

KNOWLEDGE ECONOMY

It is generally accepted that science and technology are progressing more and more rapidly and that new inventions and possibilities are reshaping our lives to influence our way of thinking and acting. Much of the development and trends observed in recent years may be comprised by terms such as knowledge economy, knowledge society or similar expressions.

In a narrow sense knowledge economy can be understood as the use of knowledge to generate value, while knowledge economy in a broader understanding is associated with certain characteristics of organizations and the functioning of the global economy. From this perspective, agricultural- and labor-intensive economies are in a transition to a knowledge economy characterized by interconnectedness and globalization, where knowledge resources are more important than traditional economic resources.

In the knowledge economy, knowledge is emphasized as the key element or the essential raw material. Some authors state that knowledge is the most important product, while others regard knowledge as the resource of greatest importance in the value creation process in the knowledge economy. Knowledge is a complex term, and the understanding of what constitutes knowledge, i.e., epistemologies, differs among individuals. Acknowledging the changes implied by the knowledge economy, brings knowledge into managerial focus, and epistemological understandings becomes important for managing in the knowledge economy.

This entry describes how knowledge has come on the agenda as part of the Service Economy. We outline characteristics of the Knowledge Economy and describe how knowledge is important for

firm's value creation and how knowledge is a key driver for growth in the Service Economy. The focus on knowledge implies new ways of managing and new ways of understanding the role knowledge in the management processes.

Knowledge on the Agenda of a New Service Economy

When using the expression knowledge economy, the importance of constantly creating new knowledge and converting it into value-creating innovation is a decisive ingredient in the success of any company. Knowledge as a resource is rather unique since it is both the input to the production process and the outcome of it. It is also often stated that knowledge probably is the only resource that increases in value while being used. Moreover, the perception of knowledge is generally changing.

The Rise of the Knowledge Economy

The roots of the knowledge economy can be traced back to the time after the Second World War, and as early as in the 1960s Peter F. Drucker mentioned 'knowledge work' and 'knowledge worker' in his writings. However, knowledge is of course not a new concept. Ever since the ancient Greek philosophers in the 5th century B.C. postulated that an object is to be acknowledged by way of a mental copy of it, people have attempted to isolate and define the concept of knowledge.

However, it was not until the beginning of the 1990s or even the mid 1990s that knowledge really was brought up for discussion in management literature. Even though knowledge is launched as the new decisive factor in the success of each company, it is worth remembering that the ideas may not be new – even though the wrapping is. Almost forgotten or even well known techniques

are launched in management literature under new names whereby renewed interest and action are mobilized. This is a common phenomenon, which has been discussed in relation to many management concepts.

Knowledge as a Field of Research and Practice

It is only in recent years that knowledge management has crystallized as a special field of practice even though researchers seem to have been struggling with problems in relation to knowledge management for much longer. An explanatory factor could be that knowledge management comprises techniques which have been applied in other contexts but which have not been collected with a managerial focus until now.

The contemporary knowledge-oriented literature is rooted in many different theories, including resource-based theory, evolutionary theory, and organizational learning. Many researchers have introduced the concept of knowledge in academic discussions within varying fields. Some focus on the management of intellectual capital, whereas others are concerned with core competencies or innovation. A common characteristic of these theories is that knowledge is an important factor that is structured in ways that ensure the competitiveness of companies.

Characteristics of the Knowledge Economy

There might be many reasons for the interest in the knowledge economy as well as knowledge and knowledge management in practice, but certain general themes or trends seem to be found in literature.

Knowledge based valuation of firms

The difference between market value and book value of companies was increasing towards the end of the 1990s. This was taken as a clear sign of the changes in the relative importance of production factors. Managers and possibly also investors began to take an interest in the reasons for this phenomenon, and the difference was ascribed to the knowledge within the firm, or more often directly defined by the term intellectual capital.

Although intellectual capital is an accounting term, it also refers to the management of these intangible or knowledge-based assets. Many companies in the Scandinavian countries have developed intellectual capital statements both to visualize the company's knowledge resources and to further develop them. The intellectual capital statement is here seen as a strategic tool focusing on the development of the company's knowledge resources and not only on the reporting of knowledge resources at a given time. For more information on this, see intellectual capital.

Growth of the knowledge based industries

It has been much debated among economist whether particular industries are especially knowledge intensive and how much these sectors contribute to the overall growth in productivity. In the context of the unusual financial and macroeconomic development in the 1990es much of the popular literature on the knowledge economy brought forward the point of view that the knowledge economy operated differently from the agricultural- and labor-intensive economies in fundamental ways.

In the knowledge economy new kinds of strategies and companies were possible, and it was argued that value creation should be understood in new ways. Further, the economic theories and national statistics should be changed to accommodate the new rules of the game. Now, however,

it is generally accepted that the basic economic principles are the same as always.

New needs for managing knowledge

In the wake of the rationalization waves of the 1980s, a tendency to focus on knowledge management arose as a reaction to a short-term cost consciousness. Organizations often needed knowledge in relation to strategically important tasks, and at the same time retention of employees was becoming more difficult. Consequently, organizations began to focus on knowledge management with attempts to store knowledge for later use.

Also, many global companies were organized in new ways, which aimed at the promotion of knowledge flows and the integration of product groups and geographical regions. However, in practice it created small 'knowledge islands' which generated new problems as fast knowledge transfer became necessary.

Innovation and speed of change

Over the years the composition of the gross national product has also been changing towards more knowledge intensive activities that contribute to an accelerated pace of technological and scientific advance. This implies a new set of strategic options to which firms must adhere. The increase in the complexity of technologies and society in general was felt to take place at increasing pace. Firms had to adapt to rapidly changing consumer demands, and heavy demands were put on the companies' innovative ability and the development of new products and services.

Managing in the knowledge economy

Managing in the knowledge economy requires knowledge management. Although this statement

appears almost tautological, it draws attention to new ways of management. The term 'management' indicates that knowledge is manageable. Thus, in many companies, knowledge management is reduced to a question of applying information technology, as this obviously is technology more manageable than knowledge as such. However, knowledge is often related to processes, which are basically not manageable in the traditional sense or at least lose their efficiency and impact if managed too tightly.

Firms are tempted to regard their employees as the most important knowledge resource in the firm. Consequently, they basically apply novel techniques in combination with well-established management principles in the human resource area. However, if focusing too narrowly on human resource practices as the key to well-functioning knowledge management, the firm is just as unlikely to succeed as if IT-systems alone had constituted the solution.

It seems unlikely that knowledge can be managed by means of information technology by itself and that information technology is equivalent to knowledge management. However, most authors acknowledge that it is not sufficient to collect, anchor, and use information. New knowledge about customers and other internal and external stakeholders also needs to be created. Therefore customers often make up an essential source of information in the knowledge-creating process. Since their needs and thus knowledge about new demands and product and service concepts may be very valuable. Thus companies should take such information very seriously and assess its potential.

When it comes to research, the trend is to put knowledge management into a broader and often strategic perspective rather than to focus exclusively on information technology. Many researchers from various fields explore and expand the role of knowledge in a variety of settings. Therefore it is important to point out that knowledge management should not be regarded as an isolated element. It is one of several management tools which together address the challenges the

company faces in relation to its knowledge management and in general.

Understanding Knowledge

The overwhelming interests in the knowledge economy influences both management practice and research in many ways. When the management literature focuses on knowledge, the discussion often concerns the characteristics of knowledge, the difference between information and knowledge, and the categorization of knowledge.

However, the literature comprises many different research traditions and points of view. Some authors see knowledge as a resource that can form the basis for strategy formulation, whereas others find that it is integrated in a broader strategy framework such as the balanced scorecard approach. Others again perceive knowledge and intellectual capital as two closely connected terms.

When managers discuss knowledge, two widely different perspectives are often taken. The difference is in the way in which knowledge is perceived. In other words, the basic epistemological perspectives differ. The first perspective can be termed the artifact-based perspective, while the second is termed the process-based perspective.

The artifact based perspective

In the artifact oriented perspective focus is on information technology and the ways in which technology may be applied for the codification of knowledge so that management may act accordingly. It is assumed that everything can be described, and the more data a company collects, the more knowledge it possesses.

The artifact-oriented perspective often relies on system theory and information processing

theories. In practical applications, it draws on information technology. Many authors have indicated that this has become insufficient when handling management challenges in relation to the complexity of the knowledge society. The problem is not lack of documents, data, or access to information. The limitation can rather be found in the quality, content, and organization of the material.

The process based perspective

The *process-oriented perspective* is most clearly exemplified by Ikujiro Nonaka's research where knowledge is perceived as a dynamic human process of justifying personal beliefs as a part of an aspiration for the 'truth'. An essential point is that focus is on the process in which knowledge is created and not on the document or the rules which are based on the process. This implies that continuous and dynamic adaptation to 'real life' takes place. Thus knowledge is a continuous process and it changes gradually as the individual framework of understanding develops.

Perceiving Knowledge in the Knowledge Economy

Knowledge is a complex term as it is often not easy to agree on an exact definition. Individual's background very much determines how knowledge is perceived. Thus, knowledge must be understood as a subjective resource. Following this notion, it is quite possible that knowledge can be expressed in many different ways since not only knowledge but also knowledge about knowledge and the overall understanding of what a knowledge economy is depend on the context. This implies that it is essential to clarify the background for the various perceptions of knowledge, knowledge management concepts etc.

The reflective manager

The understanding of the term knowledge or at least what it means to the individual or the organization is important because it affects the importance management attaches to the term knowledge. This implies that successful management in the knowledge economy requires that strategies relate to the epistemological understanding of knowledge among managers and employees.

If significant importance is attached to epistemological views, heavier demands to a certain extent are placed on the manager. It is no longer sufficient just to act and make decisions because reflection on own actions becomes part of the decision process. The decision process must take due account of other possible solutions to the problems. The reflective manager must therefore be familiar with different epistemologies because this awareness provides a far larger managing scope, and ensures a better understanding of the limitations to the various sets of actions.

Adopting tools that fit the epistemology

More effective knowledge management may result from adapting management tools that fit the prevailing perception of knowledge. This implies that management practices will be perceived as more effective if they match the personal epistemology. However, knowledge management is multi-faceted, and our understanding of current practice has already been set by our choice of epistemology. This illustrates that the more an organization focuses on knowledge, the more important it becomes to understand the epistemological implications.

No epistemology can be forced upon individuals or the organization. By becoming familiar with the way in which colleagues, co-operators, and others understand reality, more possibilities will result and improved co-operation is likely to evolve. As knowledge depends on both the point of departure of the individual employee and the organizational context, the conscious choice of an

epistemological mode is a critical success factor for research and management.

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See also Experience Economy; Knowledge Management; Learning Organization; Service Economy

FURTHER READINGS

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