

Strugar, Ivan; Fakleš, Davor

**Conference Paper**

## Knowledge Management in Knowledge Society

**Provided in Cooperation with:**

IRENET - Society for Advancing Innovation and Research in Economy, Zagreb

*Suggested Citation:* Strugar, Ivan; Fakleš, Davor (2016) : Knowledge Management in Knowledge Society, In: Proceedings of the ENTRENOVA - ENTERprise REsearch InNOVation Conference, Rovinj, Croatia, 8-9 September 2016, IRENET - Society for Advancing Innovation and Research in Economy, Zagreb, pp. 273-279

This Version is available at:

<https://hdl.handle.net/10419/183726>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by-nc/4.0/>

# Knowledge Management in Knowledge Society

*Ivan Strugar*

*Faculty of Economics and Business, Zagreb, Croatia*

*Davor Fakleš*

*Ericsson Nikola Tesla d.d., Zagreb, Croatia*

## Abstract

In spite the fact that individuals or even some companies neglect knowledge as one of key resources of contemporary business, knowledge occupies very important position within these successful companies. Dominant opinion of these individuals is that knowledge can't be measured, and according to that it is not possible to govern with knowledge. Different researches how to implement knowledge and how to maintain required level of knowledge among the company employees proves that this is wrong assumption. Investment in the people, in creation of new knowledge and employee intellectual capital management makes a weapon of new economy in which knowledge is main product and that what is buying and selling. In this globalized market with fierce competition, demand and knowledge creation is key factor. The goal of this paper is to present overview of knowledge management in knowledge society, with point to new trends and challenges.

**Keywords:** knowledge, knowledge economy, collaboration

**JEL classification:** D83

## Introduction

The first international conference on topic "Knowledge – strategic imperative" was held in USA in Houston in September 1995. The first specialized journals in which we can count Knowledge Management, Knowledge Inc., Knowledge Management Review and Journal of Knowledge Management appears in 1997. Till 1995 in the world it was published annually several articles dealing with KM and in 1999 it was published almost 700 articles related to KM. From 1996 to 1997 it was held more than 30 international conferences in USA and in Europe to discuss KM. During this period, the consulting companies achieved a turnover of 1.5 billion dollars by advising managers how to most effectively manage knowledge across the company (Kovačić, 2004).

Although there are a lot of earlier records of the importance of the notion of knowledge, one can say with certainty that the beginning of the introduction of knowledge and its management dates back to the second half of the 90s of the last century, especially after the publication of the first scholarly publications in the field.

If you start from a knowledge as a resource whose value can be measured and therefore constitutes the basis of intellectual capital of the company, then as a conclusion could impose the idea that a company which has not adopted knowledge as a key resource, still bases its business on some older principles of leadership and business that in the contemporary age becomes the burden of successful business.

## Knowledge then and now

Back in 1890 Alfred Marshall said that knowledge is the most powerful generator production. 1962 Fritz Machlup in the book "The Production and Distribution of Knowledge in the United States" gave the first modern analyse of knowledge importance and knowledge measurement.

Sometime in the second half of the 20th century industrial economy of the past century converts into present information and knowledge based economy. In today prevailing knowledge economy the most important resources are intangible resources: time, speed, quality, patents, information, knowledge, brand image and customer or client goodwill (Kovačić 2004). OECD groups intangibles into three types: computerised information (such as software and databases); innovative property (such as scientific and non-scientific R&D, copyrights, designs, trademarks); and economic competencies (including brand equity, firm-specific human capital, networks joining people and institutions, organisational know-how that increases enterprise efficiency, and aspects of advertising and marketing). (OECD, 2011) Traditionally, an airline organisation's assets included the physical inventory of airplanes. Today, the airlines' greatest asset is the SABRE reservation system, software that enables the airline not only to manage the logistics of its passenger reservations but also to implement a seat "yield management system." (Dalkir, 2005) While the average company of 80-ies in the world in the past century consisted of 70% of the tangible and about 30% of intangible assets, in the 90s this percentage has changed in favour of intangible assets. Importance of intangible assets in 21 century exceeds tangible assets almost four times (Matijević, 2006). In the United Kingdom, for instance, investment in intangibles is estimated to have more than doubled as a share of market sector gross value added between 1970 and 2004. (OECD, 2011)

## KM and new values

Overall purpose of KM is to maximise the enterprise's knowledge-related effectiveness and returns from its knowledge assets and to renew them constantly. KM is to understand, focus on, and manage systematic, explicit, and deliberate knowledge building, renewal, and application-that is, manage effective knowledge processes (Wiig, 2015) Definitions are confined to exploiting existing knowledge with its further development to be applied to new processes, products and services.

For a better understanding of KM is useful to summarise clarification of the relationship between data, information and knowledge (Oslić, 2009):

- Data. Knowledge begins with data. These are objective and quantitative facts such as: share price, accurate delivery, customer satisfaction index, capacity and process stability. The data can easily be stored in the database and custom labelled and prepared for easy and quick search. They have no meaning, but only describe what it is and what it was
- Information. The data are the basis for information. Information is data with meaning, because it puts the information in context. Data on the actual date of delivery in relation to the plan - i.e., the delivery will be five days after the agreed date - represents data with added meaning and relations, it forms the information.
- Knowledge is information with internal values, for example, delivery note (information) means that we must do something in order to achieve the promises made to customers. The added dimension values or relations can only come from employees. Their experience and knowledge of the problem turns information into knowledge which has the highest value for the

organisation, as it moves employees to action. The application of knowledge leads to changes, new products and services, and to more successful business.

Tangible goods lose importance in comparison to the intangible assets. Today trading information market areas where values are created began to exceed those market areas where physical products are traded. The value of the company is now more determined by the amount of knowledge (knowledge capital), rather than its accounting or physical assets. Among 5 most valuable world companies according to market value listed in the year 2015, 3 are software companies (Apple, Google, Microsoft). Another example is Uber as the most valuable start-up, with market value estimated to 40 billion \$ with almost no tangible assets (Thomson, 2016).

Thus today in Internet era where knowledge is everywhere, ability to manage knowledge is crucial to establish and keep company competitiveness on the market and to create a more efficient and effective organisation.

## Types and classification of knowledge

There are two types of knowledge (Špremić, 2001):

- Explicit knowledge, as a result of convergent approaches. Here belongs the knowledge that is stored in books, documents enterprises, knowledge that we get by the process of education. This kind of knowledge can be easily find, retrieve and use. It can also be digitized and that speed up the process of finding and applying them.
- Implicit (silent, hidden) knowledge is knowledge based on experience that is in the minds of people. It is result of their skills and many years of individual experience. It is an individual knowledge that quite often remains undiscovered and unused, in which case it has very little value. However, if used, usually brings great value. It is spread by direct contact among employees, but collection and sharing of this knowledge is not an easy and not a common problem. This type of knowledge is often unjustifiably neglected.

There is another classification of knowledge according to the compounds (Vidović, 2003):

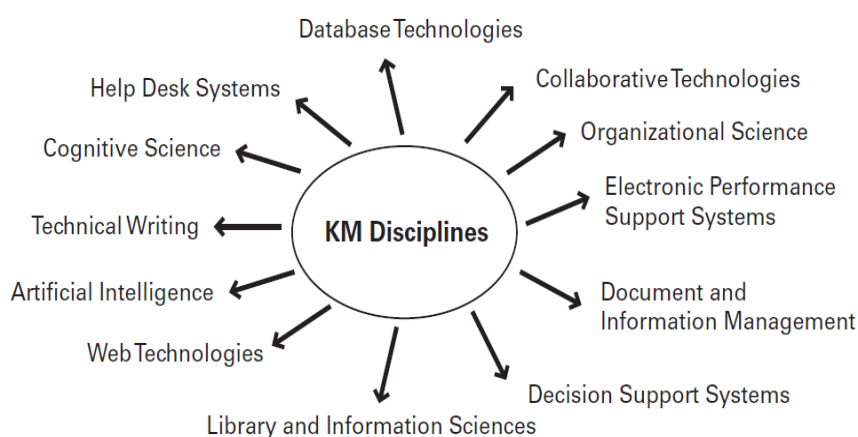
- Factual knowledge, it forms data and information.
- Procedural knowledge, techniques such as algorithmic and heuristic procedures used in expert systems or by experts who are responsible for solving certain problems.
- Knowledge of the judgment, it allows evaluation of the limitations. It is important for management during the planning process to set achievable goals in plans.

Linking this classification depends largely on the ability of companies to implement a successful strategy of sharing knowledge. It is very important to try to convert implicit knowledge into explicit. The manner of implementation is not simple, it is necessary to possess certain processes and collaborative tools to transfer accumulated knowledge to other employees. Otherwise it may cause deterioration of long accumulated knowledge at individuals who have changed the company or who have retired. In this case the company loses certain investments that were related to the observed employees.

KM is largely dependent on management's ability to manage people, which in this case meant human KM. Identifying the creative and innovative potential of people is the challenge that lays at the modern management.

KM is not simple to understand and manage, since it is possible from the wider perspective to conclude that KM includes everything related to knowledge. But from the narrower perspective it is possible to conclude that KM is information technology system that dispenses organisational know-how through organisation. The fact is that KM is mixture of different techniques, tools and strategies, and multidisciplinary approach is required to understand and successfully manage such complex structure.

Figure 1  
Interdisciplinary nature of KM



Source: Dalkir, 2011

## Knowledge society

Documents and knowledge base are not the only places where knowledge is stored, but it is increasingly part of organisational processes and culture of the organisation.

Nowadays, since we live in the information society, information occupies a very important position in the business environment and in the private lives of every person as well. From this aspect it is not wrong to conclude that information is base from which knowledge is created.

New values can be described as four major steps in the development of the knowledge economy (Oslić, 2009):

- Information is becoming an important resource, and information and communication technology becomes basic structure
- Acceleration of the business and shortening production and business cycles
- increasing the importance of intangible resources, where the demand side is starting to have dominance, as customers and end users are beginning to impose business terms and conditions
- Development of infrastructure network economy

## KM in business domain

The greatest value of the company today makes intangible part, but it is not enough to possess only intangible assets and to be aware of its value and potential to successfully operate companies. Good management is the foundation without

which certain company potential will never become a value. It is necessary to know in what way and at what pace to convert intellectual capital into the desired value. In this case the sooner the better, because on this way the company becomes more efficient. From this aspect it is necessary to harmonise the dynamics of intellectual capital to the dynamics of the market.

To achieve a satisfactory level of KM in the domain of business, it is necessary to implement certain organisational adjustments, and to apply adequate information technology solution. Organisational adjustment is necessary to enable to maintain the level of KM. Such organisational structure involves the creation of the organisation divided along functional domains. This leads to the creation of a specific group of employees who have the same or very similar function. In this case it is easier to take advantage of the knowledge as well as manage and protect knowledge. Certain processes exist to reveal this knowledge and to convert them from implicit to explicit. The spread of knowledge in such an organisation is of great importance in order to reduce unnecessary costs of the not exploiting existing knowledge.

Each enterprise tends to be unique and options for managing knowledge are legion. Furthermore, since KM still is relatively new, the availability of standardised or off-the-shelf approaches is limited. Consequently, customised approaches are often devised to provide the enterprise with the best and most applicable solutions and this adds to the complexity. The consequence is that customised approaches are often devised to provide the enterprise with the best and most applicable solutions and this adds to the complexity. From a managerial perspective systematic KM comprises four areas of emphasis. They focus on: 1. Top-down monitoring and facilitation of knowledge-related activities; 2. Creation and maintenance of knowledge infrastructure; 3. Renewing, organising, and transforming knowledge assets; and 4. Leveraging (using) knowledge assets to realise their value. (Wiig, 1997)

Good management is the one who will beside organisational changes, show by its own example how to transmit and share knowledge. Appropriate information technology is essential not only to implement process of KM but maintain them as well. It is necessary to develop a KM system that is based on the use of information technology. Such system consists of (Bosilj Vukšić, 1999):

- Knowledge repositories, which contain large amount always up to date information stored in different formats (text, images, documents, etc.)
- IT team and KM team, which consists of the people who manage information technology (e.g. programmers), and people who know how to recognise the knowledge of the company (Chief Knowledge Officer, Knowledge Manager...)
- Means and people who have the knowledge,
- Channels for the transfer of knowledge are used to enable employees of the company to approach the stored knowledge (intranet, extranet, Internet, workshops, seminars...).

## Conclusion

Why Is KM Important Today? The major business drivers behind today's increased interest and application of KM lie in four key areas (Dalkir, 2011):

1. Globalisation of business Organisations today are more global — multisite, multilingual, and multicultural in nature.
2. Leaner organisations; We are doing more and we are doing it faster, but we also need to work smarter as knowledge workers — increased pace and workload.



3. Corporate amnesia; We are more mobile as a workforce, which creates problems of knowledge continuity for the organisation, and places continuous learning demands on the knowledge worker — we no longer expect to work for the same organisation for our entire career.

4. Technological advances; We are more connected — information technology advances have made connectivity not only ubiquitous but has radically changed expectations: we are expected to be on at all times and the turnaround time in responding is now measured in minutes, not weeks.

Work environment today is very complex and requires not only constant learning but fast reaction to the changing environment as well. These circumstances results that repetitive work should be supported with information and communication technology solutions since the time for the reaction is very limited. In this complex, information overloaded work environment KM can be helpful. But information overload is something what can be easily recognised; much more serious is the complexity of KM which can be recognised through its multidisciplinary nature. As such, KM is perhaps best categorised as a science of complexity. KM must also deal with the yet to be articulated or tacit knowledge. To further complicate matters, we may not even be aware of all the tacit knowledge that exists — we may not know that we don't know. (Wiig, 1997)

The focus of intellectual capital management (ICM), on the other hand, is on those pieces of knowledge that are of business value to the organisation — referred to as intellectual capital or assets, organised knowledge that can be used to produce wealth. (Wiig, 1997)

The most knowledgeable employees often leave first. In addition, the selective or value-based knowledge management approach should be a three-tiered one, that is, it should also be applied to three organisational levels: the individual, the group or community, and the organisation itself. (Kimiz, 2006)

In the first generation of KM the focus was on containers. It should be illustrated with the dilemma exemplified by the much quoted phrase "if only we knew what we know" and was the generation devoted to finding the information that had been buried in the organisation. The second generation was focused on the people; this could be phrased as "if only we knew who knows about". We are entering the third generation of knowledge management, one devoted to context, narrative, and content management (Dalkir, 2011).

Differences between traditional information management and KM can be detected in consist of collaborative learning, the transformation of tacit knowledge into explicit forms, and the documentation of best practices (and presumably their counterpart, lessons learned). The phrase "connecting people to content and connecting people to people" to highlight the addition of non-document-based resources that play a critical role in KM. (McQuary, 2016)

Knowledge management provides benefits to individual employees, to communities of practice, and to the organisation itself, and the future of KM lies in better integration into the common business processes, a concentration on human-organisation-interface and a better match of IT-aspects to human factors. (Scholl, 2004)

## References

1. Bosilj Vukšić V. (1999), "Upravljanje znanjem" (Knowledge Management), Računovodstvo i financije, 45 (1999), 11, pp.100
2. Dalkir, K. (2006), "Knowledge management in theory and practice", Elsevier Butterworth-Heinemann, 2006.

3. Dalkir, K. (2011), "Knowledge management in theory and practice", MIT Press.
4. Kovačić, M. (2004), "Potpuna dominacija ekonomije znanja" ("Total Domination of Knowledge Economy"), Profit, 4 (2004), 27, pp. 55
5. Matijević, N. (2006), "Dijeljenje znanja i tehnologija" ("Share of Knowledge and Technologies"), Infotrend, 144, pp. 5
6. McQuary, J., Hester J. (2011), "The Future of Knowledge Management, a Vision for 2020", available at: <https://www.apqc.org/sites/default/files/files/Hester,%20Jeff%20&%20McQuary,%20John%20-%20Fluor.pdf> (05/05/2016)
7. OECD (2011), "New project, New sources of growth: intangible assets 2011", available at: <https://www.oecd.org/sti/inno/46349020.pdf>, pp 1. (05/05/2016)
8. Oslić I., (2009), "Neke predrasude o upravljanju znanjem" ("Some Prejudices against KM"). Manager.hr, available at: <http://www.manager.hr/naslovnica/item/neke-predrasude-o-upravljanju-znanjem>, (05/05/2016)
9. Scholl W., König Ch., Meyer B., Hesig P. (2004), "The future of knowledge management: an international Delphi study", Journal of knowledge management, Vol. 8 No.2. 2004 pp 19-35, Emerald group, available at: <http://www.emeraldinsight.com/doi/full/10.1108/13673270410529082> (07/05/2016)
10. Spremić, M. (2001), "Upravljanje znanjem od teoretskog modela do praktičnog pristupa" ("KM from theoretical model to practical approach"), Računovodstvo, revizija i financije), 11(9), pp. 129-130
11. Vidović, S. "Upravljanje znanjem" ("Knowledge Management"), Infotrend, 107, pp. 44-46
12. Thomson C. (2014), "How Uber's \$40 billion could become a problem", CNBC, available at: <http://www.cnbc.com/2014/12/05/how-ubers-40-billion-could-become-a-problem.html> (30/04/2016)
13. Wiig, K.M. (1997), "KM Where Did It Come From -- and Where Will It Go?", Journal of Expert Systems with Applications, Vol. 13, No. 1, pp 1-14.

## About the authors

Ivan Strugar is a Professor at the Department of Informatics at the Faculty of Economics and Business - Zagreb. He graduated at the Faculty of Economics and Business – Zagreb, where he received his PhD degree in Social Sciences, Humanities and Theology in the field of Economics in 1997. He is lecturer at the Faculty of Economics teaching information technology courses at undergraduate, graduate, post - graduate and doctoral level at the various Universities in Croatia, Slovenia and Bosnia and Herzegovina. His interests include business information systems application in accounting, banking and tourism, cloud computing, collaboration and document management systems, Web, intranet and e-learning development and application. Author can be contacted at [istrugar@efzg.hr](mailto:istrugar@efzg.hr).

Davor Fakleš currently works at Ericsson Nikola Tesla (ETK) as On Site Solution Engineer. He graduated at the Faculty of Transport and Traffic Sciences – Zagreb, where he received his BSc degree in the area of Telecommunication in 2005. Continued post - graduate study at the Faculty of Economics and Business – Zagreb, and received Univ. spec. oec. degree within area of Informatics Management in 2012. As engineer in ETK he's familiar with most of the telecommunication products, solutions and processes with emphasis on project documentation. Aside from professional occupancy, his interests include collaboration and document management systems, e-business, business process management, Web, intranet and e-learning application, project management. Author can be contacted at [davor.fakles@ericsson.com](mailto:davor.fakles@ericsson.com).