

ABOUT ONE PROBLEM OF THE E-EDUCATION

Krassimir Markov

Abstract: *The Knowledge Markets are special kind of payable information exchange. At the (electronic) knowledge markets one can buy only the knowledge information (e-) objects, but not the knowledge itself. The need of specialized (e-) education rules and standards as well as the need of laws for corresponded responsibility are pointed out in the paper.*

Keywords: *Knowledge Market, Payable (e-) Education*

Introduction

The COVID-19 pandemy caused the new grow of the on-line education. In many cases, it was the only possible solution with serious positive impact on the society. In the same time, some problems were detected. One of them is discussed in this paper.

Before 1994, the Internet was in essence a "free" medium, characterized by an open sharing of information, without regard to the commercial possibilities of digital publication. The development of the graphical Web browser, combined with the steady increase in access speed, produced a much wider interest in the medium, expanding the user base far beyond the original circle of academics and hobbyists. The first commercial web sites and "dot.com" companies appeared not long afterward, though many lacked (and still lack) viable business models for making money online. In the late 1990s, the most common approach was "Let's just get online now and we'll figure the money stuff out later". Since the spring 2001 downturn in technology stocks, the level of interest among commercial enterprises

for all things digital has become substantially cooler, and many companies have retreated to a more conservative position, either scaling back or canceling their online ventures entirely [NLC, 2004].

For many print publishers thinking about expanding into digital publishing, the current "wait and see" atmosphere comes as something of a relief. Selling books is a difficult business at the best of times; adding the expense of producing simultaneous digital editions without the presence of any clear solutions for the problems surrounding rights and licensing and secure distribution of digital publications is prohibitive for many publishers. On the other hand, some publishers have found that capitalizing on the general aura of excitement surrounding new technology by producing digital publications on a limited scale has boosted the sale of their print titles.

For other types of publishers, though, commercial success isn't an issue. Many individual writers, small magazines, specialized small presses, non-profit organizations and government departments have found the digital realm to be ideally suited for their purposes. Digital publications can be produced and circulated relatively inexpensively, and can reach a readership far wider than small-scale print publications. And beyond the selfish notion of "publicity", many publishers see the process of creating broader access to texts of all sorts as a public good [NLC, 2004].

The development of new training structures should take into account features of transition to a new stage of development of the society. Education in the global information society will be a direct successor of the already existing educational forms and structures, and at the same time, it dialectically will change the forms and contents of the working patterns of training [Markov et al, 2000], [Ivanova et al, 2005].

From customers' point of view, it is difficult to discover what really will be received if one will buy an (e-) education. Many times, the title and announcement of the courses are not equivalent to their content, but the customers could not claim the damages.

This paper is aimed to outline this problem. The main characteristics of the information markets and the knowledge markets are presented. The payable (e-) education is discussed and the need of corresponded rules and laws for claiming the damages caused by payable (e-) education is substantiated.

The Information Market

The information society does not assume compulsory usage of the information services by the part or all inhabitants of given territory. One very important feature thus is emphasized: everyone will need diverse and qualitative (from his point of view) information, but also he will not be able to receive all of the necessary information. The enterprising experts will accumulate certain kinds of the information and will provide the existence through favorable to them information exchange with the members of the society. Thus, in one or other form, they will carry out *payable information service (granting of information services for some income)* [Ivanova et al, 2001]. This is the background of the Information Market.

The payable information exchange and services regulated by the corresponded laws and norms as well as by the government protection of the rights of the participants (members) of this kind of social interactions form the **Information Market**.

So, at the centre of discussion, we have discovered a simple true: *in the information society the payable information exchange and services will dominate over all other market activities*. In other words, the Information Market dominates over all other types of markets of the information society. Of course, the electronic education pays significant role at the scene of the Information Market.

V.P. Gladun correctly remarks that the concept “knowledge” does not have common meaning, especially after beginning of it’s using in the technical lexicon in 70-ies years of the last century. Usually, when we talk about the human knowledge we envisage all information one has in his mind. Another understanding sets the “knowledge” against the “data”. We talk about data when we are solving any problem

or are making logical inference. Usually the concrete values of the given quantities are used as data as well as the descriptions of the objects and interconnections between objects, situations, events, etc. During decision making or logical inference we operate with data involving some other information like descriptions of the solving methods, rules for inference of the corollaries, models of the actions from which the decision plan is formed, strategies for creating decision plans, and general characteristics of the objects, situations, and events. In accordance with this understanding, the "knowledge" is information about processes of decision making, logical inference, regularities, etc., which applying to the data creates any new information [Gladun, 1994].

The usual understanding of the verb "*to know*" is: "to have in mind as the result of experience or of being informed, or because one has learned"; "to have personal experience of smt." etc. The concept "*knowledge*" commonly is connected to concepts "understanding" and "familiarity gained by experience; range of information" [Hornby et al, 1987] or "organized body of information" [Hawkins, 1982].

From point of view of the General Information Theory, *the knowledge is a structured or organized body of information models, i.e. the knowledge is information model, which concerns a set of information models and interconnections between them* [Markov et al, 2006].

In accordance with this the information objects, which contain such information models are called "***knowledge information objects***".

The Knowledge Market

The growth of the societies shows that the knowledge information objects become important and necessary articles of trade. The open social environment and the market attitudes of the society lead to arising of the knowledge customers and knowledge sellers, which step-by-step form the "**Knowledge Markets**" [Markov et al, 2002].

As the other markets, the Knowledge Market is the organized aggregate of participants, who operate according to common rules and principles. The knowledge market structure is formed by a combination of mutually-connected elements with simultaneously shared joint resources.

The staple commodities of the knowledge market are the knowledge information objects.

Basing on the analysis of the present approaches of collecting, processing, storing and transferring of the knowledge, and taking into account the open knowledge environment's basic characteristics, we can build a generalized scheme of the knowledge market, which reflects the information interactions and connections between the knowledge market's participants.

The first task in analyzing the knowledge market is clarifying its basic components and the interactions between them. The knowledge market structure is formed by a combination of mutually-connected elements, which work in the simultaneously sharing joint resources.

The Payable (e-) Education

In 1990 the US National Science Teachers Association (NSTA) published "Criteria for Applying Distance Learning to Science Education" as an NSTA Position Statement [NSTA, 1990]. In this statement, the terms "distance learning" and "distance education" interchangeably apply to schemes where the learner and the source of instruction are in different locations.

Distance learning has considerable history in the education. For decades, correspondence courses have linked sources of instruction to remote individual learners through exchange of printed materials by mail. Also, radio and television have been used for a variety of distance learning schemes involving virtually all disciplines. Within science education, an early example of distance learning involved

delivery of primary instruction for high school physics in the form of 16 mm films which were mailed to be shown daily in classrooms. Later, but before communications satellites were highly developed, another distance learning project had televised science instruction beamed to classrooms from a high-flying airplane. Such early forms of distance learning were limited by a low degree of interaction between learners and sources of instruction.

Recently, a variety of distance learning schemes have arisen that use electronic ways of linking the learner and the source of instruction with increased interaction between them. For the purpose of this position statement - to ensure high quality when distance learning is applied to science education - the definition of distance learning rendered by the U.S. Department of Education is adopted:

"The application of telecommunications and electronic devices which enable students and learners to receive instruction that originates from some distant location. Typically, the learner is given the capacity to interact with the instructor or program directly and given the opportunity to meet with the instructor on a periodic basis."

Rapid advances in communications technology are causing a dramatic increase in applications of distance learning to all levels of science education. Today, students from elementary school through college have high probability of encountering some form of distance learning as a primary or supplementary mode of instruction in science sometime during their school years. Also, applications of distance learning to the continuing education of science teachers are increasing. It is likely that distance learning directed toward science education will continue to expand and evolve [NSTA, 1990].

Schar and Krueger define computer aided learning (CAL) as "different forms of computer-mediated teaching methods in which the student is paired with a computer as virtual teacher". Students can benefit greatly from information presented through different types of media – this could increase their attention, and stimulate them to

think about subject matter in different ways. On the other hand, CAL enables learning at home or at workplace, which saves time and efforts [Schar and Krueger, 2000].

The global systems give an opportunity for each state to use information service for an effective utilization of personnel potential of qualified teachers with the help of remote connection. Besides, it is quite possible in conditions of the global information society to fill up information resources in libraries and local centers of information service through remote access to global cultural and science centers [Markov et al, 1998].

Examination of the market demand for various types of courses and training modules is a key criterion for effectiveness and high efficiency. Market trends, industry requirements, and companies training needs have to be examined on a regular basis.

The usual talk is that in the payable (e-) education one can buy knowledge. But, from our point of view, this is not so correct.

In the beginning of the XX-th century the great Bulgarian poet Pencho Slaveikov wrote: "The speaker doesn't deliver his thought to the listener, but his sounds and performances provoke the thought of the listener. Between them performs a process like lighting the candle, where the flame of the first candle is not transmitted to another flame, but only cause it."

If one buys a candle what does he really buy – the "wax" or the "light" of the candle? The light is not for sale in the store... But one really may see the example how the candle works and how it may be used. Based on this he may decide to buy the candle. At the end, if the candle could not be lighted the customer may claim to receive his money back. This possibility is very important and it is supported by the laws.

Let consider an example. When an architect develops any constructive plan for future building, he creates a concrete “information object”. Of course, he will sell this plan. This is a transaction in the area of the Information Market. Another question is from where the architect has received the skills to prepare such plans. It is easy to answer – he has studied hardly for many years and received knowledge is the base for his business. So, we see that the (e-) textbooks as well as the (e-) courses are not concrete information for building concrete house, but they contain the information needed for creating such plans. The courses written by the lecturers in the architectural academy are special kind of “information objects”, which contain special generalized information models. They are “knowledge information objects” which have been sold to the students.

So, we need to take into consideration the difference between responsibility of the architect and the lecturer. If the building collapses the first who will be responsible is the architect, but never the lecturer!

This way, we came to the main problem we need to point – in payable (e-) education the authors and publishers as well as the lectures and tutors are not responsible for what they sold to the customers.

The employees (learners) could not claim the damages caused by the payable (e-) education but they are be responsible for the damages they have caused to the employers!

Conclusion

From customers' point of view, it is difficult to discover what really will be received if one will buy an (e-) education. Many times, the title and announcement of the courses are not equivalent to their content, but the customers could not claim the damages.

The payable (e-) education needs to be regulated both by specialized international laws and rules and by social activity co-ordinated by government and non-government organizations.

Let point that the main goal of the Knowledge Markets is to serve corresponded forms of long live and (as a rule) distance education. It is very important for the society to support and control the correctness of knowledge which is aimed to be sold.

The "freedom of information" may be dangerous.

Acknowledgement

This work is partially financed by project **ITHEA-XXI** of the Institute of Information Theories and Applications FOI ITHEA.

References

- [Gladun, 1994] Gladun V.P. Processes of knowledge discovery. Sofia, Pedagog 6, 1994. ISBN: 954-8249-06-5. (in Russian).
- [Hawkins, 1982] Hawkins J.M. The Oxford Paperback Dictionary. Oxford University Press, 1982, ISBN: 0-19-281209-2.
- [Hornby et al, 1987] Hornby A.S., A.P. Cowie, A.C. Gimson. Oxford Advanced Learner's Dictionary. Oxford University Press, 1987, ISBN:0-19-431106-6.
- [Ivanova et al, 2001] Ivanova N., K. Ivanova, K. Markov, A. Danilov, K. Boikatchev. The Open Education Environment on the Threshold of the Global Information Society. IJ ITA, 2001, Vol.8, No.1 pp.3-12. ISSN: 1310-0513.
- [Ivanova et al, 2005] Ivanova Kr., N. Ivanova, A. Danilov, I. Mitov, Kr. Markov. Basic Interactions between Members of the Knowledge Market. Proc. of the International Conference "Knowledge-Dialogue-Solution", 2005, Varna, Bulgaria, Vol.2, pp. 638-648.FOI-Commerce, Sofia, 2005, ISBN: 954-16-0033-6.
- [Markov et al, 1998] Markov Kr., Kr. Ivanova, I. Mitov. An approach to the information service of the education. NITE-98, AGTU, Astrakhan, 1998, pp. 51-56. (In Russian).
- [Markov et al, 2000] Markov Kr., Kr. Ivanova, I. Mitov. The Information Society. ITA-2000, Bulgaria, Varna, 2000
- [Markov et al, 2002] Markov Kr., Kr. Ivanova, I. Mitov, N. Ivanova, A. Danilov, K. Boikatchev. Basic Structure of the Knowledge Market. IJ ITA, 2002, Vol.9, No.4, pp.123-134. ISSN: 1310-0513.
- [Markov et al, 2006] Markov Kr., Kr. Ivanova, I. Mitov. The Staple Commodities of the Knowledge Market. IJ ITA, 2006, Vol.13, No.1, pp.11-18. ISSN: 1310-0513.

[NLC, 2004] National Library of Canada. Electronic Publishing: Guide to Best Practices for Canadian Publishers. National Library of Canada, Ottawa, 2001. Updated: 2004. <http://www.nlc-bnc.ca/9/13/index-e.html> , <http://www.collectionscanada.ca/obj/p13/f2/01-e.pdf>

[NSTA, 1990] US National Science Teachers Association. Criteria for Applying Distance Learning to Science Education. An NSTA Position Statement. 1990.

[Schar and Krueger, 2000] Schar S., H. Krueger. Using New Learning Technologies with Multimedia. IEEE MultiMedia, July-September, 2000. pp 40-51.

Authors' Information



Krassimir Markov, Prof. Dr. – Director of the ITHEA Institute of Information Theories and Applications; P.O. Box: 775, Sofia-1090, Bulgaria; e-mail: markov@ithea.org

Major Fields of Scientific Research: General theoretical information research, Multi-dimensional information systems