

Towards an Educational Model for the Knowledge Economy

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Abstract

The rapid transformation of the modern economies reveals the significance of knowledge, innovation and technology for economic growth. In Europe, the Lisbon Strategy set the very ambitious goal to “become the more competitive knowledge economy in the world by 2010” Besides public policies, the development of the knowledge economy calls for an educational reform with respect to the programs and processes. Business Schools are required to prepare graduates for the new environment by cultivating skills and competences relevant to the needs of the knowledge economy. This paper focuses on the requirements of the emerging knowledge economy and attempts to outline its educational needs. To this end, the paper analyzes the educational programs of the top-rated European Business Schools, to find out the degree they can respond to the needs of the knowledge economy. In addition, it proposes a conceptual framework for the knowledge economy and outlines the structure of the business curriculum for the knowledge economy.

1. Introduction

In March 2000, the leaders of the European Union formulated the “Lisbon Strategy” to make EU “the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment” [1]. This decision introduced formally the “knowledge economy” in the political agenda and recognised its importance for the achievement of political and economic objectives.

The Lisbon Strategy recognizes that knowledge, innovation and technology are considered now extremely significant for the economic growth. The generation and exploitation of knowledge is becoming critical on how companies, regions and economies develop and sustain competitive advantage.

Tertiary education institutions have a critical role in supporting knowledge- driven economic growth strategies and the construction of socially cohesive societies. The production and consumption capacities of the knowledge economy as well as many of its processes and products are generated within the tertiary education system. According to the World bank [2], the tertiary education system is necessary for the effective creation, dissemination and application of knowledge and for building

intellectual, technical and professional capacity. In general, tertiary education institutions support knowledge-driven economic growth strategies by developing qualified and adaptable workforce, by generating new knowledge and by building the capacity to access existing stores of global knowledge and to adapt that knowledge to local requirements [2].

Business schools, in particular, have a critical role in supporting the development of the knowledge economy, as they are the basic vehicles for the education of the future business leaders, as well as professionals, scientists, technicians and other business staff. To successfully fulfil their educational and research functions in the 21st century, business schools need to be able to respond effectively to the changing educational and training needs of the modern knowledge economy and society. In these circumstances, the content of the business curriculum should be under constant revision.

Despite the fact that business education is widely acknowledged as being career –oriented, it is under severe criticism that the curricula are irrelevant to the real needs and practices of business enterprises and consequently the graduates do not have the right knowledge and skills that are required in business. A clear evidence of this mismatch between business education and business needs is the so-called “skills gap” and “skills mismatch” [3].

This paper focuses on the requirements of the emerging knowledge economy and attempts to outline an educational model for the emerging knowledge economy. To this end, the paper analyzes the postgraduate programs offered by the top 50 European Business Schools (according to the Financial Times ranking survey performed on 2005) to anticipate the extent to which they are tailored to the needs of the knowledge economy. In addition, it proposes a conceptual framework for the knowledge economy and outlines the structure of the business curriculum for the knowledge economy.

The rest of the paper is organised as follows: in section two we provide a brief literature review of the knowledge economy. In section three we outline a conceptual framework for the knowledge economy. In section four we present the outcomes of the analysis of the postgraduate programs of the top 50 European Business Schools. In section five we discuss the structure of the business curriculum for the knowledge economy.

2. Literature Review

It is difficult to find a complete definition of the knowledge economy in the literature; for this the notion of the “knowledge economy” is rather rhetorical than practically and analytically useful [in 4]. This section provides a brief literature review on the knowledge economy, in order to explicate the basic concepts and dimensions of the phenomenon.

The idea that knowledge plays an important role in the economy is not new. All economies, however simple they are, are based on knowledge about how to do the various economic activities and their transformation has always been driven by knowledge [5, 6]. The difference with the emerging “knowledge economy” refers to the magnitude of incorporation of knowledge and information into economic activity, which is now so great that induces quite profound structural and qualitative changes in the operation of the economy.

OECD [6] recognizes that the term “knowledge-based economy” results from the recognition of the role of knowledge and technology in economic growth; the knowledge-based economy is the economy which is directly based on the production, distribution and use of knowledge and information.

A Work Foundation Report [3] provides some of the common definitions used for the description of the knowledge economy. The knowledge economy has most commonly been defined in terms of technology and knowledge-based industries reflecting R&D intensities, high ICT usage and the deployment of large numbers of graduates and professional and associate professional workers. Note that an industry-based definition is not entirely appropriate because the knowledge economy applies across all industries. On the other hand, such an approach has the advantage of being able to draw on official statistics based on internationally agreed definitions of knowledge-based industries. The Eurostat, for example, analyses the knowledge service sector into four groups: high tech services (R&D and computing); financial services; market knowledge services (communications, travel and business services) and other knowledge services (health, education, and recreational and cultural services).

A number of studies tries to distinguish the driving forces for the development of the knowledge economy and the key dimensions of the phenomenon. The increased importance of knowledge as the key driver of economic growth is widely seen as a consequence of the technological change and especially the disruptive impact of Information and Communication Technologies (ICT), as well as of the globalization and the

development of new organizational models and managerial practices in the business world.

A report of the World Bank [2] distinguishes among the most critical dimensions of change in the modern world the impact of globalization, the increasing importance of knowledge as a main driver of growth and the information and communication revolution. OECD [6] provides three different hypotheses to explain current trends in the OECD countries: globalization, technological change and developments in business firm behavior.

Houghton and Sheehan [5] consider that the knowledge economy is emerging from two principal forces: the rise in knowledge intensity of economic activities and the increasing globalisation of economic affairs. They propose that the knowledge economy is a holistic phenomenon referring to the overall economic structure that is emerging, and not to any one of these phenomena separately.

3. A Conceptual Framework for the Knowledge Economy

In this section we outline a conceptual framework for the knowledge economy, which will be used in the rest of this paper for the analysis of the current postgraduate programs in the top European Business Schools, the recognition of the educational needs in the knowledge economy and the description of the structure of the business curriculum for the knowledge economy.

The proposed conceptual framework for the knowledge economy is a refinement of the previous work of Paschaloudis et al. [7], which analyzed the dimensions of the “New Economy” and proposed they consist of the digital economy, the global economy, the knowledge economy, the network economy and the service economy.

We believe that the knowledge economy is the core element of the new economic setting that takes place. In fact, the role of ICT and the trend of globalization form the background and the enabling forces for the development of the knowledge economy, while the network economy and the service economy are the specific domains that the development of the knowledge economy is manifested.

Information and communication technologies have greatly reduced the cost and increased the capacity of organisations to codify knowledge, process and communicate information. As a result, the development of the knowledge economy is based on the use of modern ICT in the creation, codification, dissemination and exploitation of knowledge.

The process of globalization is accelerating this trend because knowledge is increasingly at the core of a country’s competitive advantage [8]. Globalization

provides a greater variety of business opportunities. For example, some firms have adopted globalized business models that allow them to concentrate certain types of activities in some countries (e.g. production activities in low-cost developing countries and R&D and marketing activities in developed countries). Such globalized business models enhance the rationalisation of business processes, favour the development of new organisational models and facilitate the development of business networks.

The knowledge economy places great importance not only on the creation of knowledge, but on its diffusion and exploitation as well, aiming at the development of improvements and innovations. The innovation process requires considerable communication among different actors that take place in the innovation process (e.g. business partners, suppliers, customers, universities, research institutes). Business firms are induced, therefore, to form and participate in business networks for the development of competences, the sharing of know-how and the learning from their business partners.

The knowledge economy boosts the development of the service economy by favoring the creation of new business models that focus on the provision of specialized services in the form of knowledge, information and data.

The proposed conceptual framework for the knowledge economy is presented in figure 1. A brief explanation of the framework follows.

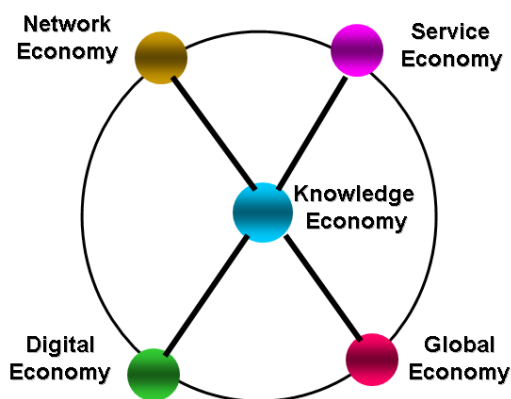


Fig 1. A framework for the knowledge economy

The knowledge economy. Knowledge, innovation and technology are considered now extremely significant for the economic growth. The generation and exploitation of knowledge is becoming critical on how companies, regions and economies develop and sustain competitive advantage. Business firms tend to evolve into “smart organisations”, by using knowledge,

producing innovations and managing intangible assets.

The digital economy. It is based on the digitization of products and processes and the excessive use of ICT in business activities. It involves both the sectors and activities that develop ICT artifacts (the ICT industry) and those that are users of the ICT artifacts (e.g. service industries, activities related to e-business and e-commerce, etc.).

The global economy. Globalization is a major trend that governs the business environment. It is related to opening trade, freeing people and business mobility, deregulation, self-regulation of business firms, outsourcing, etc.

The network economy. Cooperation in business networks and strategic alliances reduces uncertainty, shares costs and knowledge and accelerates innovations. Globalization necessitates and ICT facilitates the emergence of the business networks; companies compete globally and ICT reduces the costs of outsourcing and cooperation with external entities.

The service economy. In the modern economies a proportional shift in activity and employment from industrial to service activities is recognized. The service sector was particularly affected by the progress in ICT and the Internet and is now the most important field of economic activity in modern economies.

Notice that all the dimensions are knitted together; for instance, the network economy becomes necessary due to globalization, is empowered by ICT, supports innovation transfer and knowledge sharing and is preminent in services, where business firms cooperate electronically in order to provide composite offers with added value for the customer.

4. The Knowledge Economy in European Postgraduate Education

In this section we present a survey about the extent to which the European Business Schools have adjusted their postgraduate programmes to the needs of the knowledge economy. The survey is based on the rank of the top 50 European Business Schools that was published by Financial Times in 2005. For each of these Business Schools, we recorded all the postgraduate programs it offers, as well as information about the profile of the programs (e.g. mission, philosophy or description) and the courses (title and description), where it was available. Data retrieval was based on the information that Business Schools publish on their Web sites. Only one University didn't provide information (in english) about its postgraduate programs.

The sample consists of 465 postgraduate programs (an average of 9.5 programs per Business School).

The programs were examined based on their title and description for being related to any of the dimensions of the new economy that we presented in the previous section. This process was performed in the first place by two researchers that worked independently. For the programs they agreed, these programs were characterized accordingly; for the programs they disagreed, a second cycle of thorough examination followed, which was performed by another two researchers who worked independently. If they agreed, the program was characterized accordingly, otherwise the program was characterized as neutral (i.e. not related to any dimension).

Table 1 presents the results for all the postgraduate programs offered by the top 50 European Business Schools. Notice that MBAs and Executive MBAs were regarded as generic degrees, not directly related to any dimension of the knowledge economy; International MBAs and MScs were related to the global economy.

Table 1. The relationship of the postgraduate programs to the knowledge economy

Dimension	Number	Percent.	Perc. in KE programs
Knowledge economy	11	2 %	9 %
Digital economy	24	5 %	20 %
Global economy	62	13 %	50 %
Network economy	9	2 %	7 %
Service economy	17	4 %	14 %
None dimension	342	74 %	-
Total	465	100 %	100 %

The results indicate that the knowledge economy in general is served by only a short minority (26 percent) of postgraduate programs in the top-rated European Business Schools. In particular, the global economy is the dimension that is better served by European Business Schools, as half of all the postgraduate programs are related to the global dimension of the new economy. The digital economy seems to be less important, as only one out of five programs related to the knowledge economy refers to this dimension. The needs of the service economy seem to be relatively well-served also (notice that we included in this dimension programs such as Tourism Management, Healthcare Systems Management, Public Administration Management, Financial Services Systems and Insurance Management).

We acknowledge that an educational program can be structured in a way that serves the educational needs of the knowledge economy, without having a

title that stresses its relationship with the knowledge economy. For this reason we analyzed the courses of the MBAs offered by the top 50 European Business Schools to find out if the content of the curriculum is related to the knowledge economy. The results are presented in table 2.

Table 2. The relationship of the content of the MBAs to the knowledge economy

Dimension	Number	Percentage
None dimension	995	74 %
Global Economy	175	13 %
Digital Economy	102	8 %
Knowledge Economy	29	2 %
Service Economy	28	2 %
Network Economy	23	2 %
Total	1352	100 %

The results are quite similar: only a short minority (26 percent) of all the courses, core and or electives, offered by the MBAs of the top-rated European Business Schools are related to any dimension of the knowledge economy. Half of these courses (13 percent) are related with the global economy, which is a general trend and exercises influence on almost every operation of the business enterprises. The second most popular dimension is the digital economy (8 percent). The other three dimensions (knowledge Economy as a core part, network economy and service economy) appear to have a marginal position in the MBA curriculum, as each constitutes about 2 percent of the courses.

The general conclusion is that the top European Business Schools seem to disregard to a certain degree the development of the knowledge economy. Such an attitude is not easily explained in the context of the Lisbon Strategy to make EU by 2010 the most dynamic and competitive knowledge-based economy. Note that in this research we outlined broadly the knowledge economy and related it with forces such as the ICT, globalization, business networks, services, knowledge and innovation. We consider that these forces –among some other– exercise major influence and tend to shape the future of business enterprises. As a result, the findings of the survey suggest that the European Business Schools are not in fact very responsive to the changes set by the economic and business environment.

The most important limitations of the research presented in this paper refer to its restricted scope on the top 50 European Business Schools. Note that top-rated Business Schools may prefer to adhere to their prestigious, generic degrees (e.g. MBAs) and may be reluctant in changing quickly their curricula to reflect the forthcoming changes. In this case, other Business Schools, not included in the top 50 ranking, might be found more responsive to the needs of the knowledge

economy. Consequently, future research should enlarge the sample and attempt to identify clusters of Business Schools, according to their attitude towards the needs of the knowledge economy and the educational methodology they use.

5. Discussion on the Development of Educational Model for the Knowledge Economy

Taking for granted that the grant strategy of the EU pursues the development of the knowledge-based economy, it is supposed that European Business Schools should try to align their curricula to the requirements of the knowledge-based economy. In this section we try to outline some general guidelines for the development of curricula in Business Schools that are related to the needs of the knowledge-based economy.

It is totally acknowledge that the knowledge economy sets great challenges for Business Schools, because it is a new and multifaceted phenomenon that questions the conventional wisdom in economic development. The knowledge economy recognizes people as the original source of social and economic progress and highlights the role of technology in this effort; it needs, hence, open-minded people capable of producing, combining and handling knowledge; it fosters creativity and requires innovations; it emphasizes the development and management of intangible assets.

The personnel working on knowledge-intensive jobs must possess a wide range of skills in order to carry out their tasks effectively. Besides skills in the use of information systems and digital equipment (“digital literacy”), they must possess skills and competencies relating to the selection and efficient use of information (“information literacy”). Such skills and tacit knowledge for handling codified knowledge are complementary with information and communication technology and become more important than ever. In addition, “soft skills”, related with communication and human resource management, become extremely important in the modern workplaces that require knowledge transfer and intra- and inter-organisational cooperation.

In section 3 we presented a comprehensive framework for the knowledge economy, which considers the knowledge economy as the core concept that epitomizes current trends in economy related with the role of ICT, globalisation, business networking and the role of the service sector. If this conceptualisation is correct, then the modernisation of the business curriculum should be based on the development of skills for the several dimensions that comprise the knowledge economy.

Note that it is the synthesis of all these forces that forms the knowledge economy. In other words, the knowledge economy is not a monolithic phenomenon, that can be analysed separately. On the contrary, it requires the development of integrated curricula, which knit together courses and skills related with the different aspects of the knowledge economy.

In figure 2 we outline the structure of the business curriculum for the knowledge economy. It consists of four layers related to the following: a) economic and quantitative analysis, b) business management, c) foundations of the knowledge economy and d) manifestation of the knowledge economy.

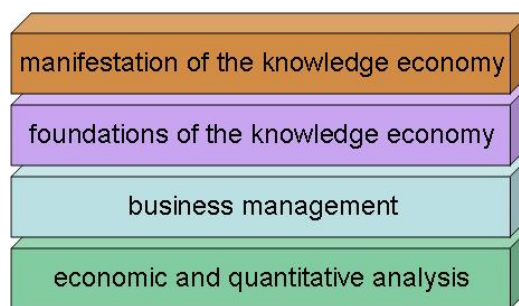


Fig 2. The business curriculum stack for the knowledge economy

The two basic layers develop analytical skills and management skills respectively. They refer in general to the traditional business curriculum, which serves as the basis for the development of curricula adjusted for the needs of the knowledge economy.

The third layer refers to the foundations of the knowledge economy, such as information and communication technologies, globalisation, knowledge management and innovation and technology management. The purpose of the courses in this layer is to develop a set of generic and particular skills that are usually required in the modern workplaces of the knowledge economy.

The fourth layer refers to the study of the fields in which the knowledge economy is manifested, such as the service sector, business networks and strategic alliances. The skills that are developed in this layer are domain- specific and strategy-oriented for the development and exploitation of opportunities in the knowledge economy.

It is difficult to suggest the “right proportion” or the “fair proportion” of courses related to the knowledge economy in the business curriculum. The design of the curriculum and the educational process in general are related with the educational philosophy, the purposes and the objectives of each Business School. In addition, business management associations and business schools accreditation organizations do not determine clearly the purpose and the content of

education in business management and do not offer reference curriculum models in business education, which could serve as compass in the effort of aligning the business curriculum in the needs of the knowledge-based economy.

The development of an educational model for the knowledge economy requires the unambiguous identification of the needs of the knowledge economy. Additional sources of information can come from professional associations, as well as from surveys on business enterprises.

6. Conclusion

The development of the knowledge economy requires that Universities modernize their curricula and educational processes to prepare graduates for successful careers and professional development. The knowledge economy recognizes people as the original source of social and economic progress and highlights the role of technology in this effort; it needs, hence, open-minded people capable of producing, combining and handling knowledge. The personnel working on knowledge-intensive jobs must possess a wide range of skills that extend beyond technical skills in order to carry out their tasks effectively.

This paper analyzes the educational programs of the top-rated European Business Schools, to find out the degree they can respond to the needs of the knowledge economy, and proposes a conceptual framework for the knowledge economy and a generic structure for the business curriculum in the knowledge economy. Future work should elaborate on this model, experiment with it and evaluate it in practice.

7. Acknowledgement

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