O‘ZBEKISTONDA TA’MINOT ZANJIRINI BOSHQARISHDA AXBOROT TEXNOLOGIYALARINING O‘RNI

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Аннотация. *Ushbu maqola O'zbekistonda ta'minot zanjiri boshqaruvida axborot texnologiyalarining (IT) rolini aniqlash va uni raqamlashrtirishga qaratilgan. Shuningdek, qishloq ho’jaligi mahsulotlarini etkazib berish jaraenida ta'minot zanjirini vujudga keltirish, undagi muommolarni informatsion texnologiyalarni qo’llash va raqamlashtirish orqali echish. Qishloq xo’jaligi maxsulotlari ta'minot zanjirini yaratishda yuqori xizmat ko'rsatish darajasiga erishish va ta'minot zanjiri xarajatlarini kamaytirish uchun tarqatish tizimini qayta qurishda ATning hissasini ko’paytirish lozimligini ko’rsatib beradii. AT strategiyasi tomonidan qo'llab-quvvatlanishi kerak bo'lgan keng strategik yo'nalishlar - bu jo'natish chastotasini oshirish, materiallarni etkazib berish vaqtlarini kamaytirishdir. O'zbekistonning bugungi iqtisodiyotidagi tub o'zgarishlar mijozlarimiz, yetkazib beruvchilarimiz, biznes hamkorlarimiz va hamkasblarimiz bilan munosabatlarimizni o'zgartiradi. Shuningdek, u AT ishlanmalari kompaniyalarga raqobatdosh ustunlikka erishish uchun misli ko'rilmagan imkoniyatlarni taqdim etganini tasvirlaydi. Shunday qilib, AT ni joriy qilish va raqamlashtirish bozorda barqaror turuvchi va ta’minot zanjirini yaratuvchi har bir firma uchun zaruriy shartdir.*

Kalit so’zlar: *axborot texnologiyalari; qishloq xo'jaligi mahsulotlarini yetkazib berish; bulutli hisoblash; raqamli transformatsiya; Yetkazib berish tizimining boshqaruvi , elektron tijorat, transport logistikasi.*

РОЛЬ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИИ В УПРАВЛЕНИИ ЦЕПОЧКОЙ ПОСТАВОК В УЗБЕКИСТАНЕ

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Аннотация*. В этой статье основное внимание уделяется роли информационных технологий (ИТ) в управлении цепочкой поставок в Узбекистане и ее цифровой трансформации. Также подчеркивает вклад ИТ в создание цепочки для поставок сельскохозяйственной продукции, помощь в реструктуризации всей системы распределения для достижения более высокого уровня обслуживания и сокращения запасов и снижения затрат на цепочку поставок. Широкие стратегические направления, которые должны быть поддержаны ИТ-стратегией, - это увеличение частоты получения / отправки, удержание материалов дальше по цепочке поставок и сокращение различных сроков выполнения заказа. Обсуждаются важные аспекты ИТ и внедрения в экономику Узбекистана. Изменения, происходящие в экономике меняют наши отношения с нашими клиентами, поставщиками, нашими деловыми партнерами и нашими коллегами. В статье также описывается, как ИТ-разработки предоставили компаниям беспрецедентные возможности для получения конкурентного преимущества. Таким образом, инвестиции в ИТ и управление цепочкой поставок являются обязательными условиями для каждой фирмы, чтобы оставаться на рынке.*

Ключевые слова: *информационные технологии; поставка сельхозпродукции; цифровая трансформация; Система управления цепями поставок, электронная коммерция, транспортная логистика.*

ROLE OF INFORMATION TECHNOLOGY IN SUPPLY CHAIN MANAGEMENT IN UZBEKISTAN

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Abstract. *This artikl focuses the role of Information technology (IT) in supply chain management in Uzbekistan und digital transformation it. It also creating a supply chain for the supply of agricultural products highlights the contribution of IT in helping to restructure the entire distribution set up to achieve higher service levels and lower inventory and lower supply chain costs. The broad strategic directions which need to be supported by the IT strategy are increasing of frequency of receipts/dispatch, holding materials further up the supply chain and crashing the various lead times. Critical IT contributions and implementations are discussed. Fundamental changes have occurred in today's economy of Uzbekistan. These changes alter the relationship we have with our customers, our suppliers, our business partners and our colleagues. It also describes how IT developments have presented companies with unprecedented opportunities to gain competitive advantage. So IT investment und supply chain management is the pre-requisite thing for each firm in order to sustain in the market.*

Keywords: *information technologies; supply of agricultural products; cloud computing; digital transformation; Supply Chain Management, electronic commerce, transport logistics.*

Introduction. Over the past several years, digital transformation has become one of the main trends, both in industry and in the public sector of many countries. Digital transformation determines the transition to a massive use of digital technologies in the variety of sectors of the economy and society, which improve or replace traditional products and services. According to the World Economic Forum, digital transformation offers enormous potential for innovation at a rate of several trillion dollars and applies to many industries (e.g., logistics, healthcare, automotive industry) and social trends (e.g., science, government, etc.). The digital transformation of society not only significantly alters industrial and economic structures, but also introduces new essences in civil, business, state and interstate turnover.

An electronic platform of domestic software products and IT services has been created in Uzbekistan, which, since January 1, 2021, has made it possible to:

• to form a unified database of domestic IT companies and developers of software products, their products and services, to assist them in promoting their products in the domestic and foreign markets;

• publish information about projects for the implementation of information systems and other software products planned for implementation in government agencies and organizations;

• to establish an effective and open dialogue in the process of solving practical issues of the development of the digital economy in the country and improving legislation in the field of information technology.

Problem statement. Today, the main problem in Uzbekistan is the proper organization of the supply chain in the process of production, storage, processing, sale and delivery of agricultural products to consumers.

One of the most basic definitions of food processing is the "set of operational processes in the process of converting agricultural products into consumption, cooking or storage." Food processing also transforms agricultural products into commodities that are needed and convenient for consumers, depending on their tastes. Without food processing, it would not be possible to meet the demand of the modern urban population, and again, the choice of products would be only seasonal.

In Uzbekistan, 20 mln. tons of fruits and vegetables are grown. However, only 15% of this oil is processed at the industrial level, and 7-8% of it is exported. At least 30% of fruits and vegetables are lost during harvesting and storage due to insufficient infrastructure. At present, there are 31 agrologistics centers and 1,500 refrigerators in the country. However, these refrigerators contain only 4.5% of the fat content of fruits and vegetables grown in our country.

We believe that these problems can be solved by creating a supply chain in the process of supplying agricultural products, the adoption of information technology and digitalization.

Analysis of recent research and publications. The theoretical and practical aspects of the digital transformation of society and the system of higher education, in particular, are covered in the works of such authors as Sacha Garben[1], David Eaves[2], Валерий Чумаков [3]etc.

The main directions of the influence of digital transformation on the evolution of social and economic systems are:

- increasing mobility in satisfying the needs of consumers, allowing to overcome the territorial restrictions and dependence on the location of service providers ;

- obtaining the possibility of collecting, storing and processing large volumes of information, which leads to a reduction of transaction costs in decision-making and concluding transactions;

- proliferation of network effects[4], that change the chains of generating profits and underlie new business models;

- changing the system of relations between consumers and service providers towards the involvement of consumers in the process of creating a new consumer value, for example, under the concept of "open innovation" .

Research methodology. The research is based on the use of general scientific and theoretical methods: analysis and synthesis of scientific, technical literature concerning the digital transformation of society and its impact on the system of Supply Chain Management; the combination of theories and conclusions from various fields of research. The paper uses argumentative- deductive, inductive and systematic approaches.

Research results. According to the World Bank, the digital economy is a system of economic, social and cultural relations based on the use of digital information and communication technologies. The widespread proliferation of digital technologies, their penetration into basically all spheres of human life and society is reflected in the concept of digital transformation. In the era of the fourth industrial revolution, the most important factor - the factor of access to advanced technologies - was added to traditional advantages in the form of inclusive institutions and strong leaders. The technological explosion leads to qualitative changes in business and management[4].

In many industries, products and services are traditionally supplied on the basis of physical infrastructure (for example, shops, banking offices, service centres, universities) or individuals (for exam-

ple, dealers, brokers, academics, lecturers). Often, products or services are also physically displayed, and operational processes use physical support. In this context, digital transformation determines the transition from traditional creation and sales of services to clients, including related operational procedures, to the use of digital technologies to enhance or replace traditional services with digital ones.

The basis of modern digital enterprises will be the technology of the so-called third platform: cloud computing, mobile services, "brainfacturing", i.e., intellectual production, big data, the concept of IoT (Internet of Things) and social networks.

For the further analysis of the directions of digital transformation, authors used the structural approach proposed in the study. This approach addresses two aspects of digital transformation: the transformation of products and services offered by organizations and the transformation of business processes for the provision of these products, in both aspects, they are distinguished by three stages. In the aspect of transformation of products and services, the following stages are distinguished: improvement (adding additional services), expansion (adding new features of existing products or services through digital components), and redefining (creating new products or services that replace the previous ones). In the aspect of business processes, the stages are as follows: creation (the emergence of new business processes on the basis of IT), leverage (the emergence of new opportunities to achieve greater efficiency of business processes) and integration (the combination of new and traditional business processes into a single infrastructure).

One of the areas that have enormous potential for digital transformation is the national logistics system of the Uzbekistan, especially the system of transport logistics und Supply Chain Management.

Introduction**:** Supply chain management (SCM) is concerned with the flow of products and information between supply chain members' organizations. Recent development in technologies enables the organization to avail information easily in their premises. These technologies are helpful to coordinates the activities to manage the supply chain. The cost of information is decreased due to the increasing rate of technologies. In the integrated supply chain model (Fig.1)

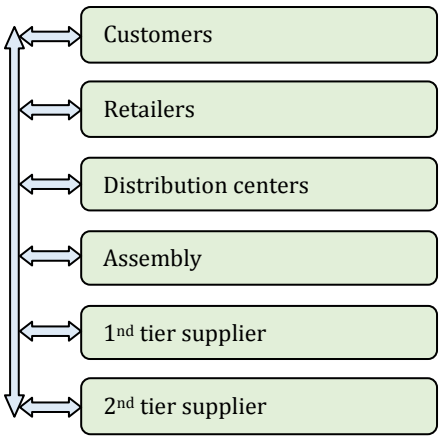

Fig.1. Integrated supply chain model[20]

bi-directional arrow reflect the accommodation of reverse materials and information feedback flows. Manager needs to understand that information technology is more than just computers. Except computer data recognition equipment, communication technologies, factory automation and other hardware and services are included.

Bi-directional arrow reflects the accommodation of reverse materials and information feedback flows. Managers need to understand that information technology is more than just computers. Except computer, data recognition equipment, communication technologies, factory automation and other hardware and services are included.

The importance of information in an integrated supply chain management environment:

Today in in Uzbekistan the information flow between functional areas with in an organization and between supply chain member organizations were paper based. The paper based transaction and communication is slow. During this period, information was often over looked as a critical competitive resource because its value to supply chain members was not clearly understood. IT infrastructure capabilities provides a competitive positioning of business initiatives like cycle time reduction, implementation, implementing redesigned cross-functional processes. Several well know firms involved in supply chain relationship through information technology. Three factors have strongly impacted this change in the importance of information. First, satisfying in fact pleasing customer has

become something of a corporate obsession. Serving the customer in the best, most efficient and effective manner has become critical. Second information is a crucial factor in the managers' abilities to reduce inventory and human resource requirement to a competitive level. Information flows plays a crucial role in strategic planning.

Supply chain organizational dynamics:

All enterprises participating in supply chain management initiatives accept a specific role to perform. They also share the joint belief that they and all other supply chain participants will be better off because of this collaborative effort. Power with in the supply chain is a central issue. There has been a general shift of power from manufacturers to retailers over the last two decade. Retailers sit in a very important position in term of information access for the supply chain. Retailers have risen to the position of prominence through technologies.

The Wal-Mart & P&G experiences demonstrate how information sharing can be utilized for mutual advantage. Through sound information technologies Wal-Mart shares point of sale information from its many retail outlet directly with P&G and other major suppliers. The development of Inter organizational information system for the supply chain has three distinct advantages like cost reduction, productivity, improvement and product/ market strategies.

Information and Technology: Application of SCM:

In the development and maintenance of Supply chain's information systems both software and hardware must be addressed. Hardware includes computer's input/output devices and storage media. Software includes the entire system and application programme used for processing transactions management control, decision-making and strategic planning. P&G distributing company and Saber decision Technologies resulted in a software system called Transportation Network optimization for streamlining the bidding and award process. Logitility planning solution was recently introduced to provide a programme capable managing the entire supply chain. Information and technology: SCM application:

Electronic Commerce:

It is the term used to describe the wide range of tools and techniques utilized to conduct business in a paperless environment. Electronic commerce therefore includes electronic data interchange, e-mail, electronic fund transfers, electronic publishing, image processing, electronic bulletin boards, shared databases and magnetic/optical data capture. Companies are able to automate the process of moving documents electronically between suppliers and customers.

Electronic Data Interchange:

Electronic Data Interchange (EDI) refers to computer-to-computer exchange of business documents in a standard format. EDI describe both the capability and practice of communicating information between two organizations electronically instead of traditional form of mail, courier, & fax. The benefits of EDI are:

1. Quick process to information.
2. Better customer service.
3. Reduced paper work.
4. Increased productivity.
5. Improved tracing and expediting.
6. Cost efficiency.
7. Competitive advantage.
8. Improved billing.

Though the use of EDI supply chain partners can overcome the distortions and exaggeration in supply and demand information by improving technologies to facilitate real time sharing of actual demand and supply information.

Enterprise Resource planning (ERP) tools:

Many companies now view ERP system (eg. Baan, SAP, People soft, etc.) as the core of their IT infrastructure. ERP system have become enterprise wide transaction processing tools which capture the data and reduce the manual activities and task associated with processing financial, inventory and customer order information. ERP system achieve a high level of integration by utilizing a single data model, developing a common understanding of what the shared data represents and establishing a set of rules for accessing data.

Conclusion: A bright but challenging future. In sum, supply chain professionals will have to face "the good, the bad, and the ugly" in the future. The "good" is that SCM can provide significant benefits to organizations and their customers, and a large number of employees will have to be hired to fill all types of supply chain positions. The "bad" is that it will be more difficult to plan, implement, and control supply chain operations because of various risk and uncertainty factors, such as labor shortages, increasing government involvement in business, and other uncertainties in the global marketplace.

The "ugly" is that, while everyone knows that efficient and effective supply chains are vital to the growth and development of economies, industries, and organizations, it will not be easy to achieve that. Technology will be available to assist, but people will have to know how to most effectively use that technology. And yes, there will be data available to provide supply chain decision-makers with the information they need to make the best decisions. However, the tidal wave of data that will be available will tax the managerial capabilities of most supply chain professionals.

World is shrinking day by day with advancement of technology. Customers' expectations are

also increasing and companies are prone to more and more uncertain environment. Companies will find that their conventional supply chain integration will have to be expanded beyond their peripheries. The strategic and technological innovations in supply chain will impact on how organizations buy and sell in the future.

However clear vision, strong planning and technical insight into the Internet's capabilities would be necessary to ensure that companies maximize the Internet's potential for better supply chain management and ultimately improved competitiveness. Internet technology, World Wide Web, electronic commerce etc. will change the way a company is required to do business. These companies must realize that they must harness the power of technology to collaborate with their business partners. That means using a new breed of SCM application, the Internet and other networking links to observe past performance and historical trends to determine how much product should be made as well as the best and cost effective method for warehousing it or shipping it to retailer.

In conclusion, in the process of supplying agricultural products in Uzbekistan, the solution through the creation of a supply chain, the use of information technology and digitalization has the following effects:

- Effective organization and development of food processing enterprises in Uzbekistan;
- leads primarily to the efficient use of agricultural products grown in the country;
- Products processed by enterprises create more value-added and profit;
- Newly created enterprises will create new jobs for the population [5].;
- The country's export potential will be developed through the processing of processed agricultural products.

References

1. Sacha Garben. ↑5 David Eaves The regulatory challenge of occupational safety and health in the online platform economy // International Social Security Review. — 2019-07. — Т. 72, вып. 3. — С. 95–112. — ISSN 1468-246X 0020-871X, 1468-246X. — doi:10.1111/issr.12215.

2. What is the NBN | NBN — National Broadband Network — AustraliaАрхивировано 16 января 2013 года.

3. Валерий Чумаков. Стратегии цифрового лидерства // В мире науки. 2019. — № 10. — С. 70—77.

4. Розанова Н. М., Юшин А..Механизм трансформации сетевого рынка в цифровую эпоху https://cyberleninka.ru › article › mehanizm-transforma...

5. Shadibekova Dildor. "Prospective Development Analysis of Small Business and Entrepreneurship of Uzbekistan " 2020 ISSN: 0193-4120 Page No. 1733 – 1743.Decree of the

6. Shadibekova Dildor. Challenges on digital economy as an development instrument in uzbekistan "Рақамли иқтисодиётни шакллантиришнинг хориж тажрибасидан самарали фойдаланиш йўллари" мавзусидаги халқаро онлайн илмий- амалий конференция материаллари., Т.: 2020 йил. 378 -381 бет.

7. President of the Republic of Uzbekistan. On approval of the Strategy "Digital Uzbekistan - 2030" and measures for its effective implementation. PF-6079 05.10.2020.

8. Anderson, David L., Britt. Frank E., and Favre. Donavon J., The seven principle of Supply Chain Management, Logistics Management.

9. Bearnon B.M (1998), "Supply Chain design & analysis: Models & Methods," International Journal of Production Economics, Vol. 55 pp. 281-294.

10. Chandra P., Saastry, T., "Competitiveness of Indian Manufacturing", Vikalpa, Vol. 23. No. 3, July- September 1998.

11. Cock M., "The Complexity of Managing Complexity" Transportation and Distribution Magazine, 2000.

12. Drew S. & Coulson. Thomas, C., (1997) "Transformation through team work" The path to the new organization, Team performance Management, 3., 162-178

13. King J. (2000), "B2B exchanges Tighten Buyer seller Data Links", Computer world, Vol. 34 (10), pp. 42 March 2000.

14. Kraker J. (2000), "Buyers Expect systems soon will deliver them", Engineering News Record, 11 Dec 2000, 2 May 2001, http://www.enr.com/new/c12111 a. asp, 2000.

15. Lietka J., (1996) "Collaborating across lines of business for competitive advantage", Academy of Marketing Excellence, 10, 20-37.

16. Wynstar, F., Axeleson, B. and Van Weele, A., 2000. "Driving & enabling factors for purchasing involvement in new product development, European Journal of Purchasing & Supply Management, 6, 49-57.

17. Werner, H. (2019). "Supply Chain Management"

18. Alias, C., Zahlmann, M., Olalla, F. E. A., Iwersen, H., & Noche, B. (2019). "Design of intelligent logistics processes using cyberphysical systems and complex processing of events."

19. Journal "Prospects of the transport industry" 2020. Germany. "Logistics 4.0 Towards Digitization". Vincent Bamberger, Florent Nansé, Bernd Schreiber, Michael Zintel. 2018.

20.Werner, H. (2019). "Supply Chain Management"