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Modernization of Digital Transformation in Construction

Rakhimova Gulsara

Teacher of the Department, Construction Production Technology, Samarkand State Architectural and Civil Engineering University, Uzbekistan

Abstract: The article is devoted to the current topic of the introduction and changes of new technologies in the field of construction technologies. The purpose of the article is to summarize the characteristic of the progression of digital transformation.

Keywords: building information modeling (BIM), information and communication technologies (ICT), artificial intelligence (AI), automation and robotic process automation (RPA), terrain survey, digital technology, construction, transformation, modeling, automation.

The current construction area previously operates more than a dozen technologies that are consumed in the building. And innovations in the field of building technology will only progress. In the near future, undoubtedly, we will find huge changes in technical forecasting and modular construction. The transition from traditional methods to decisions of digital control has historically formed so that information about the construction site turned and passed verbally and mainly through a paper system. The lack of organized management and misunderstanding between field and office staff often lead to delays, loss of time and money.

The emergence of computer-aided design systems (CAD), building information modeling (BIM), integration of the supply chain and mobile computing influenced large-scale modernization on the construction industry. As more and more construction companies switch to digital technologies, informative and communication technologies (ICT), artificial intelligence (AI), automation and mechanized automation of processes (RPA), business processes become a solid construction cycle. An effective digital revolution in the construction industry calls for a search for the right solution in collaboration with key parties. And technologies such as mobile applications for construction, as well as wearable devices, artificial intelligence, BIM technologies become more popular due to their practical value results in real time. Technology is becoming more and more security-oriented. Digital technology and robots change the principle of work that people carry out, or complement the course of human decision-making. For example, sensors covering the environment that prescribe noise, heat and wind at construction sites warn of a threat and gain time for emergency evacuation of builders. However, it is not easy to implement the latest technologies in construction, since the main requests for objects are following security, that is, any technology must have a regulatory framework, standardization. Each development requires a suitable design and a holistic set of works, quality control, as well as staff study.

The main advantages of digital technology prompted civilized progress and manipulate digital data in order to support, deliver, deliver and manage the announced environment. These tools connect: • the use of drones to facilitate the survey of the terrain; • artificial intelligence (AI) and machine learning; • 3D printing; • communications like e-mail; • Software, such as automated design, automated development and information modeling of buildings. Examination of objects is provided by detailed studies conducted to supplement and verify information about objects transmitted by the

client, and to evaluate objects conducted by a team of consultants. Local surveys can be carried out by members of a group of consultants or may be ordered by specialists. With the help of artificial intelligence in the construction industry, self-equipment can move in its circle outside the support of a person. This nature of the equipment will be able to analyze the permissible construction site and create 3D cards and plans based on the accumulated information. Artificial intelligence will be able to recommend engineers the best technologies for use in projects. One of the most innovative applications that have emerged in the construction industry over the past few years is information modeling of structures (BIM). This allows you to create a virtual model containing information that can contain all aspects of the construction project throughout the relevance of the building. Architects, engineers and other persons with a path to the BIM model can make corrections, restore and take into account the impact of all kinds of changes on the project in a wide range of parameters, including cost.

What are the benefits of introducing digital transformation in construction?

The proof of implementation of digital transformation delivers to the project throughout its life cycle will help institutions get rid of losses in their processes, which in many incidents can be 20-30% of throughput.

Approximately in the progressive countries of Great Britain, Singapore, USA and Scandinavia, Finland use digital technology (BIM). The adoption of digital technology in these countries is most common among architects and large contractors, while maintenance engineers, facility managers and small contractors use it less often. According to a survey of digital technology showed the rate increased to 73% in recent years than previous ones.

Digital technologies hold many functions, helping to set deadlines and budgets, as well as track work in real time. They promote more precise planning with narrower boundaries for superior project planning.

Adapting to digital transformation in the era of new construction to take full advantage of digital transformation, construction managers accordingly allow the workforce to adopt new technologies. The introduction of digital technologies in the construction industry will progress - such a market demand, where efficiency and reduction of time and costs are stopped as a priority. Consequently, construction becomes intelligent not only in computer-aided design, but also in the specific process of creating an object using robots, 3D printing, sensors, smart materials and technologies.

And finally, new technologies have a unique impact on the profits of the construction business, as they are aimed at optimizing and efficiency of all stages of the project, from engineering surveys to operation.

Construction is a thriving industry and will remain so for years to come. With population growth around the world and a really increasing demand for houses that people can live in, the formation and redevelopment of the frame, numerous companies and individuals are investing in the construction sector.

Continuous change and evolution are becoming important for such industries. Therefore, it becomes important to learn about the changes that these new technologies will bring to the industry. Thus, the construction division is doing well with new digital technologies that record positive changes.

It is possible to change a lot by switching to digital quality management. Get guaranteed quality with the latest tools to help us improve in the future.

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