

## Development of strategy for smart University

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**Abstract:** This article appears at a turning point in the evolution of society and its information and communication technologies. The author studied social development issues from different aspects: education, science, economics and management. In each of these areas emerging “smart” technologies are poised to create unprecedented impacts. MESI is the first on the way to Smart education in Russia. We are ready to share our experience.

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### Narrative

Moscow State University of Economics, Statistics and Informatics (MESI) founded in 1932 is nowadays one of the top Russian universities that combines wide experience and strong scientific traditions with innovative process of training professionals in economics, management, statistics, information technology, law and humanities. Appealing to the Russian and Moscow annual ratings, MESI is traditionally among the best educational institutions. MESI today is a venue for 100 thousands students including foreign learners from 52 countries. MESI is an innovative complex, which has a network of more than 30 regional branches located in different parts of Russia and abroad.

The new challenge for the university is integrating students into the new knowledge environment to provide them access for emerging knowledge and technologies. Meanwhile universities are actively impact on the knowledge environment. The educational technologies let the learning process go out off campus or classroom.

The smart technologies should meet the increasing public demand for the high quality educational services. The approaches to education should be completely reconsidered by both the content and learning methods, including and methods of knowledge management. The important educational task is to organize students for self-learning through the knowledge search and implementation for the professional development. A shift to the Smart Education is absolutely necessary for developing countries to take an appropriate part in the changing world.

The smart education will allow student to use ICT in the future to work effectively. The valuable competences are becoming the collaboration via Internet, the ability to work with a large set of information. The main effect is the ability to combine the efforts of a lot of people to create new knowledge.

The implementation of the principles of Smart Education on the classical approaches to the educational content development will not allow reaching the desired effect. The new type of educational resources is necessary for smart society development.

The educational paradigm is changing from the traditional model through the e-learning to the Smart Education. The role of universities is changing from the knowledge vendor or navigator through the knowledge generator to the facilitator for students self-learning. The smart education is able to provide a new university, where the set of ICT and faculty leads to an entirely new quality of the processes and outcomes of the educational, research, commercial and other university activities.

The important distinctive feature of the present stage of social development is the process of informatization. The innovative communication technologies lead to the emergence of a new world, as well as a serious reassessment of values and needs of the market. Knowledge today is a commodity with increasing demand. Now days the possessing knowledge is not enough, knowledge have to be updated constantly as well as their rate of occurrence is enormous. The amount of knowledge doubles every 72 hours. New technologies like web 2.0 influence on the increasing amount of knowledge specially in the era of the information society. These technologies become are key for delivering relevant knowledge to the students.

The first digital divide was discussed around the world few years ago. A lot of countries - such as South Korea - are far forward in its technological development, and Russia behind them is not one but at least two steps. What should be done to overcome that gap? The government of many developed countries support and promote the concept of Smart in the education development either economy and society development. The core of the Smart concept is based on three main issues:

- Mobile access. The ability to produce all kinds of services via mobile networks anywhere in the world. The services are targeted to each user individually;
- Generation of new knowledge. There is no way for any country to develop without the access to new knowledge. There is only way based on new knowledge generation as the engine of the process of modernization of the national economy;
- Smart environment design. Despite the fact that the present level of development of computer systems does not allow to talk about the creation of artificial intelligence, though some services and technological developments have reached the point where the IT environment is almost identical to the natural intelligence. The Smart environment facilitates the emergence of innovative developments and serves as one of the basic issues of Smart economy.

As is known, the first digital divide means the gap in the development of IT industry, the lack of technology, the low degree of Internet penetration, low speed Internet, low-skilled IT people, etc. The first digital gap allows assessing the situation of countries, nations, continents on the saturation of digital technology, they were mostly quantitative evaluation. There is the following relationship: countries with a large number of technologies get more advantages for development. At the present moment, Russia has overcome this gap to some extent. There are enough computers and other equipment in universities and schools, quite skilled people to work with it. What is next step to developed country?

The new aspects emerging in the second digital divide. A large number of human functions were transferred to the machinery and equipment. People had the opportunity to focus on creativity and self-development. The question arose: what new effects, new efficiencies gained by those with these new technologies and capabilities?

Let's see, we have been starting to prepare books into electronic format. What outcomes does it make for students and faculty? The philosophy of the second digital divide involves the extraction of a new effect. Information and communication technologies implementation depends on motivation and involvement of people in the use of the technological diversity. Knowledge has become open and accessible to everybody. An example of this fact is the blogs, open educational resources. People's attention can be attracted to the problem only by opening your own knowledge. In this case the discussion will arise and a new approach to the problem would be found. The active usage of new knowledge is the marker of the second digital divide. In education area it is expressing as follows. Some universities use open educational resources, others ignore them. Some create a new one open educational resource and massive open online courses (MOOC) - others protest.

Economic development in the Smart direction requires appropriate modernization of all its industries without exception.

Along with the concept of "Smart Economy" arises the concept of "Smart society". Both concepts overlap each other partly. But the second concept is more correlated the conditions in which people live. The population of the country have to be plunged into a complex Smart concept including smart universities, smart transportation system, smart government. Some developed countries for example South Korea and Ireland develop the Smart concept. Their ideas regarding the development of this concept, they reflect the relevant documents. For example, in Ireland approved document: «Building Ireland's Smart Economy».

One of the most important elements of the smart economy is smart industry. Its establishment took place in four stages. The three stages were based on the mining and manufacturing industries. These stages have led to the emergence of the fourth, when the majority of industrial processes automated and requires no human presence. These steps have generated and biggest IT giants such as Microsoft, IBM, SUN and etc, which are developing smart IT technologies. Thanks to the Smart IT technologies the rethinking of the role and place of the three stages was begun. At each stage Smart concept can be implemented in the emergence of activities such as smart agriculture, smart building, smart finance, etc.

Transformation of the industries on the way to Smart is the chain in which the transition of one industry entails the development in other activities. Now days the majority of people have been accustomed to

concepts such as e-money and e-commerce. But at the moment these innovations are already out of date, because the progress is not stop on any stage. These areas have long been developed in accordance with the concept of Smart. For example, «e-money» transformed into Smart money namely new payment systems allowing to work with the finance anywhere in the world and in individual circumstances.

Transformation affected the education area. In many countries, the concept of Smart education is already a de facto standard. What is the main idea of Smart education? To answer this question it is necessary to consider the development of approaches to education. Conventionally, it can be divided into three stages, and to consider in the context of the five visions, such as knowledge, technology, learning, faculty and business. In the past there was the only source of knowledge for students a teacher. There were no opportunities to learn everywhere. The students gained new knowledge in the classroom or in the library. The purpose of a university was in preparing human resources for industrial production.

Now, knowledge sources and tools to operate with them have changed dramatically. There is no one-way traffic on the way of knowledge transfer. The faculty and students are equal to share their knowledge to create new. In the same time thanks to new educational technology faculty can carry knowledge outside the classroom like MOOC. Business in their turn submits new demand for creativity and independent personalities.

No doubts that in the future the main knowledge stream will flow through the Internet, technology will be individually oriented and aimed at creating new knowledge. The learning process will support the knowledge sharing between lecturer and student, this time it will be two-way road and student-student. The graduate will not just be an expert in his field, he will be able to join in the business environment as a partner or owner.

Smart education is an integration of educational institutions and faculty members to carry out joint educational activities via the Internet. We are talking about a collaborative development and use of the content of co-education. An example is the project of the next decade in the European education system. One European university will have a common administration, who will accompany the students move from one high school to another. The Bologna process gives universities the opportunity to enroll students without a re-examination. Thus the Smart education system is being designed in Europe. The European University will implement a collective learning process through a common repository of training materials.

The Smart education means flexible learning in an interactive learning environment with content from around the world, is in the public domain. The key to the Smart education is the wide availability of knowledge. In turn, the purpose of smart learning is to make the learning process more effective due to the transfer of the educational process in the electronic environment. This approach will copy the knowledge of the lecturer and to provide access to anyone interested. Moreover, it will expand the boundaries of learning, not only in terms of the number of students, but also in terms of temporal and spatial factors. Education will be available everywhere anytime.

One of the conditions for the transition to smart e-learning is the movement from the fixed educational materials to design of active content. In this case, the knowledge increment is getting in the active content immediately. The knowledge should be placed in the repository equipped with the intellectual search engine. The knowledge objects should be interconnected by the metadata system. The quality of the repository should be continuously monitored through the introduction of the systems such as e-metrics and learning management system.

Smart education is a concept that involves a comprehensive modernization of all educational process including the methods and techniques used in these processes. The concept of Smart in the education area entails the emergence of technologies such as smart boards, smart screens and wireless Internet access everywhere. Each of these technologies offers a new way to design the process of developing, delivering and updating educational content. The active content is a main element of Smart education concept which allows to remove any restrictions.