Summaries

Digital Division of Knowledge in University Practice

(Digitale Wissensteilung in der universitären Praxis)

Peter Mambrey

This contribution shows practical experiences with collaborative systems, performed in the environment of universities. Aims are the use of digital support and the tightened network between students and lecturers. Cooperative platforms are helpful for the amendment of a synchronic and synchronic communication in seminars. The system was tested for several years as a socio-technical approach. Collaborative and cooperative learning growth up more and more to be a matter of course. Motivation is important for the necessary group processes. Results of the realized project and the interaction between digital knowledge division, technology, social practice, and acquisition of innovation are presented.

Documentation of Didactically Knowledge in Universities

(Dokumentation didaktischen Wissens in der Hochschule)

Rose Vogel und Sven Wippermann

Under educational aspects, in universities knowledge can be seen as a precious resource. Especially in the context with intelligent use of multimedia the quality of higher education depends not only on knowledge about facts but also on the competent use of information media. Teachers have to use modern didactic concepts with interactive arrangements of teaching and learning. This has changed also the educational landscape in universities. Adequate courseware has to be created on the basis of digital equipment. Projects like the Virtual University and the „Virtualisierung im Bildungsbereich“ (Virtualisation in Education) has brought some progress in last five years. Integration of such innovative concepts into the existing disciplines was tested, and also documented by a special description language under use of „Didactic Design Patterns“. It is helpful for necessary abstractions and simultaneously precise contextually descriptive arrangements. Under the use of best practice and defined aims the achieved know-how can be made available.

Knowledge Management in Economy and Sciences

(Wissensmanagement in Wirtschaft und Wissenschaft)

Wladimir Bodrow und Klaus Fuchs-Kittowski

In comparison economical and scientific knowledge shows some similarities in knowledge management. Fundamentally sciences are highly international and interdisciplinary oriented, as well as more and more global acting enterprises. They have to launch new products permanently with innovative market strategies. Doing this, they need faster and better controlled information channels. Knowledge management is challenged by a growing complex situations, which can be observed in the diversification and distribution of knowledge, that can be understood as an ocean of knowledge with uncountable islands of knowledge. It seems to be necessary to find better orientation in this highly distributed knowledge and a controlling system for the explosive evolution of knowledge. There are some similarities between Nonaka and Takeuchi's spiral of knowledge in acquisition, organization, networking, development and archiving of knowledge in economy and science.

Knowledge Based Systems

(Wissensbasierte Systeme)

Erhard Nullmeier

All systems, products, common articles or instruments are based on knowledge in so far they are knowledge based systems. Karl Marx thought that labour becomes it's value only in its 'coagulated' state. In contrast some people believe that knowledge is incorporated in codified signs. It may be also an essential part of libraries. For instance in content maps knowledge can be stored by semantic similarities. In so far it was repeatedly tried to show the similarities between such semantic networks and psychological models about human thinking. In such an associative thinking there are some hidden dangers. Not withstanding, in the AWAKE-System it is tried to use the knowledge of experts for heterogeneous expert communities by a ontology map. The spiral of knowledge can be understood as an interaction between implicit and explicit knowledge. But we have to ask is this a common rule?

Knowledge Management in Sciences

(Wissensmanagement in der Wissenschaft)

Matthias Kölbel

This article gives an overview over the author's Ph.D. thesis on knowledge management in science. The German research system as a whole is analysed according to Gilbert Probst's building blocks of any knowledge management – from the setting of knowledge goals over steering the knowledge production up to storing and reviewing of knowledge. In modern societies, science is the only way to detect future challenges – e.g. climate change – early enough and an important means to provide society with profound counter-strategies. Therefore, the question is posed whether Germany's research system is well prepared for fulfilling this task. The answer is negative.

Bibliotheken für die Zukunft 1945-1965

(Libraries of the Future -1945-1965)

Jay Hauben:

Questions from Vannevar Bush, John Kemeny and JCR Licklider.
This title goes back to the book from Licklider in 1965. Throughout history thinkers and scholars have lamented that there is not enough time to read everything of value. The real problem is not the volume of valuable scholarship and recorded thought and reasoning. The historic problem for scientists and scholars has been selecting and gathering the relevant material and processing it in their own brains to yield new knowledge. The goal is to contribute new insights to the body of knowledge, to enhance what we have to draw on and what gets passed on from generation to generation in addition to biologically inherited genetic information.

A grand vision emerged in the US after the Second World War. New human-machine knowledge management systems would be developed to help researchers consult more of the corpus of all recorded knowledge. Such systems would increase the usefulness of the corpus and accelerate the making of new contributions to it.

The Part of Knowledge in Libraries.

(Der Anteil an Wissen in Bibliotheken)

Walther Umstätter

In 1963 the amount of information was estimated at first time with1013 Bit. This was a very rough assessment including two errors. On one hand it regarded only textual parts of the books and neglected all pictures, tables etc., and on the other hand it ignored the great amount of redundancy in such a library. The question about the amount of knowledge in such a library, in the published world, in human brains or in the genomes of animals and plants is of high importance, if we want to understand the difference between information and knowledge management. In this context it is remarkable, that knowledge is in some areas a very effective compression of information, because it is not only self-organizing, it is also self-reproductive. That means, that we can have a very small basis of knowledge for millions of explanations. That is the cause, that measurement of knowledge is not based on a linear scale but on an exponential scale.

Inhaltsverzeichnis

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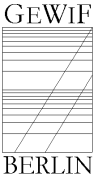

Klaus Fuchs-Kittowski,
Walther Umstätter
Roland Wagner-Döbler (Hrsg.)

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