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Knowledge Management: Where Do We Stand?

Md. Abdus Salam Khan*

Introduction

Knowledge governs economy and society. Creation and application of knowledge may contribute to improve the socio-economic condition of a country. Perhaps we believe that the key factors of socio-economic development are kn own to us. We need to use these factors for producing goods and services of improved quality.

Now the auestion is that are we aware of our knowledne base? Are we trying to improve it further in terms of acquisition and use of knowledge base? Are we trying to improve it further in terms of a acquisition and use of knowledge? If not where does the difficulty lie? It is to be found out and the barriers are to be removed.

Acquisition, creation, storage and diffusion of knowledge is important for its application as a factor of production. Without application of knowledge it will be very difficult to improve the quality of product, to go for new product, and to become competitive in the global market by reducing cost of production. It needs to be decided whether we should go for further enhancement of the knowledge-base so that it can become a driver for improvement of quality of life in the society. Of course before we go for enhancement of the knowledge base, we must be aware of our present position and should try to ascertain if there is any positive correlation between knowledge management and economic growth.

What is Knowledge?

Albert Einstein cautioned our world that "Information is not Knowledge". He asserted that "Knowledge is experience. Everything else is information."[1] Knowledge is the application of the information to decision to decision-making or action. It deals with the data - information - knowledge continuum. Data is

* Secretary to the Government of Bangladesh

[1] Governing and Managing Knowledge in Asia, p-23

processed into information which is applied in making informed decision in finality to get a good outcome. When the outcome is conducive to reach the goal of an organization or business, then it becomes an intellectual capital. It is very important that as knowledge is an intellectual capital so it should be managed in such a way that it is profitable for a business, an organization or any sort of institution even if it is the government.

Knowledge Management

Department of U.S. Navy thinks that knowledge management can be viewed as a process for optimizing the effective application of intellectual capital to achieve organisational objectives. Attaining the organisational objective is an important step to achieve good governance. From the perspective of sustainable development we need to look at the knowledge management as a critical issue of organisational adaptation, survival and competence against discontinuous environmental change. Uncertainty is there in the organisation. It needs to survive and better perform to produce quality goods in cheaper price in the midst of uncertainty.

In recent days government in treated as the supplier of goods and services and the citizenry as the customers. It is necessary that the service of the government needs to be demand driven but not supply driven. The goods and services are to be quick, cheap and responsive. Government in future, will be very much working like a business enterprise without profit. So it will need to do more with less. It means it needs to improve its efficiency.

From the point of view of the business enterprise the knowledge management is defined as a process that recognizes intellectual capital (knowledge) as a vital asset that can be leveraged to sustain business advantage. In the changing world of globalization, the role of intellectual capital is critical to bring a positive change in the quality of life of the people. When a nation lags behind in knowledge resources, it will lag behind in good governance, in foreign trade, in producing new products and services. So it needs to import not only goods and services, it will need to import even ideas and knowledge is a sellable commodity. Nobody will give it

free. The more the world goes towards privatization, the more the price of ltnowledge will go up.

As a result knowledge management includes the ability to make available the right information and knowledge to the right people at the right time, Where does the organization get the knowledge and information from? Knowledge and information need to be either created or captured. Knowledge may be created through research and development (R&D) and it may also be captured from the wed pages by using internet. It needs to be mentioned that tacit knowledge is not available in web page.

The created or captured ltnowledge may not be useful if other people don't have access to it and also are unable to tap the knowledge or information from the information superhighway by using the state-of-the-art technology. So the people of the organization should have access to information, ability to handle it and use the knowledge assets to improve the performance of the organization. So Knowledge Management :

a) centers around competencies, education, learning abilities of the organizational members;

b) is concerned about the creation, utilization and development of the collective intelligence;

c) implies the efficient organization of a suitable communication and information infrastructure.

Knowledge management involves the people, process and technology of an organization even if it is .the government. The ultimate goal is to get a good outcome for the benefit of the people.

Knowledge Economy

The creation of ltnowledge is not enough. It is to be transformed into action for increasing the income of the people to improve their standard of life. Knowledge management if contributes to economic growth, wealth creation and employment generation then it may be called knowledge economy. The world Bank defines a

knowledge-based economy (KBE) as one where "Knowledge is created, acquired, transmitted and used effectively by enterprises, organizations, individuals and communities."' The Organization for Economic Co-operation and Development (OECD) says in knowledge economies, "Knowledge is recognized as driver of productivity and economic' growth, leading to a new focus on the role of information, technology and learning in economic performance."[3] In knowledge-based industries knowledge is used as a factor of production. Hence in knowledge-based economy high-technology goods are more produced than any other economy. But it requires knowledge workers who are participating most effectively in the knowledge-based economy or performing knowledge-rich jods. Knowledge workers are engaged in generation and utilizaiton of knowledge. The Economic Planning Unit of Malaysia defines knowledge-based economy as one where "the generation and utilization of knowledge contribute significantly to economic growth and wealth creation."[4] While information technology is the fundamental enabling tool and human capital is the nucleus of KBE. The capacity of human capital to generate and exploit new ideas as well as apply technology and exercise superior entrepreneurial skills will take the economy forward for national development. .

Malaysia developed the Knowledge-based Economic Development Index (KDI) to measure its readiness to become a knowledge-based economy. It was first introduced in the Third Outline Perspective Plan 2001-2010. In calculating KDI they used 21 indicators to assess its position in 22 countries, In their assessment U.S.A secured the first position and India occupied 22nd position. Malaysia's position was 17th whereas China secured one position lower and than Malaysia and South Korea was 16th. The indicators used by Malaysia to assess its position in terms of KDI are as follows:[5]

1. Computer Infrastructure

Share of worldwide computers in use
Number of computers per capita

[3-4] Knowledge Content In Key Economic Sectors In Malaysia, 2004, p-9
[5] Ibid, p-6

Number of hosts per capita
Number of internet users per capita
International internet bandwidth.

2. Info structure
Investment in telecommunication
Number of main telephones in use per capita
Number of cellular mobile telephone subscribers per capita
Number of television sets per capita
Cost of international call.

3. Education and Training
Total public expenditure on education per capita
Literacy rate
Student-teacher ratio at secondary level
Secondary enrolment rate
Population with tertiary education.

R & D and Technology
Share of high-technology exports to manufactured export
Number of R & D personnel nationwide per capita
Total expenditure on R & D as a share to GDP
Average annual number of patents granted to residents
Business expenditure on R & D per capita.

All the indicators may not be very relevant to Bangladesh. Yet most of them are very relevant. Perhaps if Bangladesh's economy is assessed in terms of KDI it will secure a very low position as a knowledge-based economy.

For transforming into knowledge-based economy, Malaysia identified four knowledge enablers, and knowledge actions to bring about two knowledge driven outcomes.[6]

The Knowledge enablers are:

Human capabilities : Ability of the workers to participate actively in knowledge-intensive activities.

[6] Knowledge Content In Key Economic Sectors In Malaysia, 2004, pp 8-11

Knowledge leadership : Commitment of the management in championing knowledge-driven efforts.

Technology/Infostructure : Infostructure refers to computing and networking facilities to conduct knowledge-oriented word appropriate to the organization's mission and current capabilities. Whereas technology refers to advanced technology.

Knowledge environment : External aspects like policies, culture, organizational structure and knowledge workers which influence action in an organization.

- **Knowledge Actions are :**

Knowledge generation : Generation of new knowledge through R&D, process of learning or other mechanisms.

Knowledge acquisition : Compilation of information, particularly from external sources i.e. websites.

Knowledge sharing : Extent to which knowledge is shared (or transferred) via electronic information mechanism and team work.

Knowledge utilization : Ways and extent to which knowledge is utilized and capitalized on in a firm's practice and decision-making process.

- **Knowledge Outcomes are :**

Innovation : Any application of knowledge and creativity towards the development of new products, processes, services, and organization that influences outcome.

Economic performance : Knowledge-driven outcomes such as increased sales or profit, gains in market share, changes in wage level etc.

Malaysia is consciously trying to transform its economy to a knowledge economy. Because in the present day competitive world knowledge has became a factor of production. It is important to produce high-tech goods, to introduce new goods and services to

capture greater market share and to introduce new processes to reduce cost of production.

Milan Zeleny rightly mentioned "Knowledge is the primary form of capital. All other forms are dependent and derived, only secondary to knowledge. Without knowledge, money is just a pile of paper, machine of concoction of metals, building a heap of bricks and concrete and raw material remains just that : raw material. Knowledge gives life to it all.'"

It makes sense that knowledge is not just a primary capital. It enlivens economy. Malaysia could realize it. Hence its high tech export was 58.1% of the total manufactured export in 2001. Where as the high-tech export as a percentage of manufactured export of Bangladesh is only 0.2%. Bangladesh has to create and use knowledge to transform its economy to a knowledge economy.

Position of Bangladesh in Knowledge Management

In terms of some of the indicators, the position of Bangladesh in comparison to some developed Asian countries are shown below:'

Table-1 : Selected Benchmark Indicators

Benchmark Indicators	Knowledge Enablers				
	Malaysia	*Singapore*	*Japan*	*S.Korea*	*Bangladesh*
Tertiary-educated population as % aged 25-34, 2001	11.5	42.5	-	-	2.9
Computer per 1000 Population 2002	137	596	-	-	-
Internet Users per 1000 Population 2002	269	-	-	557	-
	Knowledge Actions				
R&D spending as % GDP, 2001	0.5	-	2.9	2.9	-
Patents in force per 100,000 population 2000	1.7	549	820	-	-
	Knowledge Outcome				
High-tech as % of all manufactured exports 2001	58.1	60.1	-	-	0.2
GDP per capita US$, 2002	3800	20900	-	-	456*

* It is the figure of 2005-2006

[7] Governing and Managing Knowledge in Asia, p-25

[8] Knowledge Content In Key Economic Sectors In Malaysia, 2004, p-20

Tertiary-education, computer per 1000 population, patents in force per 100,000 population and high-tech export of Singapore is higher than Malaysia. Higher per capita GDP of Singapore than Malaysia indicates that the above indicators have positive correlation with the per capita GDP. The per capita GDP of Bangladesh is very low in comparison to Malaysia and Singapore. It perhaps suggests to invest more in people. The role of human capital in the nations' quest for becoming a knowledge society is very crucial. Only production and acquisition of new knowledge can transform human persons into human capital. But production of knowledge also requires knowledge. It indicates that we need to invest more in education, research and training because knowledge may increase productivity and facilitate innovation. "Value is now created by productivity and innovation, both are applications of knowledge to work (Drucker 1994:4)." So Bangladesh has to invest more in people to develop it to a knowledge society.

Transforming Bangladesh into a Knowledge Society

We are currently witnessing a major transition from the old type of industrial society with its traditional dominance of manufacturing work and old industrial classes to an information and knowledge-based society (Drucker, 1994) which shows the following characteristics:[9]

- Its members have attained a highei- average standard of education in comparison to other societies and a growing proportion of its labour force is employed as knowledge workers.
- Its industry produces products with integrated artificial intelligence.
- Service-based industries, retailing etc are also under-going dramatic changes as indicated by increasing number of virtual stores such as CD World.
- Its organizations–private, government and civil society - are transformed into intelligent organizations.
- There are multiple centres of expertise and a polycentric production of knowledge.

[9] Governing and Managing Knowledge in Asia, p-143

We can judge our society in terms of the syndromes mentioned above. Perhaps we shall agree that we are lagging behind much in comparison to intelligent societies like Singapore, Japan, USA etc.

In Bangladesh 51.7% of the labour force works in the agriculture sector (BBS Labour Force Survey 2002-03). They are mostly unskilled and uneducated. It can be safely told that they are not engaged in knowledge generation through research. They are using the traditional knowledge and wisdom for producing the agricultural produce. So they are not knowledge workers as is seen in a knowledge society.

Let us look at another picture. In 2000, 2,22,686 people were sent abroad with employment, out of which only 10,669 (4.8%) were professionals, 99,606 (44.8%) skilled, 26,661 (12.0%) semi-skilled and 85,950 (38.6%) were unskilled workers. It means that out of exported manpower in 2000, 95.2% were not knowledge workers at all. So for transforming Bangladesh into a knowledge society according to Drucker our standard of education has to be enhanced. We should establish multiple centres for generation of knowledge. Private sector should be encouraged to invest more in research and development. Otherwise it will be impossible to transform Bangladesh from agrarian to knowledge society via industrial society.

Knowledge Centres

We know we have many cost-centres. But do we have any knowledge centres? I think we have some knowledge centres. These are the Universities, Research Institutions, R&D units of private and public sector enterprises etc. As knowledge centres, they are investing money in research activities for generation of new knowledge. They are using the same for better educational management, public sector management, and for reducing cost of production by introducing new processes and capturing market share by introducing new- products. Agriculture, fishery and livestock sectors, it seems, are using their research outcome to boost up production. Here we may compare the extent of

investment for generation of new knowledge by local knowledge centres with some of the Asian countries.

The research expenditure of different organizations of public and private sectors are mentioned below :

Table-2: Research expenditure of public sector organizations

(Tk. in million)

Name of Organization	Year	Total Budget	Research expenditure	As % of total budget
Dhaka University	2003-2004	936.5	3.7	0.39
	2004-2005	1085.9	4.4	0.40
	2005-2006	1127.8	3.81	0.34
Jahangirnagar University	2003-2004	279.8	1.5	0.6
	2004-2005	310.1	1.5	0.5
	2005-2006	**362.3**	1.8	*0.5*
	2006-2007	424.1	2.0	0.47
Bangladesh Public Administration Training Centre	2003-2004	87.35	0.073	0.08
	2004-2005	94.29	0.72	0.76
	2005-2006	114.00	0.72	0.63
Bangladesh Livestock Research Institute	2002-2003	113.50	7.70	6.78
	2003-2004	58.60	11.00	18.77
	2004-2005	76.51	12.84	16.78

In most of the knowledge centres, the research expenditure is less than 1% of their budget. Out of the figures we could collect from the public sector organizations BLRI spent on an average 12.69% of their budget for knowledge generation. It is expected that their outcome was better than other organizations.

In private sector, the figure of investment in R&D was collected from the following organization :

Table-3: Research expenditure of a private sector organization

Name of Organization	Year	Total Budget	Research expenditure	As % of total budget
Incepta Pharmaceuticals Ltd.	2003-2004	36.00		4.2
	2004-2005	43.20		4.3
	2005-2006	49.20		4.5

The investment of some of the private sector organizations in R&D is higher than that of public sector organizations. But it may be projected that overall research expenditure of Bangladesh as a percentage of GDP will be very low. The size of GDP of Bangladesh in 2005-2006 was 41,61,550 million taka at current price. In national budget of 2005-2006 the Government expenditure was estimated to be 15.47% of GDP. It seems that the research expenditure will be much lower than 1% of the GDP, whereas Japan and South Korea spent 2.9% of the GDP for research and development in 2001. Of course Malaysia's expenditure in 2001 was 0.5% of GDP. But it is to be kept in mind that their size of GDP is much bigger than the size of GDP of Bangladesh. There is no way other than spending more in research and development in Bangladesh if we want to generate knowledge and increase high-tech export. Because it may not be possible to secure much economic growth by working as an assembler of as a garments manufacturer. We should seriously think over it.

It is to be kept in mind that with the elapse of time knowledge increases and the ignorance also. When new solution to a problem is found out, new questions also knock at the door of mind as to the new problems as the knowledge world is advancing. Each time a research project is successfully concluded, a number of new questions arise. It is argued "Reflexive modernization (Beck, 1992) is stimulating the growth of ignorance, because new knowledge is put into question as soon as it appears". Thus the growth of ignorance is a reflection of the growth of knowledge.[10] So the knowledge journey is an endless journey.

[10] Governing and Managing Knowledge in Asia, p-145

Conclusion

The nation which is advancing speedily in tenns of knowledge management, their per capita income is also going up. It seems the economic growth has a positive correlation with it. Hence, Bangladesh needs to pay serious attention to this issue.

Bangladesh should strive to upgrade the standard of education, invest more in R&D both in public as well as private sectors to generate knowledge, and also use it for the economic development of the country. As fast expansion of information and communication technology improves the access to knowledge, so that may also be taken as a thrust sector. Malaysia could increase the number of internet users from 40 thousand to 3.7 million from the year 1995 to the year 2000. This may be followed as an example.

Today it is the division of knowledge, rather than the division of labour, that determines the limits and the potentials of competitiveness and productivity of an enterprise. We must adopt a comprehensive plan to close the knowledge gap in future days to ensure our economic survival in the highly competitive globalized world. Bangladesh should try for so much of brain-gain that brain-drain to some extent do not cause any threat to its development.

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