approaches, depending as they do on people and their interaction, offer universal opportunities to share and create knowledge. Indeed, knowledge management practices are being used to promote efficiency and progress in developing country enterprises as well as in aid and development agencies.

The process of globalization has undoubtedly contributed to the development of knowledge economies. For instance, the rise of cross-border trade and MNCs has facilitated the widespread distribution of knowledge. Globalization and the associated deregulation and privatization programmes of various nation states have resulted in an intensification of competition between firms, stimulating innovation, and technological change. The economic impetus to push forward the boundaries of knowledge and to use existing knowledge more effectively is certainly heightened because of the forces of globalization.

A key economic resource

Understandings of knowledge in a global context bring into question what is valued as knowledge and who determines the value of that knowledge. In the advanced economies, knowledge is valued more often than not merely as an economic resource. Even so, not all of the value of knowledge can be accounted for in economic terms. This is true in the advanced and the developing worlds. For instance, the knowledge of plant remedies held by the natives living in the Malaysian highlands is of little commercial value unless, and until, pharmaceutical companies can convert this knowledge into viable market products. Yet knowledge has value, whether it is commercialized or not. Importantly, knowledge, through its social, cultural and historical value, impacts on the economic context. For instance, social knowledge related to reputation and trust, while of no direct commercial value, is a vital component of the social capital that actually underpins economic relationships and reduces the transaction costs incurred in economic exchange.

The shift towards knowledge as a key economic resource, together with its public good nature, has great potential to alleviate poverty and to help to ensure that the benefits of economic and technological progress are widely distributed. Even so, there are some regions of the world that are so poor that their ability to participate in a global knowledge economy is very limited. In part this is what the World Bank’s 1998/9 World Development Report, with its theme of “Knowledge for Development” sought to address. The Report began:

By focusing on knowledge gaps and information problems the report sought to address the problem of development from a knowledge perspective. Moreover, the report marked a new strategy for the World Bank, with a shift from a bank focused on infrastructure finance to one focused on knowledge. The World Bank became a knowledge bank concerned with education, knowledge, institutions, and culture. However, ten years after this reorientation of the World Bank the potential of knowledge to overcome poverty has yet to be realized.
Although the idea of knowledge intensive activity dominating the global economy may be premature, there is much potential for the benefits of knowledge to be more widely distributed. With the provision of some basic information resources, those currently excluded from the knowledge economy can quickly develop the necessary skills to participate in the consumption and production of knowledge.

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