Knowledge Assets in the Global Economy: Assessment of National Intellectual Capital

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This article has the following objectives: developing the need for assessing knowledge capital at the national economic level; review of a national case study of how intellectual capital assessment was done in case of one nation state; suggesting implications of use of such assessment methods and needed areas of advancement; and highlighting caveats in existing assessment methods that underscore the directions for future research. With increasing emphasis on aligning national information resource planning, design and implementation with growth and performance needs of businesses or nations, better understanding of new valuation and assessment techniques are necessary for information resource management policymakers, practitioners and researchers.

“Our government is filled with knowledge... We have 316 years’ worth of documents and data and thousands of employees with long years of practical experience. If we can take that knowledge, and place it into the hands of any person who needs it, whenever they need it, I can deliver services more quickly, more accurately and more consistently.”

— From ‘Knowledge Management: New Wisdom or Passing Fad?’ in Government Technology, June 99

Emergence of the service society after the last world war brought increased realization of the role of employees’ knowledge and creativity in adding value to the company. Attempts to capitalize company investments in people on the balance sheet in the 1970s failed because of measurement problems. The subject gathered increased interest more recently in the 1990s, with the rapid emergence of information and communication technologies (ICT). As business processes became increasingly 'enabled' by large-scale information systems, information systems designers attempted to capture employees’ implicit and explicit knowledge in “corporate memory” by means of intranets and other similar applications (Malhotra, 2000a, 2000b).

In contrast to the knowledge of individual employees, such corporate knowledge does contribute to the company's value-creation capabilities as well as financial valuation by analysts. Hence, such organizational knowledge or intellectual capital must be accounted for in the company's balance sheet that has generally focused on the traditional factors of production such as land, labor and capital. The topic is not only pertinent to individual enterprises, but also to national economies that are making a rapid transition to a society based on knowledge work.

This article develops the case for assessment of national intellectual capital by drawing upon existing research, practice, and a recent study of an Asian nation representative of countries making a transition from ‘developing’ to ‘developed’ status. The issues discussed herein are important for information resource management policymakers, practitioners and researchers for assessing their contributions in terms of new measures of performance. More importantly, as...
the world economies transition from the world of “atoms” to world of “bits,” they would be expected to plan, devise and implement information and knowledge management systems that provide differential advantage in terms of ‘intellectual capital.’

Knowledge Assets and Intellectual Capital

Traditional assessment of national economic performance has relied upon understanding the GDP in terms of traditional factors of production – land, labor and capital. Knowledge assets may be distinguished from the traditional factors of production – in that they are governed by what has been described as the ‘law of increasing returns’. In contrast to the traditional factors of production that were governed by diminishing returns, every additional unit of knowledge used effectively results in a marginal increase in performance. Success of companies such as Microsoft is often attributed to the fact that every additional unit of information-based product or service would result in an increase in the marginal returns. Given the changing dynamics underlying national performance, it is not surprising that some less developed economies with significant assets in ICT knowledge and Internet-related expertise are hoping to leapfrog more developed economies (San Jose Mercury News, 2000).

Despite the increasingly important role of knowledge-based assets in national performance, most countries still assess their performance based on traditional factors of production. Today’s measurement systems are limited in their capability to account for tacit knowledge embedded in the human resources, although there is some agreement on measuring a few categories of knowledge-related assets, such as patents and trademarks. However, the emerging knowledge economy is characterized by industries that are more knowledge intensive and a service economy that is increasingly based on information-based intangible assets. Knowledge assets or intellectual capital may be described as the “hidden” assets of a country that underpin its growth, fuel its growth and drive stakeholder value. There is increasing realization about knowledge management as the key driver of national wealth, the driver of innovation and learning, as well as that of the country’s gross domestic product (GDP). Increasing importance of knowledge assets and intellectual capital have been drawing greater attention of not only company CEOs, but also national policymakers, to non-financial indicators of future growth and performance.

Knowledge asset measurement relates to the valuation, growth, monitoring and managing from a number of intangible but increasingly important factors of business success. In the context of knowledge assets, knowledge represents the collective body of intangible assets that can be identified and is measurable. This interpretation of knowledge differs from the notion of knowledge as knowing and learning, which concerns how organizations acquire, share and use knowledge – either helped or hindered by technology and organizational processes. In contrast, the notion of knowledge assets is about the identifiable aspects of the organization that although “intangible” can be considered as adding some kind of value to it. Knowledge capital is the term given to the combined intangible assets that enable the company to function. Examples of such knowledge assets could include shared knowledge patterns and service capability and customer capability.

Assessment of Knowledge Capital and Intellectual Assets

The worth of knowledge assets, taking the difference between market and book values as a proxy, is hidden by current accounting and reporting practices. However, as evident from current valuations of many Net-based enterprises, one observes a significant widening gap between the values of enterprises stated in corporate balance sheets and investors’ assessment of those values. The increasing proportion of intangible vis-à-vis tangible assets for most industrial sectors has been affirmed by various other observations (Edvinsson and Malone, 1997; Hope and Hope, 1997; Stewart, 1995). In the case of major corporations, often such high market valuations are attributed to brands. Recent business history has shown that huge investments in human capital and information technology are the key tools of value creation that often do not show up on company balance sheets as positive values themselves.

Measurement of institutional or organizational value in the current business environment using traditional accounting methods is increasingly inadequate and often irrelevant to real value in today’s economy. For instance, while traditional accounting practices often treat brand as depreciable entity over time, in today’s economy, intangible assets like brands and trademarks often increase in value over time, often longer than the time periods accounted for their depreciation. Even specific kinds of valuations of intellectual capital, such as patents, copyrights and trademarks are not valued according to their potential value in use, but recorded at registration cost. Similarly, the distinction between assets and expenses is made arbitrarily on many balance sheets: an advertising campaign could be recorded in either column as evident from a case such as that of AOL. The traditional balance sheet, a legacy of the last five centuries of accounting practices, provides a picture of historic costs, assuming that the cost of purchase reflects the actual value of the asset. However, it does not account for the hidden value inherent in people’s skill, expertise and learning capabilities; the value in the network of relationships among individuals and organizations; or the structural aspects relevant to servicing the customers. These hidden values or intangible assets assume an increasingly important role in an economy that is characterized by a transition from “programmed” best practices to “paradigm shifts” that characterize the new business world of “re-everything” (Malhotra, 2000c). Such factors are assuming...