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PARADIGM OF SCIENCE ABOUT LOGISTICS AND STUDYING

RYSZARD BARCIK¹, MARCIN JAKUBIEC²

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Abstract: In an article authors make an attempt of comparison a science about logistics and studying. The following article defines a process of studying, conditions of learning by universities and simultaneously mixes above-mentioned scopes' problems concerning logistics. What and how deeply can we talk about a paradigm of science about logistics and studying? The authors point out exemplary areas which support this connection, but for every interested, leaving the above-mentioned question open, suggest one's own judge of this case.

1 INTRODUCTION

Universities which lead researches and which have Ph.D. rights have been evaluating within last two centuries as the effect of industry revolution, except traditional employers for the graduates which were church, education sector, judiciary, medicine and administration, new ones appeared like industry and business. Rapid growth and popularization of studies in the first half of twenty century brought to numerous controversies created by pressures those new employers called up to meet their particular needs, as well as growing influence of the state on universities, which mainly are public institutions. The state taking its responsibility for ensuring conditions of education of its citizens must designate much higher money to maintain universities and financing of researches. It is not a surprise that the state wants to have administrative control over spending of that money and directions of universities' development, from one side. From the other side, this is very close route to restrict a freedom of universities in creating of studies' programs, taking on of academic staff and in restriction of researches' freedom, what means to diminish their academic independence. The radical example of restriction was used in totalitarian systems.

It is worth to mention that necessity of preservation by universities wide scope of academic autonomy comes from a fact, that they are responsible to society, not to governmental administration, politicians or sponsors for development and making accessible knowledge forming as the effect of true's searching and for people education who could be able to complete this knowledge, use it and pass on next generation.

For a reason they cannot take under consideration temporary reasons which are usually attractive for politicians, but must go much wider in future perspective. They constitute one of necessary, timeless element of social structure, which by creating of proper atmosphere and value system connecting with scientific knowledge, favoring development of units deciding about civilization and cultural future of society.

Universities meet to society complementary function which in church's role is connected with preservation and promotion of values relating to moral rules. First universities grew in close cooperation with church, although scholastic order in which religion was treated as a source of

¹ **Ryszard Barcik**, Rector, Head of Management Department, University of Bielsko-Biala, Ul. Willowa 2, 43-309 Bielsko-Biala, phone +48 33 827-92-30, e-mail rbarcik@ath.eu

² **Marcin Jakubiec**, Assistant, Director of Rector Office, University of Bielsko-Biala, Ul. Willowa 2, 43-309 Bielsko-Biala, phone +48 33 827-92-31, e-mail m.jakubiec@ath.eu

knowledge about the world brought to its conflict with scientific cognition, which symbol was Galileusz case (in 1992 church admitted that in Galileusz case mistake was made). That conflict had very negative consequences for church and science. It was going deeper with creation of eighteenth century scientific opinion which tried to oppose rational knowledge connected with science (experimental cognition) to intuitional knowledge coming from faith. It led to an outlook and later to political doctrine that faith could be replaced by science, church by free university, what constituted inversion of medieval scholastic order. Now we know that those both orders are wrong because human brain uses independently and non-conflictingly intuitional and rational knowledge and one of them cannot replace the second one. This is caused by timeless two questions of human being concerning: what is the world? and why was it created? which cannot find an answer in the framework of the same type of consciousness.

From social role of universities comes out that they have two main tasks which must harmonically meet: first of them is education leading to understanding of knowledge's context and promoting of intellectual values, second is training thanks to which practical skills are achieving. A goal of modern university is creating for students conditions to gather fundamentals of knowledge and skills connected with studies' domain, communication techniques, forming of intellectual formation and educating difficult art of choices' making.

Whole studying infrastructure is responsible for ensuring students proper conditions of moving (efficiently, quickly, on time, purposely). Responsibility for those conditions moves not only towards universities, but also towards the state and local authorities. A need of goods' transportation has been existing for long time and now it develops in context of people transportation.

Present logistics systems are created in diverse areas of social life. Matching logistics system with above mentioned conditions we can talk about city logistics, which is the effect of decentralization of logistics systems management.

City logistics is a tool of problems' solving of high urbanized scopes which are cities and metropolises. It has macro-economical dimension, quite concentrated, exact defined and restricted to specific micro-regions. City logistics is subordinated to the same rules as logistics has. Its fundamentals are system approach and coming from it a rule of looking throw wholeness's prism, analysis of costs' dependencies, searching of synergy effects, rules of activities' coordination and orientation on flows. City logistics means the same processes as logistics: transportation, warehousing, information processes and customer service. Those processes get new meaning, new dimension, have separated specificity [2].

For realization above mentioned goals universities base their acts on two fundamental rules, differentiating them from other types of schools.

First of them concerns relation between professor and student which is different from known from high schools relations between teacher and pupil. Professors, in reality, not to learn students (they should not do it). Their role is to be a guide in studying of a problem, in coming into the sense of a thing, help in making a discipline wider which studies concerns. This difference between high school and university is the effect that universities concentrate on developing of self-learning ability, creative thinking and problems' solving. Characterizing specific and creative bind between professors and students at university someone said many years ago that when a student trusts a professor he does well, because that trust helps him to understand studying domain, which a professor knows, different to a student. Achievement of cognition is not set on professor's trust. A student can achieve knowledge or not, but if he does it this is the result of fact that he caught true of this what he knows. Studies imposes necessity to active not passive attitude to studying domain and its program is based on risk establishment that who studies he wants to get knowledge.

The second rule concerns direct touch (contact) by students with science. For ensuring efficiency and authenticity of that contact, students get academic knowledge from first hand, what means from people who create it. A mechanism of modern university ties in that students getting knowledge simultaneously attend in process of its creating. This requires good relations between professors and students. It is also a kind of protection for university from getting stiff, because permanent and open verification of process of true's reaching causes that a main criterion of verification both professor and student is a level and reliability of their knowledge.

Let skip to studying process. From that what was written a conclusion could be made that taking studies comes from necessity of change an attitude by student to learning (different in high school). In high school learning was shown as closed, ordered temple, in front of which a cap must be

taken off.

Studying you can notice that learning thanks to its method constitutes ordered and objective construction, but this construction is not closed and finished and will never be finished. Moreover, also thanks to that method important doubts appear that all elements of it were built properly. Studies lets make a conclusion that scientific theories are not literal descriptions of surrounding world, but only deduced systems which purpose is cleaning and predicting relations between observed reasons and their effects and expressing those relations by models, hypothesis or theories, noted down by mathematical language. Those systems subordinate permanent evolution. However, nature is cognizable (otherwise we cannot make science) an area of this what stays to discover is getting wider commonly with new discoveries. They originate on line separating this what is cognized from unknown and unclear, but this line according to geometry rules gets longer commonly with getting wider an area of cognition. We have a paradox: the more discovered, the more stays to discover. Students who want to meet good and bad sides of scientific work do not have to be afraid of lack of areas to research.

The same situation is in logistics area. With help of mathematical language, models and hypothesis can create and form basic logistical categories such as: management of materials' flow, sources, stores, orders, warehouse, transportation, etc. Tools of discovering, creating, forming of new logistical objects are used also in designing of complex logistics systems, informatics systems in logistics, as well as in predicting demand and market analysis. That paradox can endure also in logistics. The more discovered, the more stays to discover.

For studying proper skill of critical doubt should have been made. Fundamental rule of scientific method relies on accepting as certain only this what comes from undoubted obviousness, what does not leave doubts and could be checked by experiments. Everything what is not obvious or what is obvious should be perceived only as hypothesis, which ought to be under methodological critique. It does not mean that what is not a science today, tomorrow it would not be it, because thanks to development of theories and experimental technique it will surrender to rigors of scientific method. History gives not one example. This road seems to be monotonous and discouraging, but thanks to it science constitutes one of few human's adventures which succeed.

We have to remember that knowledge gaining during studies does not mean a whole reflection of reality, because is adequate only to present stage of cognition and present state of practice. Many concepts, rules or methods recognized presently, in a few years will replace by new ones, better, letting use higher degree of generalization, much detailed approach or better meeting of technique's recruitments. It is the same in case of logistics systems. How they will be organized and managed in a few years at this moment is difficult to predict, but fact that they will evaluate and transform to actual conditions is much than sure. It is assessed that at the beginning of nineteenth century total source of knowledge was growing twice every fifty years, in the middle of twentieth century every twenty years and nowadays is growing within decade (for example in micro-electronics every three years). In the nearest future knowledge gained during studies will be useful and people who decided to take up science have a duty to unfinished learning. Intellectual efficiency gained during studies is a tool which let get new knowledge. Coming back to logistics, it is worth to look at shipping-transportation market. That what was a few years ago impossible to transport, today is not a problem. Shipping companies will transport everything, for example exotic animals, blood pots and virus of bird flu.

Changeable subject of studies causes a few questions: what do you study for?, how do you study?, how do you organize your studies' program? Answers could be found in expression that in every scientific or technical discipline elements about different change's dynamics exist. Some of them located in constantly getting wider area of cognition surrender quick transformations. Basic elements also exist in which changes are slower, exist general rules with very big durability, composing a core of whole knowledge system. They also, with science development, are filling new contents. Perfect control of those basic, slowly changing elements of scientific knowledge creates a fundament on which we can build our understand of surrounding world. They constitute intellectual equipment which a university wants to bring to its students, for preparing them to creative activity in coming times, using theories, concepts and methods which professor do not know (and will not know), which will be created during professional life of students. Nobody knows what to learn students to prepare them to creative activity. Consciousness of this lies under fundamentals of present university's model in which narrow and detailed specialization is replacing by wide and loose base of fundamental knowledge and

skills.

During studies created and verified knowledge is met thanks to work of thousands of scientists and engineers. Izaak Newton described their meaning: "I could look far away, because I stood on shoulders of giants". Names some of them will repeat during lectures and useful during exams. Others will stay nameless, but it does not mean that their work was less useful. That knowledge stays summary of enormous experience, coming from scientific cognition and from growth of practical skills, being our cultural and civilization heritage, which students should take over with help of their professors, in order to make it much precious and pass it on other generations in the future.

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Review: prof. Dr. h. c. Ing. Dušan Malindžák, CSc., Technical university, Košice