

# Knowledge Economy in Muslim countries

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# Introduction

- **A large number of studies and research papers were published in the last 20-25 years on the role and importance of knowledge, education and information technology in Economics or what is known as: “Knowledge economy”.**
- **This was as a result of the huge developments in the fields of information technology and communications by the end of the 20<sup>th</sup> and beginning of the 21<sup>st</sup> centuries.**

# New Economic Keywords

- **New economic keywords appeared such as:**
  - **Electronic Economy**
  - **Electronic trade or E-Trade**
  - **Electronic Government**
  - **Knowledge Value-Added**
  - **Information Society**
  - **Knowledge Economy**
- **These keywords emphasize the role and importance of information technology and human resource development**

# Importance of Knowledge

- **The Contemporary Economists consider knowledge as the most important factor of production.**
- **“Knowledge Economy” has become one of the branches of Economic Sciences, that is based on a deeper understanding of the role of knowledge and of human resources in the growth of the economy and in the advancement of the Society.**
- **Nowadays, the World Economy is heading more and more towards knowledge economy that relies basically on the use of Information Technology.**

# Important Questions on Knowledge Economy

- **What is knowledge economy?**
- **What are its main features and characteristics?**
- **How important it is?**
- **What are its limits and dangers (or side-effects)**
- **How to measure it?**
- **What is the position of the Muslim Countries facing it?**
- **What are the ways and means to move towards it?**
- **But before all this, what is the relationship between knowledge and Islam? what role did it play in the establishment of the Islamic Civilization and what are the reasons for the backwardness of the Muslims today.**

# Relationship between Knowledge and Islam

➤ 15 centuries ago, Islam came with the 1<sup>st</sup> order to man to read. This was repeated twice in the five revealed verses of the Holy Qur'an.

➤ This is to emphasize the importance and priority of learning before acting. Allah (ﷻ) says:

➤ "إقرأ باسم ربك الذي خلق، خلق الإنسان من علق، اقرأ وربك الأكرم، الذي علم بالقلم، علم الإنسان ما لم يعلم" (العلق:1-5)

➤ "Read in the Name of your Lord, Who created, created Man from a clot. Read and your Lord is Most Generous, Who taught by the pen, taught man what he did not know" (Q96:1-5)

➤ These are the first five revealed verses of the Holy Qur'an. It speaks twice about each of the Lord, the human being, the creation and the teaching. It also speaks about teaching and learning by the pen, as reading is the key to knowledge and knowledge is the key to civilization and development.

# Relationship between Knowledge and Islam

- Allah (🖐️) did not request man in these first few verses to pray to Him first, or to fast, or to do anything else before requesting him to read, which is the basis of efficient knowledge and actions.
- Thus, the high position that Islam confers to learning and teaching knowledge is incomparable.
- A number of other Qur'anic verses were revealed later, to emphasize the importance of knowledge and to strike a contrast between knowledge and ignorance and between those who know and those who do not know.

# Relationship between Knowledge and Islam

➤ Among these verses we mention the following:

(قل هل يستوي الذين يعلمون والذين لا يعلمون، إنما يتذكر أولو الألباب) (الزمر: 9).

“Say, are those who know equal to those who do not know? Only those endowed with understanding take heed” (Q39:9)

(يرفع الله الذين آمنوا منكم والذين أوتوا العلم درجات، والله بما تعملون خبير) (المجادلة: 11).

“Allah will raise those who believe and have knowledge to high rankings and Allah is well acquainted with what you do” (Q58:11)

# Relationship between Knowledge and Islam

➤ The Prophet (ﷺ) also emphasized the importance of knowledge and the virtue of seeking it in a number of ahadith of which is the following:

➤ "من سلك طريقا يطلب فيه علما، سلك الله تعالى له به طريقا إلى الجنة، وإن الملائكة لتضع أجنحتها رضا لطالب العلم، وإنه يستغفر للعالم من في السماوات والأرض، حتى الحيتان في الماء، وفضل العالم على العابد كفضل القمر على سائر الكواكب. وإن العلماء ورثة الأنبياء، وإن الأنبياء لم يورثوا ديناراً ولا درهماً، وإنما ورثوا العلم، فمن أخذ به أخذ بحظ وافر" (رواه البخاري).

➤ "Whosoever follows a path seeking knowledge, Allah will open for him a path to Paradise. The Angels will lower their wings to the knowledge seeker. Everything in the heavens and in the earth seek forgiveness for him, even the fish in the oceans. The difference between a scholar and a worshipper is like the difference between the moon and the stars. The scholars are the heirs of the Prophets. The Prophets did not leave behind dinars and dirhams but left knowledge. Whosoever acquire it benefits a great deal".

# Relationship between Knowledge and Islam

➤ Mu'adh bin Jabal (♦), one of the Companions of the Prophet (□) said:

➤ "تعلموا العلم، فإن تعلمه لله خشية، وطلبه عبادة، ومدارسته تسبيح، والبحث عنه جهاد، وتعليمه لمن لا يعلمه صدقة، وبذله لأهله قرية، وهو الأنيس في الوحدة، والصاحب في الخلوة".

➤ "Seek knowledge, for learning it leads to God-consciousness, seeking it is an act of worship, revising it is a glorification, searching for it is a jihad (struggle), teaching it to whom who does not know it is a charity, providing it for whom he deserves it is a sacrifice. It is the companion in solitude and the friend in seclusion".

## The Role of Science & Knowledge in the Development of the Islamic Civilization

- When the first Muslims applied the teachings of Islam, learnt and taught different sciences, spread and applied knowledge, they became the masters of the world at a time when the rest of the world was living in what was known as the “Dark-Ages”.
- In a very short period, they managed to achieve and reach high levels of growth, development, prosperity and civilization not reached before. This led some writers like Vintéjoux (1950) to write: “*Le miracle arabe*” (The Arab Miracle)
- This Civilization lasted for centuries until it reached its zenith in Al-Andalus around the 10<sup>th</sup> Century.

# Causes of Muslim Decline

- **The Arab and Muslim scientists participated in the dissemination of sciences during these era that lead Europe to subsequently enter the eras of “Enlightenment”, “Renaissance” and “Industrialization” and helped its scientists to further develop sciences and achieve greater developments.**
- **Unfortunately, the Muslims discarded sciences and relinquished knowledge due to internal and external causes.**
- **Internal causes such as rivalry between the rulers, corruption of the princes and governors, and fighting among themselves.**
- **External causes such as: the attacks of the Crusaders, the Tatars, the Mongols, and the Europeans on the Islamic world and subjecting it to ignorance, poverty and diseases.**
- **This lead on one hand to the decline of Muslims and the rise of the others (Arsalan, 1989) and on the other hand, the whole world lost a great deal because of the decline of the Muslims (Nadwi, 1978)**

## The use of Knowledge in the Development of the Rest of the World

- **As for the rest of the world, the scientists achieved extraordinary progress.**
- **They manufactured various machinery and electronic equipments that pushed the wheel of development to very high levels.**
- **This lead some writers to write about knowledge economy that is mainly based on the effective and efficient use of these useful means produced as a result of knowledge.**

## The use of Knowledge in the Development of the Rest of the World

- But this western progress is mainly based on these means that help achieve material maximization of utility and profits without reference or regards to spiritual, religious or social aspects.
- Except for a few who call for a break and a reconsideration in view of the adverse consequences caused by this trend that lead to poor distribution of income and wealth, a widening gap between rich and poor, imbalances in nature, pollution of the environment, and other adverse effects resulting from the misuse of knowledge without regard to religious or moral values.
- In other words, the World today has neglected the purpose and goal of life, and recruited scientific progress in the projects that maximize profits and increase stocks, to the point where it lead to corruption in the land and in sea, as God said (👉) in the Holy Quran.

## The First Western Writing about Knowledge Economy

- Perhaps Porat (1977) was the first westerner who wrote about knowledge economy, about three decades ago.
- He was followed by Romer (1986 and 1990) who discussed the Classical economic theories which consider land, capital, labour and entrepreneurship as the four main factors of production and argued that in the present time, there is another factor that has a greater impact on increasing the Gross Domestic Product (GDP) for many industrial countries.
- This factor is, according to him, represented by the spread of knowledge and the means of communication and information technology.
- He, thus suggested “Knowledge Economy” that is mainly based on knowledge as the main factor of production.

## The First Western Writing about Knowledge Economy

- What is noticeable from the review of literature about the subject, is that apart from the book written by Porat in 1977, all the writings that followed were written after 1985.
- They covered topics such as economies of knowledge, communication, information technology, teaching and training, human resource development, etc..
- Most of these writings appeared in the 1990s of the 20<sup>th</sup> Century and in beginning of the 21<sup>st</sup> Century, which makes the subject new and still in its infancy.

# The Concept of Knowledge Economy

- It is the economy where knowledge produces the greatest part of the value added.
- It is the economy where the establishment of knowledge and the investment in it play a great role in the creation and development of wealth.
- It is mainly based on the huge progress that occurred in the New Information & Communication Technologies, whose size and impact has surpassed all what has been achieved by humanity in its entire lifespan.

# The Concept of Knowledge

- **The concept of knowledge is not new of course.**
- **Knowledge accompanied Man since the time when Allah (👉) created Adam (◆), the father of mankind and taught him all the names (i.e. all sorts of knowledge he needed).**
- **However, when Adam and Eve forgot, ate from the forbidden tree and were sent down to earth, they forgot most of the things they learnt and had to try with their children and grandchildren to rediscover things as they go along and as the need requires.**

# The Concept of Knowledge

- **Since that time, Humanity has gone through various stages, and reached high degrees of knowledge and civilization, as was the case in the civilizations of Mesopotamia, the Ancient Egyptian, Indian, Chinese, Greek and Islamic Civilizations.**
- **Humanity has also gone through dark stages where severe ignorance and backwardness were widespread, as was the case in the Arabian Peninsula before the advent of Islam, and as was the case in Europe during the era known as the “Dark Ages”, or the case of some contemporary underdeveloped countries with high level of illiteracy and ignorance.**

# Position of Man vis-à-vis Knowledge

- **Man is responsible for his progress or backwardness.**
- **He is the main factor behind sustainable development.**
- **He is the goal and means at the same time.**
- **His development does not depend merely on technological development.**
- **But depend on human development in all aspects of life: political, economic, social, educational, cultural, ethical, etc..**
- **The wealth of the nations depends on the value-added to their human resources and their skills and ability to be creative, acquire knowledge and use technology.**

# What is new about knowledge

- **What is new, is the size of the impact of knowledge on political, economic, social, cultural and ethical human life and on its lifestyle as a result of advancement in information and communication technology.**
- **The last quarter of the 20<sup>th</sup> century has witnessed the greatest change in human life, or the third move after the emergence of agriculture and industry.**
- **This is represented by a revolution of science and technology in every area of electronics, nuclear physical, biological and space, where the nature of the economy has changed to become knowledge economy.**

## Limits of Knowledge Economy

- Knowledge economy does not lead necessarily or automatically to sustainable development just by acquiring latest information and communication technologies.
- This is because, unlike traditional technology, new information and communication technologies get abandoned as soon as new technologies are discovered.
- Not only that but it enters not only in the production of goods but in all fields of knowledge especially education.

## Limits of Knowledge Economy

- Thus, investing in information technology might help in the development of human resources and in integrating the economy in world's markets but only if it is seen as a complementary policy to other policies.
- This means that the economic policy which understands the role of knowledge should not restrict itself to transfer of latest information technology but depends before that on the change of basic structures especially in the investment in human resources and organized innovation.

# Dangers of Knowledge Economy

- This kind of economic activity may lead to undesirable results if not undertaken within a framework of religious or ethical values.
- For example Bahauddin (2003) points out to a new triangle of terror: genetic engineering, nanotechnology and robotics. He argued these are considerable means of progress and development, but at the same time, they may constitute tools and weapons of mass destruction.
- As pointed out by Abdul Aziz (2005), the explosion of knowledge and information technology, has affected some peoples and cultures differently. It cost some to loose their identity, and in some cases, moral decay, disintegration of family, rebellion, violence, crime, etc. emerged.
- Besides, the impact of globalization on people of least developed countries is very dangerous, as it add to the risks faced by the peoples of other advanced effects in all kinds of interference in their affairs and control over its decisions away from the truth and justice.

# Measuring Knowledge Economy

- By using the World Bank Knowledge Assessment Methodology known as KAM
- KAM is an interactive benchmarking tool created by the Knowledge for Development Program of the World Bank to help countries identify the challenges and opportunities they face in making the transition to the knowledge-based economy.
- KAM consists of 83 structural and qualitative variables for 140 countries to measure their performance on the 4 Knowledge Economy (KE) pillars: Economic Incentive and Institutional Regime, Education, Innovation, and Information and Communications Technologies.
- Variables are normalized on a scale of 0 to 10 relative to other in the comparison group.
- The KAM also derives a country's overall Knowledge Economy Index (KEI) and Knowledge Index (KI).

# Measuring Knowledge Economy

- **KAM** is available in six different display modes:
- **Basic Scorecard** uses 14 key variables as proxies to benchmark countries on the aforementioned four KE pillars and derive their overall KEI and KI indexes. The scorecard allows comparisons for up to three countries for 1995 and the most recent available year.
- **Custom Scorecards** allows any combination of the 83 variables and to compare up to three countries or regions for the most recent available year.
- **KEI and KI Indexes** presents performance scores of all countries on the KEI and KI indexes, as well as on the 4 KE pillars, in a sortable table format.
- **Over Time Comparison** demonstrates countries' progress on Knowledge Economy pillars and indexes from 1995 to the most recent year.
- **Cross-Country Comparison** allows bar-chart comparison of up to 20 countries on their KEI and KI indexes while demonstrating the relative contribution of different KE pillars to the countries' overall knowledge readiness.
- **World Map** provides a color-coded map for the global view of the world's KE readiness for 1995 and the most recent year.

# Position of the top 6 Countries of the World vis-à-vis Knowledge Economy

Economic Incentive and Institutional Regime	Innovation	Education	Information Technology & Communication	Knowledge Economy	Knowledge Economy Index KEI	Change in Ranking	Intern. Ranking 1995	Intern. Ranking 2007	Country
8.59	9.72	8.98	9.76	9.49	9.26	8	9	1	1-Sweden
8.97	9.43	9.22	9.25	9.30	9.22	-1	1	2	2-Denmark
9.45	8.86	9.20	9.17	9.08	9.17	1	4	3	3-Norway
8.95	9.60	9.20	8.52	9.10	9.07	-2	2	4	4-Finland
8.69	9.14	8.74	9.25	9.13	9.02	-2	3	5	5-Netherland
9.42	9.82	7.44	9.28	8.85	8.99	-1	5	6	6-Switzerland

# Position of the top 6 Muslim Countries vis-à-vis Knowledge Economy

Economic Incentive and Institutional Regime	Innovation	Education	Information Technology & Communication	Knowledge Economy	Knowledge Economy Index KEI	Change in Ranking	Intern. Ranking 1995	Intern. Ranking 2007	Country
6.5	6.74	4.45	7.23	6.14	6.23	13	53	40	1-Malaysia
6.57	5.63	5.53	6.96	6.04	6.17	8	50	42	2- Qatar
6.55	4.83	5.44	7.24	5.84	6.01	5	51	46	3-Kuwait
6.25	6.56	3.33	6.97	5.62	5.78	-9	40	49	4-UAE
6.59	2.84	5.77	7.10	5.24	5.58	-18	60	52	5-Bahrain
6.37	5.71	4.40	5.77	5.29	5.56	7	49	56	6-Turkey

# Position of the top second 6 Muslim Countries vis-à-vis Knowledge Economy

Economic Incentive and Institutional Regime	Innovation	Education	Information Technology & Communication	Knowledge Economy	Knowledge Economy Index KEI	Change in Ranking	Intern. Ranking 1995	Intern. Ranking 2007	Country
5.31	5.67	5.31	4.47	5.15	5.19	5	67	62	7- Jordan
6.94	4.91	3.84	4.79	4.52	5.12	9	72	63	8- Oman
4.36	4.40	5.74	5.64	5.26	5.03	-12	44	66	9- Lebanon
5.07	3.75	4.43	5.79	4.66	4.76	-1	68	69	10- Saudia
4.73	4.58	3.94	4.82	4.45	4.52	5	76	71	11- Tunisia
3.02	4.12	7.77	3.11	5.00	4.50	3	75	72	12- Kazakhstan

# Position of the Bottom 6 Muslim Countries vis-à-vis Knowledge Economy

Economic Incentive and Institutional Regime	Innovation	Education	Information Technology & Communication	Knowledge Economy	Knowledge Economy Index KEI	Change in Ranking	Intern. Ranking 1995	Intern. Ranking 2007	Country
3.38	0.41	0.42	0.67	0.50	1.22	-9	118	127	35-Mali
2.48	1.09	0.27	0.87	0.74	1.18	3	131	128	36-Mozambique
0.79	1.27	1.48	1.01	1.25	1.14	3	133	130	37-Bangladesh
2.93	0.62	0.27	0.48	0.46	1.08	0	132	132	38-Burkina Faso
0.98	0.00	0.52	1.65	0.72	0.79	-22	113	135	39-Djibouti
0.84	0.87	0.56	0.21	0.55	0.62	-9	128	137	40-Sierra Leone

## Position of the top 6 Muslim Countries vis-à-vis Knowledge Economy

- Malaysia ranks 1<sup>st</sup> among Muslim Countries and ranks 40<sup>th</sup> in the world. Its KEI is just 6.23 out of 10 (just above the average).
- It managed to raise its ranking by 13 positions from 53<sup>rd</sup> in 1995 to 40<sup>th</sup> in 2007.
- This means that Malaysia must have exerted a lot of efforts to improve its position, despite the fact that the level it reached is still very low.
- After Malaysia come Qatar and Kuwait which rank 2<sup>nd</sup> and 3<sup>rd</sup> among Muslim Countries but which rank 42<sup>nd</sup> and 46<sup>th</sup> among the world countries, advancing 8 and 5 positions respectively.
- Then comes UAE in the 4<sup>th</sup> rank among Muslim countries and in the rank 49 among world countries, with a KEI of 5.79 out of 10, loosing 9 positions.
- This does not necessarily means that the UAE did not do anything to improve its position. But it means that other countries like Malaysia may have done more.

## Position of the top 6 Muslim Countries vis-à-vis Knowledge Economy

- Bahrain ranks 5<sup>th</sup> among Muslim Countries and 52<sup>nd</sup> among world countries with a KEI of 5.58 out of 10.
- What is striking to not here is that Bahrain lost 18 positions from its 1995 ranking when it ranked 34.
- The part explanation of this observation lies in the fact that the number of countries ranked in 1995 was less than the number of countries ranked in 2007. So, perhaps countries with higher levels of knowledge not ranked in the list of 1995, were added to the list in 2007.
- Turkey ranks 6<sup>th</sup> among Muslim Countries and 53<sup>rd</sup> among world countries, with a KEI of 5.56 out of 10, raising its position from 60 in 1995 to 53 in 2007.
- As for Saudi Arabia, it ranks 10<sup>th</sup> among MCs and 69<sup>th</sup> among World countries, with a KEI of only 4.76 out of 10 (i.e. less than the average).

## Overall Position of the Muslim Countries vis-à-vis Knowledge Economy

- Only 9 Muslim Countries have a KEI equal or just above the average 5 out of 10.
- All other Muslim countries have lower KEI.
- In fact, the majority of MCs are in the bottom of the list of countries that have data concerning their knowledge Economy Index, with a KEI less than 3 out of 10.
- This confirms our hypothesis that there is a huge knowledge gap between Muslim countries and industrial countries.
- This calls for co-operation and co-ordination among MCs in order to help each other move towards higher levels of knowledge and knowledge economy and reduce the gap. Otherwise, things will only go from bad to worse.

## Overall Position of the Arab Countries vis-à-vis Knowledge Economy

- If we look to the situation of the Arab Countries, we find only 7 countries of the 17 that have data on knowledge economy have a KEI equal or slightly higher than the average (5 out 10).
- All the rest (10 countries) have KEIs less than 5 out 10.
- 5 out of first 7 countries that have  $KEI > 5$  are rich oil producing countries from the Gulf and yet their indices do not exceed 6.2 out of 10.
- This leaves us with the impression that the indicators of the knowledge economy in the of Arab Countries are very low.
- This confirms to us also that the Arab countries, including the rich exporting oil countries are still far away from achieving advanced levels of knowledge economy.
- This requires from them to make more efforts and to pay more attention to achieve higher levels in the future.

# Conclusion

- There are signs that all countries of the World, including the Muslim and Arab countries are working hard toward achieving higher levels of knowledge economy.
- The levels of knowledge indicators in Muslim Countries are not homogeneous.
- Half of the Muslim countries ranks among the countries that have an average KEI and the other half ranks among the countries that have a very level.
- Thus, we find on one hand countries like Malaysia and Qatar that have KEIs slightly higher than the average.
- On the other hand, we find countries like the Sudan, Yemen and Bangladesh have KEIs < 1.4 out of 10.
- This confirms the huge gap in knowledge for Muslim Countries.

# Conclusion

- Among the Muslim and Arab countries, the Gulf States are exerting more efforts towards achieving higher levels of electronic techniques, communication and information technology, internet, electronic services, etc.. In view of the higher levels of incomes resulting from higher prices of oil.
- But, as Abu Haliqa (1428) argues, the interest shown by Muslim Countries in all forms of electronic services does not go beyond the usage, despite that fact that more than three decades have passed since the discovery of the processor.
- This, in fact is a disturbing situation. Will the share of the Muslim Countries in the industry of information technology be similar to its share in the traditional industry?
- Besides, moving from an economy that relies mainly on selling raw materials to an economy that is knowledge based is not merely a vision, but a struggle that might takes decades to realize.

## Some of the Means to Move towards Knowledge Economy

- For MCs to move towards KE and benefit from its results that lead to sustainable economic growth and development, they need to face the various challenges that it entails.
- They need to have clear strategies to stimulate knowledge economy, through the development of policies and mechanisms, such as:
  - Giving priority to teaching and training future generations.
  - Encouraging innovation and research, especially in modern technology and means of communications.
  - Motivating pupils to learn from young to old age.
  - Providing teaching aids and educational training for teachers.
  - Reviewing the strategies of education from time to time.

## Some of the Means to Move towards Knowledge Economy

- Opening more schools, professional colleges and universities.
- Providing grants and incentive awards to outstanding students at all levels.
- Developing quality education in institutions of higher education in line with the developments taking place in the world of knowledge and information.
- Paying attention to the academic level of faculty members, particularly in scientific disciplines and knowledge.
- Linking the output of educational institutions to the requirements of development and of the labour market.

## **Some of the Means to Move towards Knowledge Economy**

- **Periodically evaluating the curricula and programmes of science and technology in all types and levels of education and training.**
- **Paying special attention to higher studies in the fields of applied sciences.**
- **Providing Government support for the dissemination of knowledge among all members of the society, and reducing taxes and duties on goods of knowledge.**
- **Creating an environment suitable for dealing with the knowledge economy through the formation of economic sectors able to deal with this modern economy.**

## Some of the Means to Move towards Knowledge Economy

- **Developing financial and administrative regulations governing the work of scientific research.**
- **Implementing e-government services**
- **Providing appropriate environments to attract highly qualified scientific competencies.**
- **Increasing the numbers employed in research and development, taking into account the balance between categories.**