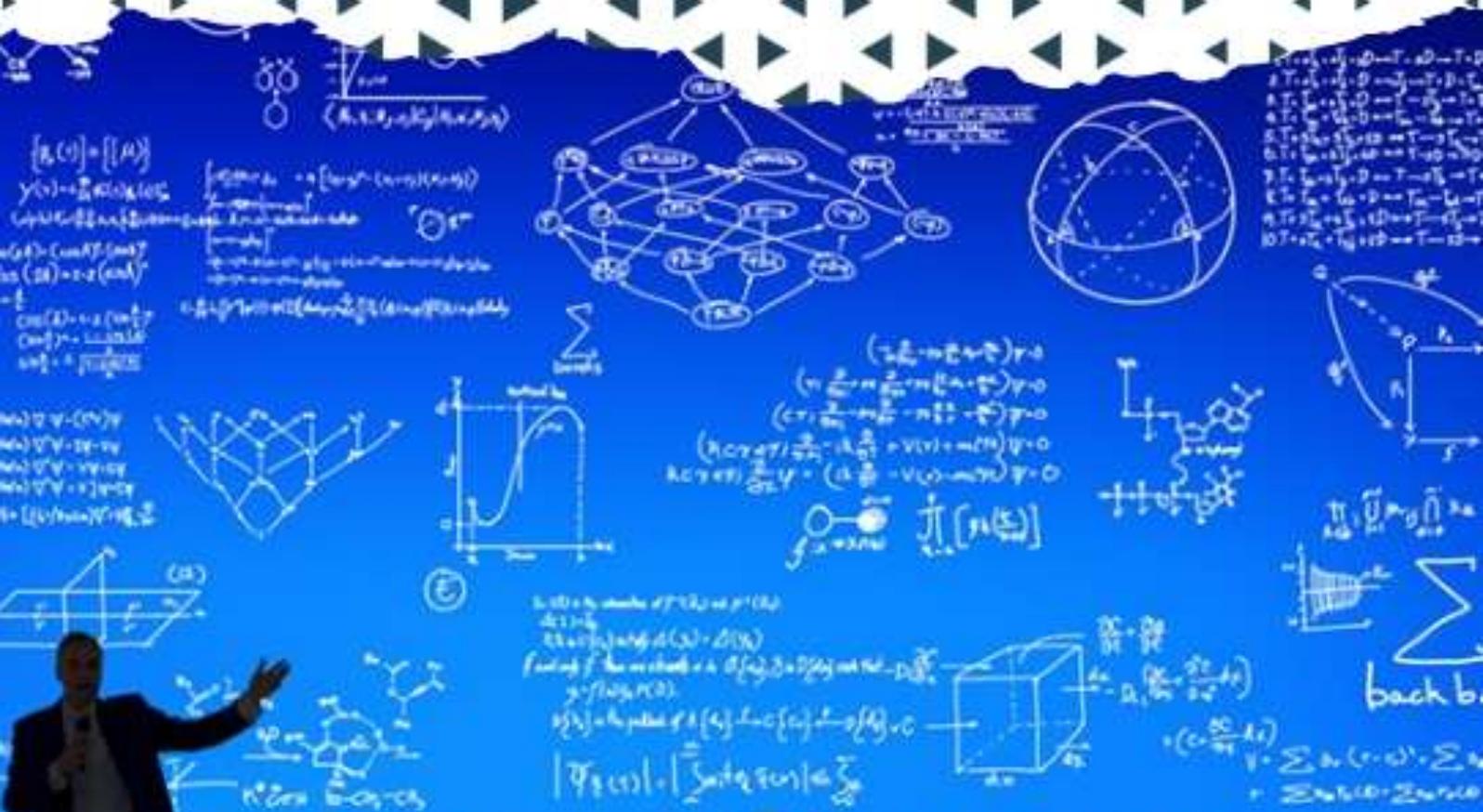INNOVATIVE WORLD
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Information Technologies

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Abstract. This thesis examines the role of information technologies in the modern world, the flow of the Internet in a globalized society, and the application of IT across various fields. It also discusses methods of increasing young people's interest in the IT sector. Additionally, the influence and significance of artificial intelligence on human consciousness are analyzed, and the importance of promoting information culture is emphasized.

Information Technology (IT) refers to the collection of related fields that include computer systems, software, programming languages, data, data processing, and data storage. IT is considered a core component of Information and Communication Technologies (ICT). An IT system typically represents an information or communication system—more precisely, a computer system that encompasses hardware, software, and peripheral devices. Such systems are usually managed by a group of IT specialists and are designed to support, run, and deploy IT-related solutions. Although humans have been storing, retrieving, manipulating, and communicating information since the earliest writing systems, the term "information technology" in its modern sense first appeared in a 1958 article in the Harvard Business Review. The authors—Harold J. Leavitt and Thomas L. Whisler—stated: "The new technology does not yet have a single established name. We shall call it information technology (IT)." They categorized IT into three components: processing techniques, the use of mathematical and statistical methods for decision-making, and the simulation of higher-order thinking through computer programs. Today, the term IT is often used as a synonym for computers and computer networks, but it also includes other information distribution technologies such as televisions and telecommunication devices. Many economic products and services—such as computer hardware, software, electronics, semiconductors, the Internet, telecommunication equipment, and e-commerce—are directly connected to IT.

Based on existing data storage and processing technologies, four major stages of IT development are commonly identified:

1. Pre-mechanical stage (3000 BCE – 1450 CE).
2. Mechanical stage (1450 – 1840 CE).

3. Electromechanical stage (1840 – 1940 CE).

4. Electronic stage (1940 – present).

Information technology is also a branch of computer science, which studies the procedures, structures, and general principles of processing various forms of data. As IT continues to advance globally, its importance in education also grows, prompting the introduction of computer science courses into K–12 curricula. After Uzbekistan gained independence, the country's first "Law on Informatization" (1993) laid the foundation for large-scale computerization across all sectors, including higher education. Informatization is one of the most important directions of modern global development and reflects the achievements of scientific, technical, and socio-economic progress.

In solving economic and management tasks, information technology typically includes:

●Collecting and recording information.

●Processing and transmitting data.

●Coding information.

●Storing and retrieving data.

●Processing economic information.

●Outputting and using information.

●Supporting decision-making and management activities.

The Internet, derived from the Latin words inter ("between") and net ("network"), represents a global system of interconnected computer networks that exchange information through the standard Internet Protocol (IP). The core protocol suite of the Internet is TCP/IP. The Internet consists of thousands of academic, governmental, commercial, and household networks and provides services such as email, chat systems, and the World Wide Web. Information Security (Cybersecurity) involves the protection of information systems from accidental or intentional threats. According to the Law of the Republic of Uzbekistan "On the Principles and Guarantees of Freedom of Information" (2002), information is defined as any documented data about persons, objects, events, and processes, regardless of form or source. Information protection includes preventing information-related threats and eliminating their consequences.Artificial Intelligence (AI) refers to technologies that simulate human thinking, learning, and decision-making through computers and software. AI algorithms are based on large datasets and machine learning principles, enabling them to produce fast and accurate outputs. In an increasingly digital world, responsible use of AI is essential, as misuse (such as harmful content generation) can pose risks. Regulatory documents, including Resolution No. 560, emphasize the need to form strong information culture and ensure safe use of digital technologies. Information culture describes an organization's shared attitudes, values, and behaviors toward information, including how it is acquired, used, and managed. It

influences how information is treated as a valuable resource and how it informs decision-making, with a positive information culture leading to better organizational practices and performance. This can manifest as a preference for factual data, transparency, information sharing, and proactive use of new information.

Information culture refers to the manner and extent to which an organization values information. In this case, information means the intellectual resources and knowledge that have been acquired by the organization. The ways an organization uses and treats information are all part of its information culture. This culture includes the value the organization places on information, the practices it uses to grow and protect the information it has and to gain more, and the standards or norms it uses to direct its members in regard to acquiring, storing, and using information. Achieving a culture that gains, guards, and grows information is a strategic goal for many organizations because a strong information culture is often a factor in successful businesses.

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