

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ  
ФАКУЛЬТЕТ ІНОЗЕМНОЇ ФІЛОЛОГІЇ  
ТА СОЦІАЛЬНИХ КОМУНІКАЦІЙ**



# **СОЦІАЛЬНО-ГУМАНІТАРНІ АСПЕКТИ РОЗВИТКУ СУЧАСНОГО СУСПІЛЬСТВА**

**МАТЕРІАЛИ ВСЕУКРАЇНСЬКОЇ НАУКОВОЇ КОНФЕРЕНЦІЇ ВИКЛАДАЧІВ,  
АСПІРАНТІВ, СПІВРОБІТНИКІВ ТА СТУДЕНТІВ**

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the computer system. BCI can be used in medicine, communication, games, virtual reality, advertising, education, security and other fields. For instance, scientists use a device that produces signals similar to those which are sent when people see the colour. Transferring them into the blind persons brain allows invalids to see again.

The main challenge for today is the placement of electrodes. There are two methods: non – invasive and invasive. The first type lets read information due to a set of electrodes attached to the head, but the skull obstructs the electrical signals transmission. In other case electrodes are put directly inside the users brain or its surface, so we can get better quality and accuracy of signals. The implanted electrodes are left beneath the skull for a long time. This leads to the formation of scar tissue that blocks information. Many researchers are working hard to solve this problem.

Science has taken a step ahead, so new forms of BCI appear. BrainGate developed a wireless device for a remote control of prosthetics and devices for paralyzed people. Another technology is based on brain computer interface principles. It is called brain – to – brain interface. BBI is a “digital telepathy” and works by sending signals directly from one brain to another. One more important achievement is mechanism for half – paralyzed persons. Instead of a robotic hand it sends signals to move their own limbs bypassing damaged sections of nerves. As a result people can again interact with the environment themselves.

Thanks to the researches of BCI we can use a huge power and potential of our brain. It is a perspective technology that opens the door in advancing such areas as communication and control, smart environment and entertainment, medicine and security. Despite all benefits it is a field for further improvements and developments.

## **THEORETICAL DESCRIPTION OF PROJECT MANAGEMENT DIVERSIFICATION RESOURCES**

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Global non-linear changes, including the persistent deep economic recession in many countries in the world after Lemman Brother’s collapse in 2008 are forcing a structural change in the economy (especially, real estate development projects), including the shift from one-time aggressive (or

bubbly) capital project investments to very selective ones. While innovations are empowered by projects, mostly, innovative project solutions are not delivered out of an analytical (deductive) management framework such as traditional project management. The complex world demands project management models that can address complex problems by way of system dynamic simulation approaches and the constructivist project management theories.

Innovative component in international construction projects functioning in the countries with highly developed science (“a golden billion countries”) has been developing as a part of the national innovation program. In Ukraine there is also a national register of scientific and engineering programs covering the priority directions of science and technology development in 2002 – 2006 (The Cabinet of Ministers Directive №1716 dd 24.12.2001). According to the directive the most important programs are as follows: effective and resource-saving technologies for energy generation, conversion and usage, new technologies for construction engineering and machine-building industry[1].

The state program of the real estate development for 2003 – 2011 (The Cabinet of Ministers Directive № 1174 dd 28.07.2003) is aimed at the accelerated development of macro-technological industry with closed cycle of production and innovations introduction. The program gives way to a rapid development of new branches of industry, especially, real estate development and its adaptation to the Worldwide Trade organization rules and regulations.

For instance, Japan sees an increasing number of innovative program and project management cases that support emerging global needs of sustainability and the accelerated infrastructure development in the developing countries, such as Ukraine and others post-Soviet countries. This trend can be thought to signify the arrival of a new wave of expanding the national industrial competitiveness and economic presence by which the core value of “P2M – A Guidebook of Project and Program Management of Enterprise Innovation” is hereafter referred to as “P2M” by Japan (Project Management Association by Japan).

Implementation of reforms aimed at the creation of market economy and Ukraine’s integration into the global economy will make this country more open to the external world and sensitive to economic and political changes that are going on in the world economy. Cross-border mergers and acquisitions (M&A) have to be viewed as an important element of international economy. They are considered as a part of foreign direct

investments and have large economic effect on countries and enterprises development.

Merger activity in the Ukrainian market is growing too. Every year more and more Ukrainian companies get involved in the M&A processes. Only in 2002, according to the Antimonopoly Committee of Ukraine, 400 enterprises got approval to conduct economic concentration in various forms, including M&A. Foreign companies actively invest in buying Ukrainian firms and Ukrainian enterprises search for the opportunity to penetrate through cross-border mergers and acquisitions into the foreign market. They do not have enough experience and expertise in the field and practical knowledge related to M&A. The world accumulated practice might be extremely useful to them.

1. Sterman, John. Business dynamics : systems thinking and modeling for a complex world / John D. Sterman, 1992, 1008 P.
2. Project Management Institute. 2000. A Guide to the Project Management Body of Knowledge (PMBOK ® Guide). Project Management Institute: PA.

## **THE BASICS OF THE INTELLIGENT SYSTEM TO PREDICT THE DEGRADATION OF THE VIRTUAL MACHINES IN THE CLOUD ENVIRONMENT**

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In the modern informational society the different types of the intellectual systems take a leading position in the world. Their development can be characterized as the snowball development. A lot of scientists are studying this problem. However, some aspects of the quality of the information-extreme intellectual technologies require the further research.

In such direction, the authors analyzed the degradation of the virtual machines owing to their interference with the common physical infrastructure. As a result, the authors proposed the approaches to format the input of the mathematical description. This method is based on the cluster-analysis of the performance and resource usage rates of the virtual machines. In addition, the physical modeling of the proposed algorithms is