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MANAGEMENT OF DIGITAL TRANSFORMATION IN THE TEXTILE INDUSTRY

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Abstract
This article examines the main aspects of digital transformation management in the textile industry, analyzes forums and seminars aimed at developing the textile industry through digital transformation. The use of Big Data analytics, the Internet of Things, artificial intelligence, robotics and automation of other innovative technologies as ways to digitalize the production of textile products is being studied. The main elements and aspects of digitalization that are used in the textile industry in the implementation of digital solutions are analyzed, and strategies for effective management of digital transformation to achieve successful results are proposed.

Keywords: digitalization, textile industry, automation, Internet of things, artificial intelligence, Big Data.

Introduction

In the modern world, digital transformation has become a key factor in the successful development of any industry. The textile industry is no exception and is also undergoing significant changes due to the introduction of digital technologies to optimize production processes, improve product quality and strengthen competitive positions in the market. The driving force behind these changes is digital transformation, which affects all aspects of the industry, from design and manufacturing to logistics and retail. Given the role of the textile industry in the global market, which amounts to more than 1 trillion US dollars, the introduction of advanced technologies such as artificial intelligence, the Internet of Things, big data and cloud computing opens up new horizons for textile companies, allowing them to increase efficiency, improve product quality and create innovative business models.

Currently, strategy, economic management and digital technologies are closely interrelated and are important components of digital business transformation. The term "digital economy" was coined by American scientist Nicholas Negroponte in 1995. The digital economy is part of the Industry 4.0 program proposed by the President of the World Economic Forum, Klaus Schwab, in 2011. Industry 4.0 represents the accelerated integration of cyber-physical systems into production processes, which makes it possible to automate a significant part of production without direct human involvement [1]. To successfully implement the capabilities of Industry 4.0, digital transformation and the development of an operational structure aimed at achieving digital goals consistently are necessary.

The Main Part

In the Republic of Uzbekistan, special attention is also paid to the transformation of textile enterprises through the introduction of digital technologies to optimize production activities, reduce costs, and increase efficiency and profitability. To this end, by decree of the President of the Republic of Uzbekistan, a resolution was adopted on April 28, 2020 "On measures for the widespread introduction of the digital economy and e-government" [2], and on October 5, 2020, the «Digital Uzbekistan 2030» Strategy and measures for its effective implementation were approved, which is aimed at introducing modern information and communication technologies in all spheres of life, with a special focus on public administration, education, health and agriculture. The comprehensive measures provided for in the strategy will ensure the effective implementation of the set goals [3].

An important legal document reflecting the role and importance of the textile industry is the Decree signed by the President of the Republic of Uzbekistan No. UP-155 dated September 2, 2023 "On additional measures to financially support the textile industry". The signing of this decree by the President of Uzbekistan testifies to the state's desire to develop the textile industry and provide it with significant support. This will make the textile industry one of the most dynamically developing in the country and turn Uzbekistan into a regional textile center with planned exports of up to $ 10 billion by 2027. In addition, funds in the amount of $ 200 million are provided to support enterprises exporting textile products, and agreements have already been concluded with 80 enterprises in the industry, while more than 20 of them have already received bank approval for loans in the amount of $ 30 million. The remaining enterprises are in the process of being reviewed or approved [4].

Also, to optimize the IT sector in textile production in our country, a forum was held on March 30 in 2023 on the topic "Digital textiles: Development of the textile industry through IT solutions", as well as presentations of a number of digital projects of the Uztextilprom Association – 1fintex, uzbektextile and the Textile Makon media center, which contributed to the transition to a new level of textile production products. During this forum, three projects were implemented to facilitate the transition of textile production to a new level:

• the system of consulting services "Single window", which ensures the transition to smart factories, taking into account the needs and desires of consumers, the provision of high-quality services and the production of appropriate products;

• trading platform that helps develop the sale of manufactured goods and simplify export agreements;

• media center that improves industries such as marketing, branding and social media in the textile industry [5].

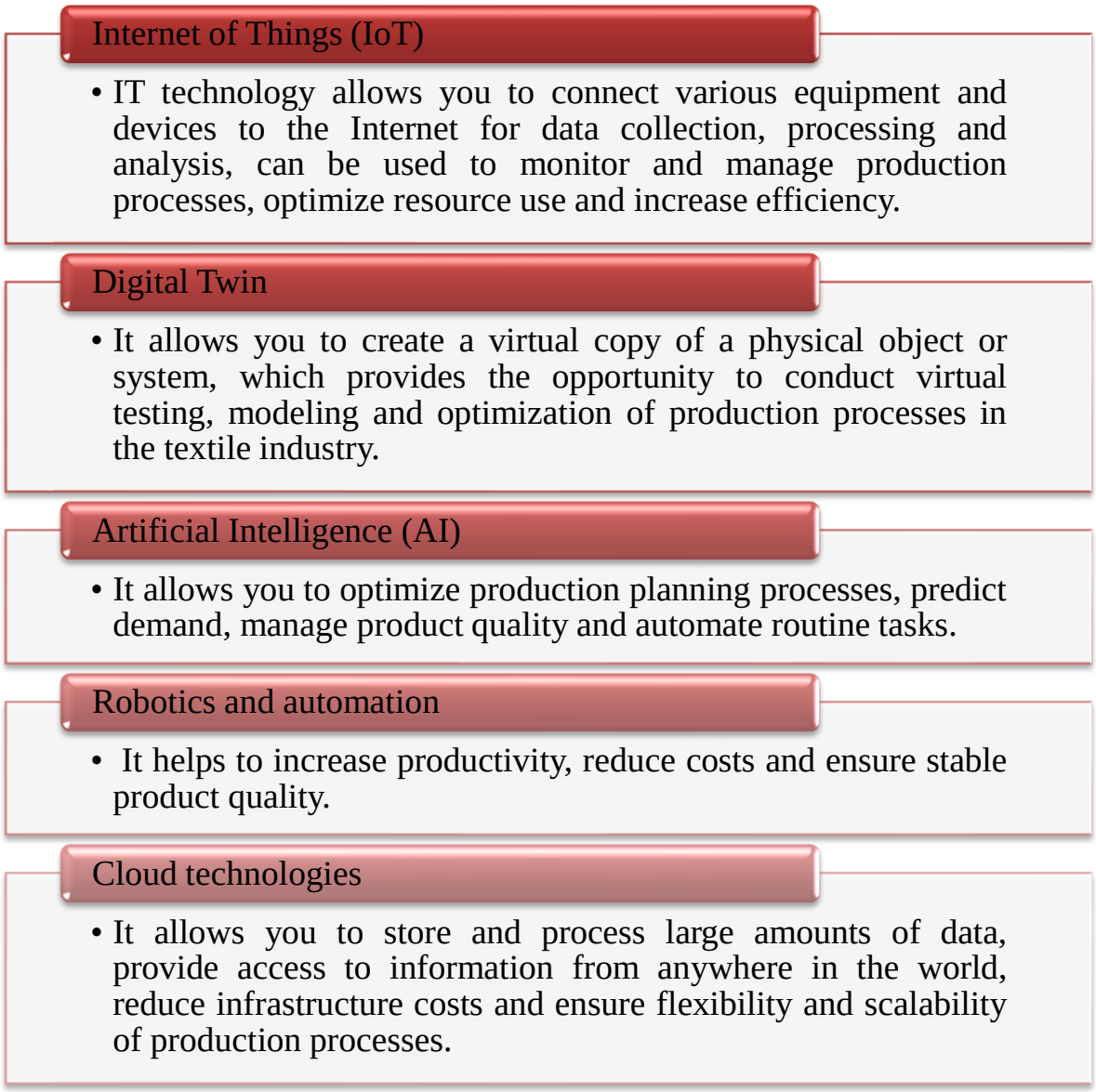

Fig.1. The main aspects of digital transformation in the textile industry [7]

Later, namely on April 12 of the same year, a seminar was held at the Uztextilprom Association, during which the key topic was "Digital textiles: automation of production and ensuring traceability of the supply chain." At this seminar, a new Osoft project was discussed, led by the company's CEO Rifat Oglaka, which provides business process management in production, which in turn allows control of the entire production process from cotton to the final finished product [6].

The study of the main aspects of digital transformation in the textile industry includes the identification of key technologies and innovative solutions that can significantly affect the production processes in this industry. The following figure shows some of the key technologies and innovations that can play a key role in the digital transformation of the textile industry.

The introduction of digital technologies in various spheres of society opens up prospects for the development of the economy of nations and provides new opportunities to increase the efficiency and competitiveness of enterprises. With the use of advanced technologies, automation and digitalization of production processes, this sector is undergoing a revolution that leads to improved efficiency, quality and competitiveness of products and interest in digital technologies in light industry.

The introduction of Big Data technologies in the textile industry represents an important stage of digital transformation, which can significantly affect all aspects of production, from product design and development to supply chain management and marketing [8]. Let's look at a few key areas where Big Data can make significant changes:

- Demand forecasting: Analyzing large amounts of data allows you to more accurately predict the demand for textiles, taking into account various factors such as fashion trends, seasonality, economic indicators and consumer behavior. This allows enterprises to manage production and inventory more efficiently, and avoid surpluses or shortages of goods in the warehouse.
- Product quality improvement: Data analysis allows you to identify trends and patterns in the production process, which helps to identify potential problems or defects at an early stage and prevent them. This helps to improve the quality of textiles and reduce the number of defects.
- Optimization of production processes: With the help of Big Data analytics, it is possible to optimize production processes, improve the efficiency of equipment and resources, reduce production time and reduce production costs.
- Product personalization: Analyzing data on consumer preferences and behavior allows you to create personalized textiles and services that meet the individual needs and preferences of each customer.
- Improving Supply chain management: Big Data analytics helps optimize supply chain management, predict possible risks and obstacles associated with the supply of raw materials and supplies, and ensure the smooth operation of production.

These technologies enable enterprises to collect and analyze large amounts of data, optimize production processes, improve quality control and make more informed decisions.

In conclusion, digital transformation management in the textile industry is becoming an integral part of modern business. The introduction of innovative technologies such as Big Data, digital technologies such as production automation, product quality improvement, process optimization and reduction of prototyping time. It allows companies in the textile industry to overcome market challenges, improve product quality, optimize production processes and actively respond to changes in consumer demand.

Digital transformation also opens up new business opportunities such as creating new products and services, improving customer experience, increasing productivity and reducing costs. However, the successful implementation of digital transformation requires not only the introduction of appropriate technologies, but also a change in organizational culture, employee training and the creation of new business models. Companies that successfully manage digital transformation can win in the market, attract new customers, increase revenue and strengthen their position in the industry.

Thus, understanding the importance of digital transformation and the application of advanced technologies in the textile industry is necessary in order to remain competitive and successful in the market. The introduction of digital transformation opens up new horizons for the development of textile companies and helps them adapt to a rapidly changing business environment.

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