

The Role and Conceptual Foundations of “One-Window” Service in Higher Education: The Case of UNEC

Összefoglalás: A negyedik ipari forradalom által generált digitális átalakulások megújult megközelítést tesznek szükségessé a felsőoktatási szektorban. Fejlődnek a hallgatóközpontú és digitális egyetemek, amelyek magas versenyképességükkel és célközönségükre szabott innovációk bevezetésével tűnnek ki az oktatási szolgáltatások piacán. A digitális egyetemi modellben a távoktatás megszervezése és a hallgatók részére nyújtott elektronikus szolgáltatások biztosítása az e-közigazgatási rendszer különböző elemeinek felhasználásával valósul meg. Ebből következően a közigazgatás egyes szintjein és területein – így a felsőoktatási intézményekben is – alkalmazott digitális megoldások hozzájárulnak a közbiztonság erősítéséhez, a kormányzás átláthatóságának növeléséhez és a hatékonyság javításához. Ezzel összefüggésben a digitális egyetemi modellre áttért Azerbajdzsáni Állami Közgazdaságtudományi Egyetem (UNEC) pozitív tapasztalatokra tett szert az oktatási folyamatok digitalizálásával, valamint az iratforgalmat és a hallgatói megkereséseket segítő elektronikus szolgáltatásokkal. 2019 óta az UNEC bevezette az egyablakos szolgáltatást, amely megkönnyítette a diákok hozzáférését számos szolgáltatáshoz, csökkentette az idővesztést és növelte a hallgatók elégedettségét. Ez az írás a modern felsőoktatási intézmények digitalizációs folyamatainak és elektronikus dokumentumforgalmának koncepcionális alapjait és legfontosabb jellemzőit vizsgálja szakirodalmi áttekintés, tartalomelemzés és összehasonlító elemzési módszerek segítségével, továbbá javaslatokat tesz az UNEC egyablakos szolgáltatásainak fejlesztésére.

Kulcsszavak: Felsőoktatás, e-kormányzat, digitalizáció, UNEC, egyablakos szolgáltatás.

Abstract: The digital transformations shaped by the Fourth Industrial Revolution necessitate corresponding approaches in the higher education sector. Student-centered and digital universities, which are distinguished by their high competitiveness and implementation of innovations tailored to their

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target audience in the education services market, are evolving. In the digital university model, the organization of distance education and the provision of electronic services to students are achieved using various elements of the e-government system. Consequently, digital solutions applied at different levels and fields of state administration, including higher education institutions, contribute to enhancing public safety, increasing transparency in governance, and improving efficiency. In this context, the Azerbaijan State University of Economics (UNEC), which has transitioned to the digital university model, has gained positive experience by digitalizing its teaching processes and offering electronic services for document circulation and student inquiries. Since 2019, UNEC has implemented the One-Stop service, which has facilitated access to a range of services for students, reduced time wastage, and increased student satisfaction. This paper examines the conceptual foundations and key features of digitalization processes and electronic document circulation in modern higher education institutions through literature review, content analysis, and comparative analysis methods, and provides suggestions for improving One-Stop services at UNEC.

Keywords: Higher education, e-government, digitalization, UNEC, One-Stop service.

Introduction

The establishment of centralized student service centers in higher education institutions dates back to the 1990s. Initially used for modernizing university campuses, these service models aimed to simplify information management and save office space. Today, higher education institutions that offer modern one-stop services strive to enhance efficiency and service levels for students, rapidly modernize the education process, and simplify educational management and documentation processes through digitalization. The rapid technological advancements and the trend of swift adoption of new innovations observed in the context of the Fourth Industrial Revolution, similar to other industries, have necessitated the application of new approaches and the use of electronic services in the education services sector [1]. In such a situation, alongside high expectations from the private sector for the development of a civilized society, there are increasing expectations for the improvement of public services.

Furthermore, the necessity to strengthen the "state-industry-university" collaboration in the global economy positions higher education institutions at the core of digital transformation processes. This is because without establishing their operations at the required level, the effective realization of this collaboration is not feasible. It is noteworthy that the state-industry-university model already forms the basis of economic relations in various countries, such as Switzerland, Ethiopia, and others (Leydesdorff, 2020). Therefore, the emerging rapid digitalization trends highlight the role of information and communication technologies (ICT) as a key tool for enhancing efficiency in the education sector, alongside the private sector and other areas of public production. In this regard, universities utilize electronic service methods and digital work practices more extensively compared to other sectors. It becomes evident that organizing modern centralized one-stop services in higher education institutions can be realized through the use of ICT and the capabilities of e-government systems, as well as a favorable normative legal framework.

Thus, as in other fields, the "Electronic Government" concept serves as the fundamental base for the implementation of digital services in the higher education system. The relevant term representing the "Electronic Government" model first entered the scientific lexicon in 1992, coinciding with the emergence of the term electronic democracy. In 1997, American scholar West laid the foundation for the concept of electronic government as a result of the transformation of the digital government concept. West's electronic government concept encompassed the use of the internet and digital tools by state organizations to provide services and necessary information to citizens and to expand democratic processes [2]. Subsequent research has reflected the conceptual approaches to and understanding of electronic government. Researchers have sought answers to many questions, such as the purpose of electronic government, how it should be implemented, and what methods should be used. In this regard, German scholar Homburg interpreted the term electronic government as the strategic use of ICTs to create a digital government or digital network in the state administration system [3]. While the author's interpretation of electronic government as the strategic use of ICTs is mainly accurate, it is now necessary to view the electronic government model from a broader perspective. In my opinion, electronic government emerged as a necessity for high technological development and the

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[4] Field, T.–Muller, E.–Lau, E.–Gadriot-Renard, H.–Vergez, C. (2003): The case for e-government: Excerpts from the OECD report “The E-Government Imperative”. *OECD Journal on Budgeting*, 3., (1.), pp. 61–96.

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improvement of state administration and currently offers opportunities such as enhancing citizen satisfaction, implementing remote work methods, and increasing transparency. The use of electronic government elements in organizing higher education not only implements the relevant concept but also brings new qualities to it. For instance, the authenticity of the electronic documents of students who apply to UNEC's One-Stop service is verified through a "QR code." To do this, a QR code scanner must be installed on a mobile phone or other mobile device, and the corresponding mark on the document must be scanned. The software ensures that the original text description of the document is loaded onto the mobile device. Thus, the application of the QR code system in electronic documents ensures the secure storage, integrity, and confidentiality of documents and information.

The Conceptual Foundations of Rapidly Developed Electronic Services in Higher Education: The E-Government Concept

Electronic government (e-government) concepts, which provide the conceptual basis for the rapidly developing electronic services in higher education institutions, are typically implemented to enhance state governance and the services provided through the use of information and communication technologies (ICT) [4]. However, research findings indicate that the failure rates of e-government systems are higher in less developed countries compared to developed ones. The main challenges in this context are associated with the underdevelopment of technology and relevant infrastructure, as well as the low human resource potential related to the implementation of e-government systems. According to studies, the failure rates of e-government in less developed countries range from 15% to 50% depending on the services provided [5]. I believe that the application of the e-government model in state governance, including higher education management, not only enhances state-citizen relations but also promotes coordinated and more efficient communication among various state organs, private sector representatives, and state structures.

Leading universities around the world have begun to improve their operations within the framework of e-government models, expanding the use of various elements of digital transformation. With the expansion of internet use and the development of ICT, the application of new conceptual approaches in state governance and higher education institutions continues to grow [6]. Thus, as a clear example of the internationalization and integration process in the education market, the conceptual foundation of centralized student centers and electronic service systems in universities is realized through e-government models implemented by applying new technologies in state governance. In this regard, to enhance the quality of services provided to students, ensure student satisfaction, prevent additional time loss in the education management process, strengthen and centralize the control of handling inquiries, UNEC has offered the “One-Stop” service to students since April 2019. The main goal of this project is to allow students to obtain the necessary educational documents as quickly as possible by applying to a single center.

Digital Transformation of Higher Education and Integration into the E-Government Model

In the 21st century, higher education institutions, focusing on labor market demands, present themselves as key institutions in creating a knowledge economy, with digital technologies serving as the main tool in realizing this potential [7]. However, some researchers argue that higher education institutions lag behind other sectors in terms of digitalization [8]. From a historical perspective, frequently referenced by researchers, higher education institutions have been characterized mainly as decentralized organizations [9]. This has often resulted in these institutions developing based on regional and local requirements and standards. Therefore, digitalization in higher education is characterized as both a top-down and bottom-up process. While those responsible for the strategic management of higher education focus on the application of ICT and centralization of management, academics conduct more research on how digitalization affects the education process and research.

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Recently, however, governments have started to establish unified criteria and development directions for universities.

Starting from the first decade of the 21st century, discussions on many aspects of the digital transformation of higher education, including management strategy and the use of various communication tools, have expanded [10]. One of the key issues in this context has been the establishment of an effective electronic system for e-learning, providing students with necessary educational materials, and efficiently handling inquiries [11]. One of the main events that accelerated digital transformation in higher education was the COVID–19 pandemic. The rapid spread of the pandemic and the disruption of normal life resulted in millions of students replacing university classrooms with digital classrooms through platforms like Zoom and Teams. In the critical situation caused by the pandemic, students, academic staff, and those responsible for education management sought ways to continue education. This factor led to the popularization of digital education during and after the pandemic [12]. However, centralized management of this process was one of the main requirements. For this purpose, new service centers began to form in universities to ensure the implementation of electronic services and respond to student inquiries.

Currently, the importance and quality of electronic services offered by universities are continuously increasing. These services encompass various functions, including registration, electronic libraries, course support, and efficient management of student life [13]. To this end, advanced practices involve the use of University Information Systems (UIS) to provide electronic services to both university staff and students and to create online platforms. Such systems operate in the form of intranets accessible only to internal users, i.e., faculty and registered students [14]. Additionally, UIS facilitates seamless integration of various programs, communication channels, data repositories, business processes, and information sources across different university departments to provide a comprehensive set of online services to end users.

Digital transformations have created new trends in society and state governance. The application of e-government systems and remote service methods in public sectors continues to expand in modern state governance.

In the Republic of Azerbaijan, expanding the functions and capabilities of the e-government system in line with global challenges and new realities has been prioritized. Therefore, as in other fields, the level of application of electronic services in the management process of higher education is progressively developing.

Expansion of Electronic Services in Azerbaijan

The normative-legal framework for the provision of electronic services in Azerbaijan is established by national strategies, state programs, and other official documents aimed at the development of e-government and ICT. The primary objective of implementing e-government in Azerbaijan is to leverage the rapid digitization trends and the capabilities offered by ICTs to provide timely services to citizens, residents, and business entities, and to strengthen coordination among government agencies. A distinctive feature of the e-government model implemented in Azerbaijan, based on international experience, is its focus on providing social services to the population. One of the most effective approaches internationally, the "One-Stop-Shop" system, has been adopted in Azerbaijan to facilitate efficient, transparent, and simplified service delivery processes, allowing citizens to secure their rights without visiting government offices physically.

The main tasks of the e-government system include increasing the variety and quality of electronic government services provided by public authorities and enhancing citizen satisfaction with these services. The structured formation of an advanced e-government system in line with international best practices and the creation of its normative-legal basis began in 2010. This process was initiated with the execution of the "State Program on the Development of Communication and Information Technologies in the Republic of Azerbaijan for 2010–2012 (Electronic Azerbaijan)" following the decree signed by President Ilham Aliyev on August 11, 2010. It is noteworthy that "Electronic Azerbaijan" was designed to implement the "National Strategy for Information and Communication Technologies for the Development of the Republic of Azerbaijan (2003–2012)," established by the President's decree on February 17, 2003. Hence, the initial phase of e-government implementation in Azerbaijan can be traced back to 2003, focusing on the development of ICT to lay the groundwork for successful e-government implementation.

On May 23, 2011, a decree on "Organizing the Provision of Electronic Services by Government Agencies" was signed, creating a legal foundation for the practical phase of providing electronic services to the public. The decree on "Development of E-Government and Transition to Digital Government" signed on March 14, 2018, marks the beginning of the modern development phase in this field. The implementation of the "State Program for the Expansion of Digital Payments in the Republic of Azerbaijan for 2018–2020," approved on September 26, 2018, aimed to increase transparency in financial transactions, promote cashless payments, and reduce the costs for banks and other commercial organizations.

Several factors contribute to the expansion of e-government services and their accessibility to the public in Azerbaijan:

- The launch of the first ASAN service center in 2013, which centralized various public services in one location.
- The implementation of the State Program for the Expansion of Digital Payments for 2018–2020.
- The establishment and expansion of DOST centers, which manage employment policies, targeted social assistance, pensions, and benefits via electronic systems.
- The adoption of state programs and legislative acts related to the creation and development of the e-government system, strengthening the legal framework.
- The digitization of services provided by state institutions.

UNEC Example

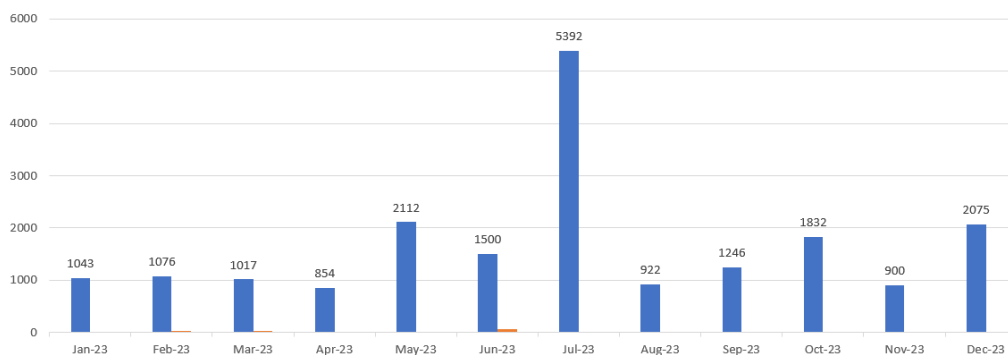
Following the state policies for the development of electronic services and the adoption of the "State Strategy for the Development of Education in the Republic of Azerbaijan," signed by President Ilham Aliyev in 2013, significant efforts have been made to provide digital services to students in higher education institutions. The Azerbaijan State University of Economics (UNEC) has emerged as a successful model internationally, thanks to a robust rebranding strategy led by Rector, Professor Adalat Muradov, under the "UNEC 100" development strategy. A primary goal is the complete integration into the digital university model and the digitalization of services.

During the COVID–19 pandemic, UNEC's rapid transition to distance education can be compared to the high performance shown by the University of Oslo. Following Norway's national lockdown on March 12, 2020, the University of Oslo required only one week to transition its 500 staff members and 28,000 students to digital education. Similarly, UNEC successfully transitioned to distance education, thanks to its existing Distance Education Center, technical infrastructure, and resource potential. UNEC's readiness for digital education enabled the coordinated transition of hundreds of staff and approximately 20,000 students to online learning. In the post-pandemic period, UNEC expanded its "One-Stop-Shop" or "One-Window" service to streamline student access to essential documents. Through this system, students can request educational documents around the clock via their personal accounts. Documents provided include study certificates, academic transcripts, tuition fee statements, call-up notices for part-time students, graduation certificates, and certified copies of educational documents (certificates, diplomas). The prepared documents are signed, sealed, and sent in PDF format with a QR code to the student's personal account. Since its inception, the One-Stop-Shop service has issued over 75,000 certificates of eight different

types, with each request typically processed within five minutes (excluding those forwarded to deans for execution).

From the 2022/2023 academic year, the One-Stop-Shop system has also begun providing documents in English, saving students from notary costs and enhancing their satisfaction.

**Figure 1. Number of Requests to the One-Stop-Shop Department
Within One Year (01. 01. 2023–30. 12. 2023)**



Source: Compiled by the author based on the statistics of the services provided

Regarding the statistics of requests made to the One-Stop-Shop system, which was created as a service sector for students, it can be noted that a total of 19,930 requests were received in 2023, as shown in the figure. According to the statistics, the system receives a minimum of 1 and a maximum of 488 requests per day. Additionally, the requests received during the year were answered within a minimum of 1 minute and an average of 17 hours. Requests for academic transcripts, call-up notices, internship certificates, and archive certificates are forwarded to the relevant departments for execution, so the processing time depends on those departments. However, requests for study certificates, graduation certificates, and other types of certificates are processed promptly on the day they are received without any delay.

The One-Stop-Shop system, which provides innovative and efficient services to students, also issues certificates in English, saving students from notary costs and enhancing their satisfaction. Through the One-Stop-Shop system, students can request the necessary education certificates 24/7 via their personal account. All these features not only highlight the advantages of the UNEC One-Stop-Shop system but also demonstrate its uniqueness. In general, the UNEC One-Stop-Shop system, designed based on the experience

of leading universities worldwide, ensures the security of students' requests and is equipped with appropriate systems and software for electronic queuing and service management. The One-Stop-Shop system is also an automated management system.

Currently, there are several proposals for improving the One-Stop-Shop system. These include the application of enhanced electronic signatures on certificates, the possibility of integration between state information resources, the creation of functionality for adding new departments and branches to the system, the adaptation of the reporting system to meet requirements, and the creation of new features such as access to the One-Stop-Shop from student and teacher portals without additional authorization by simply clicking on the menu.

METHODOLOGY

In this article, the conceptual basis and main features of digitization processes and electronic document circulation in modern higher education institutions are investigated through literature review, content analysis, exemplary and comparative analysis methods. The role of the "One-Stop-Shop" services in the digital transformation of higher education is determined using the example of UNEC.

CONCLUSION

One of the primary directions in internationalization and global integration processes is the provision of electronic services implemented through the application of new technologies in state governance and higher education systems. Electronic services have become an integral part of the e-government model used in most countries worldwide, including Azerbaijan. E-government emerged as a necessity for high technological development and the improvement of state governance. It currently offers opportunities such as increased citizen satisfaction, the implementation of remote work methods, and enhanced transparency. Thus, the fundamental basis of the e-government model includes the application of electronic document circulation in governance and the automation of citizen inquiries and business regulation processes.

The e-government concept, which ensures the conceptual basis for rapidly developing electronic services in higher education institutions, is typically implemented to improve state governance and the services provided through the use of ICTs. Experience and analyses show that among UNEC's strategic goals, special importance is attached to digitalization and the expansion of electronic services.

During the COVID–19 pandemic, UNEC's rapid transition to distance education should be regarded as an indicator of its scientific-technological potential and digital capabilities. UNEC's high preparedness in providing electronic services and digital education allowed for the coordinated transition of hundreds of staff and nearly 20,000 students to digital education.

In today's globalized world, the e-documentation is a highly competitive system in the modern era. Thus, the implementation of the One-Stop-Shop system at UNEC since 2019 has become one of the distinguishing advantages of the university over other higher education institutions. Based on my research and analysis, as well as my experience in the relevant field, I propose the following for the improvement of UNEC's One-Stop-Shop system:

- Establishing an interface that is more user-friendly for everyone;
- Creating robust systems for effective information management;
- Preparing informative guidelines for users to ensure confidentiality;
- Utilizing strong programs to guarantee cybersecurity.

In summary, we conclude that the organization of electronic services provided to university students through the One-Stop-Shop system positively impacts the efficiency, operativeness, and sustainability of these institutions in the context of modern digital transformations. Thus, digital universities like UNEC, which provide uninterrupted digital services, are distinguished by their higher competitiveness in the higher education sector.

