



The Digitization of Higher Education Institutions - A Factor for their Competitiveness in the Market of Educational Services

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Abstract

In the ever-evolving environment of higher education, institutions worldwide are facing unprecedented challenges and opportunities. The rapid advancement of technology has ushered in an era of digital transformation that is reshaping every aspect of our lives. Higher education, as a fundamental pillar of society, is no exception to this transformative wave. The digitalization of higher education institutions emerged as a pivotal factor, influencing their competitiveness in the dynamic market of educational services. In this age of information and innovation, the traditional model of brick-and-mortar education is gradually being replaced by digital alternatives that offer greater flexibility, accessibility, and personalized learning experiences. In this regard we will examine the various facets of this transformation, including the integration of cutting-edge technologies, the expansion of online learning, the customization of educational content, and the enhancement of administrative processes. These changes are not merely a response to current market dynamics but are essential for the long-term sustainability and relevance of higher education institutions.

Keywords: Digitalization, Digitalisation of higher education, Distance Learning, Digital transformation, Competitiveness

1. Introduction

Institutions throughout the world are faced with never-before-seen opportunities and challenges in the constantly changing field of higher education. Our lives are being drastically altered by the digital revolution that has been brought about by the quick development of technology. As a cornerstone of society, higher education is not exempt from this revolutionary wave. Higher education institutions' digital transformation has become a critical component that affects their ability to compete in the ever-changing market for educational services.

In this age of information and innovation, higher education institutions must adapt and thrive in the face of changing student expectations, emerging educational paradigms, and the global nature of higher learning. The traditional model of brick-and-mortar education is gradually being replaced by digital alternatives that offer greater flexibility, accessibility, and personalized learning experiences. As a result, universities and colleges worldwide are compelled to rethink their strategies and embrace digitalization to remain competitive in the educational services market.

This comprehensive exploration delves into the multifaceted dimensions of the digital transformation of higher education institutions and its profound impact on their competitive positioning within the educational services market. We will look at all the aspects of this change, such as the incorporation of state-of-the-art technologies, the growth of virtual education, the personalization of curriculum, and the improvement of administrative procedures. These adjustments are necessary for higher education institutions to remain relevant and sustainable over the long run, not just as a reaction to the state of the market.

1.1. Technology as a Catalyst for Transformation

The digitalization of higher education institutions entails a radical shift in pedagogy, administration, and engagement. With the adoption of technologies such as artificial intelligence, machine learning, augmented reality, and data analytics, educational delivery is becoming more personalized and adaptive. Faculty members are leveraging these tools to create engaging learning environments that



cater to diverse learning styles and abilities. Moreover, technology enables institutions to gather invaluable data on student performance and engagement, leading to more informed decision-making.

1.2. Student Recruitment and Global Outreach

In an era when internationalization is a key driver of competitiveness, digitalization plays a crucial role in enabling higher education institutions to reach a global audience. Through online marketing strategies and recruitment platforms, institutions can connect with students from diverse backgrounds and geographical locations. The digital realm also allows institutions to showcase their academic programs, research initiatives, and faculty expertise, thus enhancing their appeal to prospective students.

1.3. Customized Learning Experiences

Digitalization allows institutions to offer tailor-made learning experiences that meet the unique needs and aspirations of individual students. Adaptive learning platforms, competency-based education, and micro-credentialing are just a few examples of how higher education institutions can provide flexible and personalized pathways to knowledge and skills acquisition. Such customization enhances student satisfaction and retention rates.

1.4. Administrative Efficiency and Cost Reduction

Beyond the classroom, digitalization streamlines administrative processes, reducing operational costs and enhancing efficiency. Automated enrollment, digital record-keeping, and cloud-based systems are transforming the way institutions manage their resources and engage with stakeholders. This, in turn, allows universities to allocate more resources to academic and student support services.

1.5. Challenges and Considerations

While digitalization offers numerous benefits, it also presents challenges and considerations that higher education institutions must address. Issues related to data security, digital equity, faculty training, and the need for continuous technological upgrades are among the complex challenges facing higher education institutions in their digital transformation journey.

In conclusion, the digitalization of higher education institutions is not merely a trend but a necessary evolution to remain competitive in the educational services market. It is a journey that requires strategic vision, continuous adaptation, and a commitment to providing the best possible educational experiences for students. This exploration will serve as a valuable resource for educators, administrators, policymakers, and stakeholders seeking to navigate this transformative landscape and harness the power of digitalization to enhance the competitiveness and sustainability of higher education institutions.

2. Literature review

2.1. Digitalization of education

In 2018 Lazarou, E., & Trifan, E. (2018) [3], in their report, they discuss that the increasing emphasis of universities on competitiveness and business orientation is a response to the forces of globalization and internationalization, with a particular focus on the Bologna process. This shift aims to address the growing demand among students for Information and Communication Technologies (ICT), the imperative to enhance university teaching, and the need for significant cost reductions. In their opinion in this context, alternative study models that move away from traditional in-person courses are gaining traction, supported by e-learning and virtualization. Emerging factors like Apps, cloud computing, and information security are becoming increasingly crucial, alongside an anticipated transformation in the distribution of knowledge. Universities are also required to navigate the realms of marketing and develop strategies for Diversity Management, leading to the emergence of new roles within these institutions. Drawing from a series of projects conducted in German universities, their article explores the opportunities and challenges associated with the digitalization of international



academic collaboration in higher education. The authors aim to demonstrate how the internationalization of curricula can be achieved through digitalized lectures. They propose a collaborative approach to designing and delivering courses, which can be conducted entirely online or in a blended learning format across different universities. This collaborative effort is envisioned to be applicable to both Bachelor and Masters Degree programs.

In their article Pogorelskaya, I., & Várallyai, L. (2019) [4], due to the rapid increase of digital technologies in the education, they implement a new term, called "Education 4.0". In their point of view Education 4.0 leverages technology-driven tools and resources to revolutionize education in unconventional ways. Thus, remote students can access their classrooms via the internet, utilizing methods such as massive open online courses, video chats, or voice calls, engage with dynamic learning materials, collaborating with peers who may progress at varying paces. Authors state, that Education 4.0 exhibits several prominent trends that are reshaping the industry and fostering the emergence of the Personal Learning Cloud as a networked learning infrastructure. Another trend involves the diminishing significance of traditional classroom-based programs typically offered by business schools and universities. Additionally, there is a surge in customizable learning environments through platforms and applications that tailor content to learners' roles and organizational needs. These platforms boast millions of individual course enrollees and tens of millions of total users. These interconnected trends collectively form a cohesive pattern. Our objective is to present these Education 4.0 trends, along with the strategies, advantages, and challenges associated with digital education.

After 2019 due to COVID 19, we may see a shift to digitalization of educational process. This can be found also in the increased interest of researchers in this field of study.

In 2020 Tekin, M., Koyuncuoğlu, Ö., Geçkil, T., & Baş, D. (2020) [5] propose the term "University 4.0", due to the digitalization of higher education which is transforming the universities. University 4.0 embodies the essential characteristics that universities must possess in the era of Industry 4.0. Universities and research centers, in their opinion, will play a pivotal role in adapting the workforce to the profound changes brought about by Industry 4.0 and in equipping them with the necessary skills. The scope of these efforts extends beyond engineering, encompassing diverse fields such as social sciences, medicine, and law. The wide-ranging studies conducted within this framework are poised to expedite the integration of Industry 4.0 into the university landscape. Consequently, as academic programs evolve to align with competency-based learning objectives, the industry is expected to exert a notable influence on educational methodologies and curricula. Recognizing the significance of universities in fostering entrepreneurship, governmental authorities place considerable emphasis on their role and have high expectations. Public authorities are actively supporting and incentivizing universities in this regard, as they seek to promote competitiveness and innovation.

The same year Novik, N., Bashinova, S., Kunshina, N., & Sukharev, A. (2020) [6], they studied cause which COVID-19 pandemic has spurred rapid development and the quest for innovative approaches to introduce and organize digital learning environments within educational institutions. They describe that this trend primarily caters to the needs of various stakeholders in the educational process. It harnesses contemporary technical tools and technologies, thereby substantially augmenting and modernizing information and communication processes within society. Furthermore, it elevates the level of intellectualization among individuals and humanity as a whole, fostering increased competition among educational institutions. However, in Novik, N., Bashinova, S., Kunshina, N., & Sukharev, A. opinion, a notable contradiction arises concerning the perceived positive impact of the digital learning environment on enhancing teaching quality, with significant challenges related to methodological support and the scarcity of experimental data, thus this contradiction forms the crux of the research problem. Their survey results underscore the predominant view among authors that the digitalization of educational spaces plays a pivotal role in educational institutions across all levels of education, particularly in the challenging context of the modern era. Interviews conducted with participants in educational settings have revealed a spectrum of perspectives, encompassing both favorable and unfavorable aspects of online learning.

Again in 2020 several other articles focus their attention on the digitalization of the higher education. Bilyalova, A., Salimova, D., & Zelenina, T. (2020) [7], provide in their article a theoretical framework for comprehending the evolutionary phases of university development and how they adapt to the changing landscape of society. It outlines four distinct university models that have been characteristic of different historical periods, namely University 1.0, University 2.0, University 3.0, and University 4.0. Special emphasis is placed on delineating the distinctive characteristics of University 4.0, which represents a forward-looking model of universities. University 4.0 seamlessly integrates physical and virtual realms, thriving on digital platforms to redefine the higher education landscape. The authors draw the conclusion that in the current stage of societal development, several discernible trends are



shaping the evolution of universities and higher education. These trends encompass shifts in the status of universities owing to heightened risks in scientific research and experimentation. Additionally, there's a shift from competition towards collaborative partnership interactions. Furthermore, the availability of vast datasets (Big Data) is becoming increasingly influential, as is the transition towards a multi-format approach to open educational resources (Open Online Resources). The integration of new and traditional training formats is gaining prominence, and physical classrooms are being reimagined into open-space educational settings (Open Space Education). These trends collectively characterize the ongoing transformation of higher education.

The same year several authors wrote: 2020 Markov, B. V. (2020) [8] stated that the advent of online courses, curated by renowned experts and accessible from anywhere with an internet connection, presents a remarkable opportunity. He follows that the economists express concerns about the escalating cost of education, which appears to be on the rise rather than diminishing. The financial burden on the State has become unsustainable. In this context, digitalization offers a promising avenue to tackle pressing challenges such as productivity, accessibility, mobility, and disparities between prestigious and other universities. It has the potential to reshape the landscape of higher education, providing solutions to these critical issues. Ermakova, Y. D. (2020) [9] writes that unlike previous revolutions, which left the structure and organization of universities relatively untouched, the current integration of technology with artificial intelligence is permeating various facets of the global educational system at a profound level. The notion of 'deep learning,' a central element in the advancement of digital resources and artificial intelligence, is reshaping the fundamental and well-established objectives of universities. This transformation has the potential to introduce new forms of competition that universities must grapple with.

In 2021 Astratova, G. V., Rutkauskas, T. K., Parushina, N. V., & Suchkova, N. A. (2021) [10], analyze in their study that the competition and structural shifts within higher education are being redefined within the context of digitalization. The primary trajectories for the development of higher education in the 21st century have been pinpointed. It is evident that by the year 2020, fresh trends emerged and became fully realized in the higher education service market, driven by three pivotal factors: 1) heightened global competition; 2) the widespread adoption of digital technologies in higher education; 3) the influence of the global COVID-19 pandemic on educational technologies. To continue with this train of thought Galyna, P. (2021) [11] writes that the escalating level of competition in the global higher education services market underscores the growing significance of university branding and the overall branding of national higher education systems. Djakona, A., Obushna, N., Iegorov, B., Tkachuk, I., Ostrovska, N., & Popova, L. (2021) [12] point in their research that in order to maintain a strong competitive position in the modern era of digitalization and globalization, universities are continuously compelled to enhance their educational, research, and innovative endeavors. At the state level, educational policies should be geared towards establishing competitive advantages for the national higher education system. Katane, I., & Troškova, M. (2021) [13] in their report express their opinion that one of the objectives of contemporary education is to guarantee the resilience of higher education within the constantly evolving globalized and globalized environment. Socio-economic shifts driven by globalization, internationalization, and the digitization of higher education, along with the current demographic landscape in Europe, bring forth the question of the competitiveness of academic personnel within a multi-level, multi-context, and multifaceted higher education setting.

In 2022 many authors are focused on the same theme. In their paper Rof, A., Bikflvi, A., & Marques, P. (2022) [14], write that the COVID-19 pandemic accelerated the digitalization of many universities that previously relied heavily on in-person modes of education. In their opinion this shift to digital learning has intensified competition in the online environment, placing universities under heightened pressure to deliver innovative and engaging learning experiences. Ruzanova, L. S., Karnaukhova, T. V., ... Titova, M. A. (2022) [15], suggest that the digital transformation of higher and continuing education involves not only changes to the educational processes but also the restructuring of organizational frameworks and structures within the sector. Kamalova, A. A., Ibragimova, G. M., & Yagudina, K. M. (2022) [16], in their report go further, proposing that the future direction and legal standing of universities are shaped by the challenges that arise from competition at the global, national, and regional levels. In essence, this competition revolves around the quest to be recognized as the best and to secure a leading position.

With the increased interest in the field of digitalisation of higher education in 2023 many scientists continue to research this topic. In their study Ghavifekr, S., & Pei, X. (2023) [17], show that Higher education institutions, as intricate organizations responsible for generating and disseminating knowledge through teaching and research, have inevitably become integral components of the ongoing processes of globalization and digitalization. Given the swift evolution of the external higher



education landscape, these institutions encounter numerous obstacles and challenges ranging from management issues to financial concerns. A primary challenge they face is the adjustment to the global digitalization, which is a pivotal factor in achieving internationalization. The internationalization of higher education represents a crucial developmental trend that significantly impacts competitiveness and offers avenues for delivering high-quality education in universities. In his research Ziguas, C. (2023) [18], states that the digital transformation of higher education, which was expedited by the COVID-19 pandemic, has resulted in a significantly increased utilization of digital learning resources. These resources encompass a wide array of digital materials, such as digital texts, images, videos, interactive programs, quizzes, and more. Киреев, С. П., & Дмитриев, А. Г. (2023) write that effective management of educational institutions is crucial for enhancing the quality of education and ensuring the efficient operation of the education system. In today's rapidly evolving landscape, where modern technologies and innovations are reshaping the education sector, there is a pressing need to update management methods to stay relevant. The advent of digitalization in education, coupled with the intensifying competition in the educational services market and evolving demands for skilled professionals, presents formidable challenges that require proactive strategies to overcome.

Conclusion

In conclusion, the digitalization of universities is a transformative journey that holds immense potential for enhancing teaching, learning, research, and administrative processes. However, it also brings forth a multitude of challenges and considerations that require careful planning, adaptability, and strategic decision-making.

The challenges encompass digital equity and accessibility, data privacy and security, faculty development, quality assurance, costs, and sustainability, student engagement and well-being, intellectual property and copyright, adaptation to emerging technologies, cultural and organizational change, and ethical considerations. Each of these challenges demands thoughtful solutions to ensure that the benefits of digitalization are accessible to all stakeholders while mitigating potential risks.

Furthermore, the considerations involve the need for a pedagogical shift towards digital modes of instruction, the integration of emerging technologies, the evolution of the student-instructor relationship in digital environments, and the ethical use of data and digital content. These considerations underscore the importance of fostering a culture of innovation and continuous learning within universities.

In navigating these challenges and considerations, it is essential for universities to develop comprehensive digitalization strategies that encompass technology, pedagogy, policy, and culture. Collaboration, communication, and adaptability will be key drivers of success in this transformative journey.

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