

# **The Transformative Impact of Digital Business Models in Higher Education: Thriving in the Post-Covid Era**

**Rashmi Malhotra**  
**Saint Joseph's University**

**D.K. Malhotra**  
**Thomas Jefferson University**

**Robert Nydick**  
**Villanova University**

*The pandemic accelerated the adoption of digital technologies as the world came to a standstill overnight. Educational institutions innovated and adapted to this new environment. A direct outcome of these challenges in a post-pandemic era is new set of opportunities fostering digital transition of academic institutions. This study explores the impact of digitization and desired integration with pedagogical logic in higher education. The objective is to explore the primary challenges that higher education institutions must overcome in the post-Covid-19 environment. The study explores several transformative strategies that universities should adopt to thrive in the “new normal” and beyond. Furthermore, the study examines the significance of technology and digital transformation as bridges for students to transition into employment in the digital economy.*

*Keywords: digital transformation, higher education, COVID-19*

## **INTRODUCTION**

We are currently in the midst of the Fourth Industrial Revolution that is characterized by the integration of advanced technologies such as artificial intelligence, the Internet of Things, and robotics. The Digital Revolution, in particular, has transformed the way we live and work, with the proliferation of mobile devices, cloud computing, and social media changing the way we communicate and access information. Further, the pandemic brought about an unprecedented global learning experiment, with educational institutions across the world being forced to adapt to remote and hybrid models of teaching and learning. This change has highlighted the critical importance of digital competence as an essential pedagogical element, both for students and educators. The crisis has also presented an opportunity for growth and innovation, with many institutions leveraging digital tools to enhance the learning experience. As the digital economy becomes the “new normal”, the importance of IT infrastructure cannot be overstated. A robust and secure technology systems is essential to support the digital transformation of businesses and educational institutions alike. The pandemic has accelerated this trend, with many organizations prioritizing

investments in IT infrastructure to ensure they can continue to operate remotely. The shift to remote and hybrid models of learning has significant implications for business education. As businesses have changed, so too must business education. Business schools are increasingly launching online MBA programs as a new level of digital literacy becomes essential in the workforce. These programs aim to provide students with the skills and knowledge needed to navigate the digital economy, and accommodate the emerging acceptance of digital learning. The objective of this study is to scrutinize the evolving business model of higher education, delineate fundamental transformative strategies that universities ought to embrace to thrive in the “new normal” and subsequent periods. Additionally, we will assess the pivotal role of technology and digital transformation that institutions must undertake as a conduit for students’ transition into employment within the digital economy.

## LITERATURE REVIEW

The digital revolution, characterized by a fusion of technologies, blurs the lines between physical, digital, and biological spheres. The Fourth Industrial Revolution evolves at an exponential pace, disrupting industries worldwide and transforming entire systems of production, management, and governance. Global CEOs and business leaders find the acceleration of innovation and disruption challenging to comprehend, even for the most informed, with technologies underpinning this revolution significantly impacting businesses (Schwab, 2017). The impact of the digital revolution on education is profound. The gradual and varied incorporation of technology in education depends largely on the skills and readiness of teaching professionals. However, the emergence of the COVID pandemic has exponentially increased the impact of digital tools across all educational levels (Núñez-Canal, et al., 2022). The COVID crisis necessitated a shift to online teaching and learning, requiring greater digital transformation among staff, professors, and organizations than previously anticipated (Bonfield et al., 2020). Universities have implemented various strategies to adapt to pandemic restrictions, including a hybrid educational model combining online education with in-person learning (Gnaur et al., 2020). Consequently, due to the pandemic and the rise of a digital society, the new educational model faces scrutiny, with educators’ digital capabilities playing a key role in addressing post-pandemic challenges (Núñez-Canal, et al., 2022).

Zimmerman (2020) underscores the impact of the covid pandemic, which compelled millions of students worldwide to partake in online courses, signaling an unparalleled global learning experiment. This sudden transition to online learning has led to a significant surge in digital skills among higher education professionals. Consequently, the quality of online teaching methods has notably improved across most universities. Amidst the academic year 2020-21, health restrictions precipitated the widespread implementation of a blended learning format termed hybrid learning, amalgamating traditional face-to-face education with online participation. This transition to digital learning has demanded considerable effort from all educators, irrespective of their prior experience with online environments. Society should acknowledge this effort in some form (Núñez-Canal, et al., 2022). Nevertheless, discussions concerning the effectiveness of digital tools in the educational realm persisted even before the onset of the COVID-19 crisis (Marcelo & Yot-Domínguez, 2019). The rapid incorporation of technology into education has become a focal point of investigation, with a plethora of approaches being explored (O’Byrne & Pytash, 2015). The new hybrid model, introduced as a response to COVID-19, considers the liquid generation responsible for its own learning (Bauman, 2005) and necessitates a new role for educators in designing hybrid models and accommodating diverse student types (Bernard et al., 2009).

In their evolving role, educators advocate for the cultivation of autonomy, responsibility, and professional growth among students (O’Neill and McMahon 2015). The pandemic crisis has precipitated substantial transformations within universities, spanning both pedagogical and organizational realms. Additionally, the financial strain stemming from general economic losses, tuition shortfalls, and substantial investments in technology to meet emergent demands necessitates consideration (Krishnamurthy 2020). Recent scholarship has delved into the role of electronic digital competency (EDC) in higher education’s learning paradigm (Rodríguez-García et al. 2019), recognizing lecturers as pivotal influencers with significant impacts on student learning outcomes (Amhag et al. 2019). In order to proficiently navigate

teaching in the digital era, educators necessitate a thorough understanding of digital competence spanning three crucial domains: adept utilization of information and communication technology (ICT) resources in teaching, imparting knowledge “about” digitization, and fostering the development of digital competence among students, as delineated in Gibb’s entrepreneurial competence framework (Gibb, 2002).

In the contemporary landscape, EDC (digital competence) has assumed heightened significance across various sectors, including higher education. Caena and Redecker (2019) underscore the imperative for universities and policymakers to delineate frameworks of competence for educational professionals, guiding their endeavors in meeting the challenges posed by evolving learners. Initially, the integration of ICT into education was associated with pedagogical modernization, novel learning modalities, and an innovative role for educators, all consonant with a constructivist educational approach (Tavangarian et al., 2004).

Nevertheless, the exigencies of the knowledge economy necessitate shifts in traditional educational paradigms. Resistance to technological integration in academia may emanate from multifaceted concerns such as apprehensions regarding knowledge gaps, reluctance to depart from comfort zones, concerns over integrity, and scholarly standards. However, the Covid pandemic compelled academia to transition from traditional face-to-face teaching to hybrid models incorporating both online and in-person instruction, surmounting resistance. The proactive attitude and endeavors of teaching professionals in confronting this challenge hold the potential to enrich teaching and learning opportunities significantly.

Preceding the pandemic, educators were already contending with an inexorable trend towards the ubiquity of technology in their roles (Gisbert Cervera et al., 2016). Certain scholars emphasize the significance of educators’ attitudes towards integrating ICT into pedagogical processes, emphasizing its utilization beyond instrumental purposes. Adequate training in ICT use and intended applications assumes paramount importance. Scholarly interest in studying digital skills among educators has burgeoned (Gisbert Cervera et al., 2016; Perdomo et al., 2020; Rodríguez-García et al., 2019).

The TPACK model (Mishra and Koehler, 2006) suggests that effective educators can leverage three essential components: discipline, pedagogy, and technology. Nevertheless, some scholarship advocates for a more holistic approach to Educational Digital Competence (EDC) to address the complex knowledge and skills necessary for young individuals to navigate ethically, safely, and productively in a digitally-mediated environment (Falloon, 2020).

Moreover, educators’ digital competence plays a pivotal role in fostering students’ development of digital skills. The inclination towards utilizing ICT in all aspects of learning and teaching processes emerges as a critical determinant. This motivation is cultivated through the support and training provided to professors, enabling them to effectively leverage such technology. Consequently, depending on educators’ attitudes towards ICT usage, students’ digital competence is enhanced (Liesa-Orús et al., 2020).

In higher education institutions, there is a prioritization of cultivating competencies across various domains including innovation, interpersonal communication, knowledge management, organizational skills, professional development, communication, and ICT utilization (Conchado et al., 2015). As a result, the necessity of enhancing digital competence has moved beyond mere deliberation, emerging as an acknowledged reality.

Research indicates that prior to the onset of COVID-19, certain universities had not effectively integrated digital competence for pedagogical purposes (Lakkala & Ilomäki, 2015). Recent studies underscore that this competence is now considered essential across most graduate and undergraduate programs (Gisbert Cervera et al., 2016). Teaching in the new educational environment, which emphasizes technology usage, relies heavily on educators’ proficiency in managing new tools and embodying specific attributes such as enthusiasm, approachability, and friendliness (Tschannen-Moran & Hoy, 2001).

The emergence of the hybrid teaching model has introduced new challenges for instructors in navigating class dynamics. The correlation between educators’ ability to teach in university or post-graduate programs and the quality of teaching has been extensively examined and documented (Voss & Gruber, 2006). The parity of digital competence between students and professors assumes particular significance within the context of the student-centered learning paradigm, wherein instructors serve as knowledge guides and mentors while designing learning trajectories.

With the proliferation of the hybrid model, lecturers require ongoing training and competence development in teaching with technology. Moreover, they must feel empowered to scrutinize the rationale for change and respond adaptively to reconceptualize university teaching within a new blended environment (Sadler et al., 2016). Nevertheless, reaching a consensus regarding the delineation of digital competence for educators has proven challenging.

Schwab (2017) posits that we are currently entrenched in the Fourth Industrial Revolution, marked by intricate globalization, technological convergence, digitization, automation, and pervasive uncertainty. The World Economic Forum (WEF, 2019) underscores a looming skills deficit, particularly in digital competency. Notions like Digital Taylorism suggest a scenario where robots supplant jobs on a vast scale, spanning not only low-skilled positions but also sophisticated roles (Holford, 2019). Scholars have identified occupations more susceptible to computer replacement (Frey & Osborne, 2017), while the European Union's Digital Agenda predicts that 90% of jobs will demand basic information and communications technology (ICT) skills (European Commission, 2014).

In this landscape, universities must assume a pivotal role in fostering and promoting ICT skills among the younger generation. Students' digital proficiency is indispensable in addressing global challenges, conceptualized in various terms in the literature such as digital competence, digital literacy, and digital skills. Higher education institutions serve as linchpins in advancing economic growth and welfare, striving for enhanced performance to secure the future prosperity of our societies (Aparicio et al., 2016).

Forlano et al. (2021) highlight that universities are grappling with new realities and objectives, leading to the development of increasingly intricate structures. Although the primary aim of universities is to impart knowledge and facilitate a smooth transition to the workforce, this transition can pose challenges for graduates (Allen and van der Velden, 2007). In the face of an uncertain environment, universities, akin to other organizations, must navigate their mission to prepare young individuals for a labor market that is progressively complex, globalized, and digital (Etzkowitz and Leydesdorff, 2000). Bauman (2005) characterizes this as a "meta-change," involving the management of internal change amidst a continuously shifting landscape.

Universities are swiftly transitioning from their traditional instructional role to a more holistic one as entrepreneurial center contributing to regional economic advancement (Wakkee et al., 2019). The evolving role of universities, aiming to become "entrepreneurial universities," encompasses amalgamating research and teaching endeavors with vital initiatives such as technology dissemination, regional growth, knowledge administration, and partnerships with stakeholders such as industries and government bodies (Clauss et al., 2018).

With the rapid technological advancements and evolving learning methodologies, there is an escalating demand for a more adaptable educational approach in higher education. There is an increasing interest in short and accelerated programs, which differ in terms of quality assurance from traditional academic programs (Wlodkowski, 2003). Furthermore, the changing role of universities in society, combined with new learning modalities and evolving student demographics, presents significant challenges that necessitate adaptations in governance structures. The focus is on cultivating students' competencies (Gornitzka et al., 2017). The competence-learning approach embodies a novel educational paradigm that aims to establish a correlation between education and the requisites of modern digital society (Núñez Canal, 2017).

Finally, with the transformation of the business landscape following the pandemic, business schools are devising innovative programs and pathways to address the contemporary challenges faced by executives. As expectations for leaders become more diverse in the hybrid work environment, and businesses grapple with increasingly intricate obstacles, these schools are intensifying their efforts by introducing online MBAs, modifying learning approaches, and designing programs that align with the demands and opportunities of today's economy (Birch, 2022).

In post-pandemic discourse, scholars have delved into the significance of the digital revolution and its implications for businesses. Malhotra and Malhotra (2021) conducted a study aimed at understanding the formidable challenges businesses encountered during the COVID-19 era. Their research not only scrutinized the critical obstacles but also advocated for measures essential to embarking on a digital

transformation journey. The study posited that achieving a certain level of digital maturity was imperative for success in the post-pandemic world.

Employing Porter's framework, Malhotra and Malhotra (2021) explored the impact of digitalization on industries heavily reliant on information (Porter & Millar, 1985). They elucidated the nuances of the evolving digital strategy and business model, emphasizing its ramifications across diverse sectors, including education. Leveraging Porter and Millar's (1985) information intensity matrix, the authors discerned the repercussions of the COVID-19 pandemic. Introducing the concept of the "digital tolerance quotient," they proposed a metric to evaluate the influence of information intensity on product content and the value chain. The study underscored that heightened levels of digitalization or the reconfiguration of traditional methods within the value chain augured well for a firm's resilience.

Central to their argument was the notion that a firm's ability to adapt to the post-pandemic milieu hinged on its digital tolerance quotient. This adaptability, they contended, determined the firm's capacity to acclimatize to the new reality and the permanent shifts therein. Drawing on the fundamental premise that the pandemic has irrevocably transformed the global landscape, the study pointed to the imperative for firms to evolve to survive.

Illustrating this transformation, the study cited the education sector as a prime example, where the disaggregation of education delivery and the burgeoning digital tolerance among the populace have revolutionized the industry. While online education witnessed a steady ascent over the past decade, the pandemic catapulted the online classroom to unprecedented heights.

The study's objectives encompassed understanding the digitization's impact on the education sector through the lens of the Porter and Millar (1985) model. Additionally, it sought to delineate the emergent business model in education, underscore the role of IT infrastructure, and advocate for the transformational journey that business schools must undertake to thrive in the fourth industrial revolution. By delving into the emerging model of higher education and educators' evolving capabilities in the knowledge economy, particularly in response to the new imperatives following the COVID-19 crisis, the study aimed to bridge existing research lacunae.

## **IMPACT OF DIGITIZATION**

The unforeseen advent of COVID-19, labeled a 'black swan' catastrophe, startled the globe and wrought significant disruptions to global commerce. The subsequent global lockdown brought economic activity to a grinding halt on national, regional, and international scales. In response, businesses pivoted towards innovation and adopted modified models to enhance preparedness for future calamities. Digitalization, already on the ascent before the pandemic, emerged as the pivotal factor that empowered businesses to withstand the tempest and adapt to the "new normal." The education sector, too, felt the reverberations of the pandemic, prompting the adoption of more resilient business models. To assess the impact of digitalization, we employ the concept of "information intensity."

Originally introduced by Porter and Millar in 1985, the concept of information intensity has since been expounded upon in subsequent studies (Glazer, 1991; Palmer and Griffith, 1998; Bhatt, 2000; Andal-Ancion et al., 2003). Porter and Millar's (1985) theory posits that information technology can wield strategic significance in industries reliant on information in their value chain or product/service. Seetharaman (2020) applies the information intensity matrix to comprehend the repercussions of COVID-19, introducing a third dimension that considers the inherent nature of the product or service.

Porter and Millar (1985) elucidate the strategic significance of information technology in industries heavily reliant on information across their value chain and product/service offerings. The degree of information processing essential for effectively managing a company's value chain or business processes is commonly denoted as information intensity. Additionally, the concept of product information intensity pertains to the degree to which customers depend on information when making decisions related to selecting, purchasing, using, and maintaining products/services offered by an organization (Sabherwal and Vijaysarathy, 1994).

In this context, products with low information intensity, such as agricultural produce or cement, reside on the lower end of the product information intensity continuum, as depicted in Figure 1. These items derive their value primarily from physical properties, lacking inherent informational attributes. Conversely, industries dealing with products like textiles exhibit higher product information intensity due to the substantial information content pertaining to size, color, pattern, and other features (Palmer and Griffith, 1998).

In contrast, sectors such as banking, education, and media are characterized by information-rich goods (Porter and Millar, 1985; Hu and Quan, 2005; Shih and Fang, 2006; Consoli, 2008; Macada et al., 2012; Koo et al., 2013; Seetharaman, 2020), heavily reliant on information in their operations. The level of process information intensity also differs among industries. For example, sectors such as construction and mining demonstrate lower information intensity compared to industries like automobile manufacturing and oil refining, which demand a higher degree of information processing (refer to Figure 1).

Banking and other financial services are positioned in the upper-right quadrant of the diagram because of their heightened information intensity and process information intensity (Hu and Quan, 2005). Specialists in information systems contend that businesses operating in sectors characterized by high information demand, such as banking and financial services, generally experience more significant returns from investments in information technology than those in industries with lower information demand, such as energy, mining, and construction.

Porter and Millar (1985) emphasize the ubiquitous integration of information systems across the value chain, exerting substantial influence on operational processes and interactivity among activities. Each component within the chain encompasses both tangible and informational aspects. While the tangible aspect underwent profound changes during the Industrial Revolution, the present “Information Revolution” primarily impacts the informational dimension of activities. The strategic importance of information systems is illustrated in Figure 1, recognizing its diverse roles across industries.

A vital measure for evaluating a company’s capability to utilize IT investments and digitally manufacture or distribute its products/services involves assessing the information density within the firm’s existing and potential products and processes. This assessment serves as an indicator of the information embedded in the company’s products and the level of information processing involved in its operations. Companies strive to augment their information density by integrating informational content into their products or adjusting their business processes accordingly.

The automotive industry, traditionally inclined towards technological innovations for differentiation, is moving towards the upper-right quadrant of the information-intensity grid. The sector is progressively concentrating on developing intelligent vehicles equipped with information-laden features such as remote monitoring, smart sensing, and driver education, with the ultimate aim of achieving fully autonomous vehicles. Consequently, a company’s level of digitalization emerges as a primary distinguishing factor among competitors.

The COVID-19 pandemic triggered widespread disruptions across all facets of business operations, compelling companies to embrace digital solutions. Drawing from the principles delineated by Porter and Millar (1985) and subsequent research, it becomes imperative for companies to enhance their information intensity and strive for the upper-right quadrant of the grid. Prioritizing digital transformation strategies becomes essential for modernizing business models amidst the challenges posed by the pandemic.

The shift from the digital revolution to the virtual revolution accelerated in response to the pandemic. Akmaera et al. (2020) examine the strategies that Russian companies should embrace to flourish post-crisis, underscoring the development of business models integrating disruptive digital technologies before the crisis. This evolution reduced the timeframes for strategy development and promoted more adaptable organizational structures. The research suggests that Russian enterprises depending on digital business models are better equipped to adjust to the post-crisis landscape.

As customers immerse themselves more deeply in digital and virtual environments, a company’s digital tolerance quotient becomes a crucial metric for success. The pandemic expedited the trend of dissociating products or services from traditional business procedures. Consequently, the quality of digital unbundling significantly influences a company’s success in the post-pandemic era and beyond.

Seetharaman (2020) applies Porter and Millar's (1985) information intensity matrix to explore the impact of COVID-19, introducing a third dimension focused on the essential nature of products or services in addition to product/service information intensity and process/value chain information intensity.

Malhotra and Malhotra (2021) introduce the notion of the digital tolerance quotient to assess the impact of information intensity on product content and the value chain. They posit that companies with elevated levels of digitalization in their products or effective unbundling of traditional methods in the value chain stand a better chance of surviving post-pandemic, with a firm's adaptability contingent upon its digital tolerance quotient.

A scrutiny of the higher education sector through the lens of the digital tolerance quotient underscores its pivotal role in delivering products and services and automating business processes, as highlighted by Porter and Millar (1985). The pandemic accelerated digitalization trends, prompting educational institutions to modernize their models by streamlining operational procedures. Malhotra and Malhotra (2021) exemplify various business sectors, including education, gravitating towards the upper-right quadrant of Figure 1.

The education sector underwent significant transformation due to the pandemic, with institutions worldwide swiftly adopting online education programs for student safety. Global school closures impacted a substantial portion of the student population (UNESCO, 2020), driving the transition facilitated by the unbundling of education delivery and growing digital tolerance among students and educators, elevating the online classroom to new heights.

Figure 2 illustrates the information intensity matrix with the digital tolerance quotient for the education sector. The traditional in-person teaching model aligns with quadrant 2, characterized by low information intensity in the value chain. Conversely, the online education model corresponds to quadrant 3, featuring high information content and intensity in the value chain. Institutions implemented hiflex and synchronous online teaching models during the pandemic, each with varying digital tolerance quotients.

In the post-pandemic era, the education sector's business model evolved with increased digital tolerance quotient and higher information content. Integration of digital business processes from the pandemic into in-person classes shifted the sector's business model towards the onset of quadrant 1, featuring a higher digital quotient and reflecting adaptation to the new post-pandemic landscape.

## **DIGITAL MODEL FOR THE EDUCATION SECTOR**

As illustrated above, the fourth revolution is omnipresent and is impacting every walk of life. The digital revolution is changing the way we live and do business. Further, the transformative impact Covid crisis had on digitalization of education is presenting us with an opportunity that we must not overlook. Throughout this challenging period, we have demonstrated the importance of having a robust digital university infrastructure and a highly skilled faculty capable of effectively teaching online. As a result, hybrid models of learning have emerged, unveiling new formats that heavily rely on digital capabilities. Rather than perceiving the ramifications of the Covid crisis on digital education solely in a negative light, we should embrace them as a catalyst for positive transformation. The crisis has underscored the significance of integrating technology into our educational systems and highlighted the need for educators to adapt and enhance their digital teaching skills.

By recognizing the potential of this situation, we can leverage the advancements made during the crisis to reshape education for the better. The digital infrastructure that proved essential during remote learning can continue to serve as a foundation for a more versatile and inclusive learning environment. Through hybrid models, we can combine the benefits of both online and in-person education, offering students greater flexibility and access to a wider range of learning resources. To fully capitalize on this opportunity, it is crucial that universities invest in further developing their digital capabilities and provide ongoing training for faculty members. By equipping educators with the necessary skills and tools, we can ensure that they are prepared to navigate the evolving landscape of digital education effectively. In conclusion, the impacts of the Covid crisis on digital education should not be seen solely as challenges to overcome; rather, they present an opportunity to revolutionize the methods by which we teach and learn. By embracing the

lessons learned and capitalizing on the advancements made, we can create a future where digital education is not only necessary but also enhances the learning experience for all.

The role of IT infrastructure in the education sector has become increasingly vital in today's digital age. As technology continues to evolve and reshape various industries, technological advances have also transformed the way we teach and learn. A robust and well-designed IT infrastructure is crucial for educational institutions to effectively deliver education and provide students with a modern and enriching learning experience. One of the primary benefits of a strong IT infrastructure in the education sector is the ability to enhance connectivity and communication. A robust IT infrastructure enables seamless collaboration between students, teachers, and administrators, regardless of their physical locations. Through online platforms, students can access educational resources, participate in virtual classrooms, and engage in interactive discussions. Teachers can deliver lectures, provide feedback, and monitor student progress remotely. Such connectivity breaks down barriers and expands educational opportunities, particularly for those in remote areas or with physical limitations. Additionally, a reliable IT infrastructure enables the efficient management and storage of vast amounts of educational data. Schools and universities can utilize data management systems to track student performance, analyze trends, and tailor teaching methods to individual needs. This data-driven approach allows educators to personalize the learning experience, identify areas for improvement, and make informed decisions to optimize educational outcomes. Furthermore, IT infrastructure plays a crucial role in ensuring the security and privacy of sensitive educational information. With the increasing digitization of academic records and online learning platforms, it is essential for educational institutions to have robust cybersecurity measures in place. Institutions must protect student data, prevent unauthorized access, and safeguard against cyber threats. A well-designed IT infrastructure includes firewalls, encryption protocols, and regular security audits to maintain the integrity of educational systems.

Moreover, IT infrastructure enables the adoption of innovative technologies and digital tools that enhance the learning process. Virtual reality, augmented reality, and simulations provide immersive and interactive experiences, making complex subjects more accessible and engaging for students. Cloud-based platforms and online learning management systems allow for easy distribution of course materials, collaborative projects, and real-time assessments. These technological advancements empower educators to create dynamic and interactive lessons, fostering critical thinking, creativity, and problem-solving skills in students. To ensure the effective implementation and maintenance of IT infrastructure, educational institutions need skilled IT professionals. These experts can design, implement, and manage the infrastructure, provide technical support, and stay updated with the latest technological advancements. Ongoing professional development and training programs are essential to equip educators with the necessary digital literacy skills to leverage IT infrastructure effectively. Thus, a robust IT infrastructure is a cornerstone of the modern education sector. The infrastructure facilitates connectivity, data management, security, and the integration of innovative technologies, transforming the way education is delivered and received. By investing in and maintaining a strong IT infrastructure, educational institutions can provide students with a dynamic, inclusive, and future-ready learning environment.

Figure 3 illustrates the design of the IT infrastructure for the education sector. The IT infrastructure is the backbone of every organization and education sector is not an exception. As the society and business embraces advanced technologies such as artificial intelligence, machine learning, virtual reality, and augmented reality among others, the IT infrastructure should support a robust analytical engine that can process, learn, and recommend using big data and other information resources of the organization. The analytical engine feeds the business intelligence and analytical tools that can enhance decision making at all levels. Business intelligence tools have revolutionized the way educational institutions operate and make strategic decisions. These tools enable institutions to harness data and leverage analytical intelligence to drive innovation, establish a competitive advantage, and develop new programs that meet the evolving needs of students and the job market. By analyzing data from various sources, including both internal and external, educational institutions can assess risks, manage processes efficiently, identify potential partnerships, strengthen alumni relationships, and explore opportunities at both local and global levels.



At the heart of these intelligent systems lies the analytics engine, which acts as the brain, utilizing advanced AI techniques to process and analyze the data. This engine is deeply integrated with data warehouses and data lakes, allowing seamless acquisition of data from disparate sources. By analyzing both structured and unstructured data, institutions can gain valuable insights and make informed decisions based on a comprehensive understanding of the information available. Business analytics plays a vital role in the development of Big Data-driven tools in the education sector. By leveraging the power of analytics, institutions can effectively manage student relationships, track their progress, identify areas for improvement, and personalize the learning experience. This data-driven approach helps institutions tailor their educational offerings to meet the unique needs of individual students, ultimately enhancing their educational outcomes. While traditional IT infrastructure is an essential component of an organization's management strategy, educational institutions should expand their IT strategies to incorporate the analytical engine and relevant business intelligence tools. This expansion allows institutions to make data-driven decisions, improve operational efficiency, and gain a competitive edge in the increasingly competitive education landscape.

As the education sector embraces digital transformation, it is crucial to develop an AI strategy that aligns with institutional goals. AI has the potential to revolutionize various aspects of education, from personalized learning experiences to intelligent tutoring systems. By investing in AI technologies and infrastructure, educational institutions can unlock new opportunities, improve teaching and learning outcomes, and stay at the forefront of educational innovation. In addition to focusing on analytics and AI, educational institutions must prioritize cybersecurity measures within their IT infrastructure. As data becomes more valuable and vulnerable to cyber threats, institutions must implement robust security protocols, encryption techniques, and regular security audits to safeguard sensitive information and protect their systems from unauthorized access. Furthermore, educational institutions should establish processes to manage risks effectively and maintain operational resilience. This includes implementing disaster recovery plans, backup systems, and ensuring the scalability and reliability of their IT infrastructure to mitigate potential disruptions. Thus, business intelligence tools, powered by analytics and AI, have transformed the way educational institutions operate and make strategic decisions. By expanding their IT strategies to incorporate these tools, educational institutions can unlock valuable insights, enhance student relationships, and capitalize on opportunities in the digital age. It is crucial for institutions to develop an AI strategy, strengthen cybersecurity measures, and establish processes to manage risks and maintain operational resilience to thrive in an increasingly technology-driven educational landscape.

## **BUSINESS SCHOOL TRANSFORMATION**

In the wake of the pandemic, the business landscape has undergone a significant transformation, necessitating a corresponding evolution in business education. As organizations embrace hybrid work models and confront a widening array of complex challenges, business schools are stepping up to meet the challenge. They are proactively reshaping their programs and pathways to equip students with the necessary skills and knowledge to navigate the ever-changing business environment successfully. Recognizing the shift in work dynamics, business schools are launching online Master of Business Administration (MBA) programs to meet the needs of professionals seeking flexible and accessible education. Online MBAs provide a convenient platform for executives to enhance their business acumen and leadership capabilities while balancing work and personal commitments. These programs leverage technology to create immersive and interactive learning experiences, incorporating virtual collaboration, case studies, and real-world simulations.

Furthermore, business schools are adapting their learning pathways to address the broader expectations placed on today's leaders. The modern business landscape demands a multidisciplinary approach, combining traditional business principles with interdisciplinary knowledge in areas such as technology, sustainability, and social responsibility. Schools are expanding their curricula to integrate courses that delve into emerging fields and equip students with a diverse skill set to tackle contemporary business challenges. In response to the rapidly evolving economy, business schools are also developing specialized programs

that specifically address the unique challenges and opportunities faced by professionals in various sectors. These programs cater to the needs of specific industries or functional areas, providing targeted education that enhances expertise and fosters innovative thinking. Whether it is healthcare management, sustainable business practices, or digital transformation, these programs offer students a deep dive into their respective fields, equipping them with the tools to drive meaningful change within their organizations.

Additionally, business schools are fostering collaborative partnerships with industry leaders and experts to ensure their programs remain relevant and aligned with real-world business practices. These partnerships facilitate knowledge exchange, guest lectures, internships, and consulting projects, enabling executives to bridge the gap between theory and practical application. By integrating industry insights and expertise, business schools can deliver education that is current, practical, and directly applicable to the challenges managers face today. Therefore, as the business landscape undergoes a post-pandemic transformation, business schools are stepping up to the plate, recognizing the need for innovative programs and pathways to address the challenges faced by business professionals. By launching online MBAs, adapting learning pathways, and developing specialized programs, business schools are equipping professionals with the skills, knowledge, and adaptability required to thrive in the evolving world of work. Through collaborative partnerships and a commitment to staying ahead of industry trends, business schools are ensuring that their education remains relevant, practical, and instrumental in shaping the future of business leadership.

Figure 4 illustrates the business schools transformation model. As illustrated in previous sections, educator's digital competency is an all-important factor contributing to the digital strategy of an educational institution. Educators' digital competency is not just a desirable skill; it has become an imperative in today's technologically driven world. Beyond enhancing teaching and learning, EDC has the power to transform the educational experience for both educators and students. Educators with strong digital competency can leverage a wide range of digital tools and technologies to create engaging and interactive learning environments. They can integrate multimedia content, online collaboration platforms, and virtual simulations to provide students with diverse learning experiences that cater to different learning styles. This promotes active participation, critical thinking, and deeper understanding among students, ultimately enhancing their educational outcomes.

In addition to improving teaching practices, educators' digital competency plays a crucial role in fostering digital literacy among students. As technology becomes increasingly ubiquitous, digital literacy is essential for students to navigate the digital landscape effectively. Educators who possess digital competency can guide students in using technology responsibly and ethically, helping them develop the skills needed to critically evaluate online information, protect their digital identities, and navigate digital platforms safely. By modeling good digital practices and incorporating digital literacy into their teaching, educators empower students to become responsible digital citizens, equipping them with skills that are essential for their personal and professional lives. Furthermore, educators' digital competency enables them to adapt to the changing educational landscape and meet the evolving needs of students. The integration of online learning platforms, blended learning models, and virtual classrooms has become increasingly important, especially with the recent disruptions caused by the pandemic. Educators who are digitally competent can seamlessly transition between different modes of instruction, ensuring continuity in education regardless of physical constraints. They can provide flexible learning opportunities that cater to diverse student needs and preferences, fostering an inclusive and accessible learning environment.

In addition, as pandemic forced business to transform at a global scale and expand the IT infrastructure to meet needs of the digital economy, business schools should also transform, and in turn leading to the transformation of the university. By embracing digital tools and approaches, educators can prepare students to thrive in a world where technology is pervasive and rapidly evolving especially business intelligence and analytical tools. Thus, educators' digital competency is instrumental in enhancing teaching and learning, fostering digital literacy, and adapting to the changing educational landscape. By harnessing the power of business intelligence tools and technologies, educators create engaging learning experiences that cater to diverse student needs. They empower students to become responsible digital citizens, equipping them with the skills needed to navigate the digital landscape effectively. Moreover, educators' digital competency enables them to embrace emerging technologies, adapt their instructional practices, and provide students

with flexible and inclusive learning opportunities. By investing in the development of educators' digital competency, educational institutions can ensure that students are well-prepared for the challenges and opportunities of the digital age.

Digital competence has evolved from being a mere tool to becoming a fundamental pedagogical element in the field of education across all levels. Educators should possess the skills and knowledge to effectively manage information and communication technologies (ICT) in their teaching practices. It goes beyond basic technical proficiency; digital competence encompasses the ability to critically evaluate and select appropriate digital tools, integrate them seamlessly into lesson plans, and leverage them to enhance student engagement and learning outcomes. Educators who are digitally competent can create dynamic and interactive learning experiences, leveraging ICT to deliver personalized instruction, promote collaboration, and foster critical thinking skills among students. In addition to its pedagogical significance, digital competence plays a vital role in fulfilling the mission of universities to prepare students for the digital economy. In today's rapidly evolving job market, digital skills are in high demand across various industries. Universities have a responsibility to equip students with the necessary digital competencies that will enhance their employability and bridge the gap between academia and the digital workforce. By incorporating digital competence development into their curriculum and pedagogical strategies, universities can empower students to thrive in the digital economy.

To promote digital competence among educators and students, universities should develop comprehensive plans that include ongoing training and professional development opportunities. This enables educators to continually update their knowledge and skills in using ICT effectively for teaching and learning. Moreover, universities should foster a culture that encourages digital competence, providing resources and support systems that facilitate the integration of digital tools into educational practices. This includes investing in infrastructure, software, and platforms that enable seamless access to digital resources and promote collaboration among faculty and students. Furthermore, universities should collaborate with industry partners to ensure their digital competence initiatives align with the needs and expectations of the digital economy. By engaging with employers, universities can gain insights into the specific digital skills and competencies that are in demand, helping them tailor their programs to meet industry requirements. Internship and co-op programs can also provide valuable experiential learning opportunities for students to apply their digital skills in real-world settings, bridging the gap between academia and industry. Thus, digital competence has evolved into an essential pedagogical element in education, empowering educators to create engaging learning experiences and fostering critical digital skills among students. Universities have a vital role in cultivating digital competence, equipping students with the necessary skills for the digital economy. By developing comprehensive plans that include ongoing training, collaboration with industry partners, and a supportive digital infrastructure, universities can ensure that their graduates are well-prepared for the digital workforce and can effectively contribute to the evolving demands of the digital age.

## **SUMMARY AND CONCLUSION**

We find ourselves in the midst of the Fourth Industrial Revolution, marked by the convergence of advanced technologies like artificial intelligence, the Internet of Things, and robotics. Among these transformative changes, the Digital Revolution has had a profound impact on our lives and professions. The widespread use of mobile devices, the rise of cloud computing, and the influence of social media have revolutionized how we communicate and access information. As a result, the way we live and work has undergone significant shifts. Further, the global pandemic has acted as a catalyst for an unprecedented experiment in education. Educational institutions worldwide have been compelled to swiftly adapt to remote and hybrid models of teaching and learning. The sudden disruption caused by the pandemic has accelerated the integration of technology into education, making digital platforms and tools essential for facilitating learning in these challenging times. Teachers and students alike have had to navigate new digital landscapes, exploring online learning platforms, video conferencing tools, and collaborative technologies to ensure continuity in education. In this study, we expanded the Porter and Millar (1985) model by adding a third dimension of digital tolerance to explain the transformation of the higher education sector's business

model as it undergoes unbundling from the traditional modes of delivery accelerated by the pandemic. Furthermore, this transformative period has highlighted the importance of digital literacy and the ability to adapt to changing circumstances. The ability to navigate digital tools and platforms effectively has become a critical skill for educators and students alike. It is no longer sufficient to rely solely on traditional teaching methods. The digital revolution has presented both challenges and opportunities, pushing educational institutions to embrace innovative approaches and harness the power of technology to enhance teaching and learning outcomes.

As we navigate the complexities of the Fourth Industrial Revolution and the ongoing impact of the pandemic, it is crucial for educational institutions to embrace digital transformation fully. This entails equipping educators with the necessary skills and training to effectively integrate technology into their teaching practices. It also requires fostering digital literacy among students, enabling them to navigate digital resources, critically evaluate information, and collaborate in online environments. By embracing the opportunities offered by the Digital Revolution and leveraging technology to its fullest potential, educational institutions can prepare learners for the digital age and empower them to thrive in an ever-evolving world.

Finally, a robust IT infrastructure is vital for the modern education sector as it enables connectivity, data management, security, and the integration of advanced technologies, revolutionizing the delivery of education. By investing in and maintaining a resilient IT infrastructure, educational institutions can create a dynamic and inclusive learning environment for students. However, it is important for these institutions to go beyond traditional IT strategies and embrace analytical engines and business intelligence tools. This expansion allows them to improve operational efficiency, make data-driven decisions, and gain a competitive edge in the increasingly competitive education sector. Furthermore, the integration of analytics and AI-powered business intelligence tools has significantly transformed how educational institutions operate and make strategic decisions. By incorporating these tools into their IT strategies, institutions can access valuable insights, enhance student relationships, and capitalize on digital opportunities. To thrive in a technology-driven education landscape, institutions must develop an AI strategy, strengthen cybersecurity measures, and establish risk management processes to maintain operational resilience. This study illustrates the evolving business model of higher education, with a focus on the digital tolerance quotient factor. The study explores essential transformative approaches that universities should embrace to thrive in the “new normal” and beyond. Additionally, the study emphasizes the significance of digital competency for both educators and students. Furthermore, we also illustrate the importance of a strong IT infrastructure and the role of digital transformation in bridging the gap between students and employment opportunities in the digital economy.

## REFERENCES

- Allen, J., & van der Velden, R. (2007). Transitions from higher education to work. In *Careers of University Graduates* (pp. 55–78). [https://doi.org/10.1007/978-1-4020-5926-1\\_4](https://doi.org/10.1007/978-1-4020-5926-1_4)
- Amhag, L., Hellstrom, L., & Stigmar, M. (2019). Teacher educators’ use of digital tools and needs for digital competence in higher education. *Journal of Digital Learning and Teaching Education*, 35(4), 203–220. <https://doi.org/10.1080/21532974.2019.1646169>
- Andal-Ancion, A., Cartwright, P.A., & Yip, G.S. (2003). The digital transformation of traditional business. *MIT Sloan Management Review*, 44(4), 34–41.
- Aparicio, S., Urbano, D., & Audretsch, D. (2016). Institutional factors, opportunity entrepreneurship and economic growth: Panel data evidence. *Technological Forecasting and Social Change*, 44(102), 45–61. Retrieved from <http://creativecommons.org/licenses/by-nc-nd/4.0/>
- Arpaci, I., Kilicer, K., & Bardakci, S. (2015). *Effects of security and privacy*.
- Bhatt, G.D. (2000). An empirical examination of the effects of information systems integration on business process improvement. *International Journal of Operations & Production Management*, 20(11), 1331–1359.

- Bozkurt, A., Aras, U., & Sharma, R.C. (2020). Emergency remote teaching in a time of global crisis due to Coronavirus pandemic. *Asian Journal of Education and Training*, 15(1), 1–6.
- Bauman, Z. (2005). Education in liquid modernity. *Review of Education, Pedagogy, and Cultural Studies*, 27(4), 303–317. <https://doi.org/10.1080/10714410500338873>
- Bonfield, C.A., Salter, M., Longmuir, A., Benson, M., & Adachi, C. (2020). Transformation or evolution? Education 4.0, teaching and learning in the digital age. *Higher Education Pedagogies*, 5(1), 223–246. <https://doi.org/10.1080/23752696.2020.1816847>
- Caena, F., & Redecker, C. (2019). Aligning teacher competence frameworks to 21st century challenges: The case for the European digital competence framework for educators (DIGCOMPEDU). *European Journal of Education*, 54(3), 356–369. <https://doi.org/10.1111/ejed.12345>
- Clauss, T., Moussa, A., & Kesting, T. (2018). Entrepreneurial university: A stakeholder-based conceptualization of the current state and an agenda for future research. *International Journal of Technology Management*, 77(1–3), 109–144. <https://doi.org/10.1504/IJTM.2018.091726>
- Conchado, A., Carot, J.M., & Bas, M.C. (2015). Competencies for knowledge management: Development and validation of a scale. *Journal of Knowledge Management*, 19(4), 836–855. <https://doi.org/10.1108/JKM-10-2014-0447>
- Consoli, D. (2008). Services and systemic innovation: A cross-sectoral perspective. *Journal of Institutional Economics*, 3(1), 71–89.
- Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency (TDC) framework. *Education Technology Research and Development*, 68(5), 2449–2472. <https://doi.org/10.1007/s11423-020-09767-4>.
- Ferràs-Hernández, X., Tarrats-Pons, E., & Arimany-Serrat, N. (2017). Disruption in the automotive industry: A Cambrian moment. *Business Horizons*, 60(6), 855–863.
- Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From National Systems and “Mode 2” to a Triple Helix of university-industry-government relations. *Research Policy*, 29(2), 109–123. [https://doi.org/10.1016/S0048-7333\(99\)00055-4](https://doi.org/10.1016/S0048-7333(99)00055-4).
- Forliano, C., De Bernardi, P., & Yahiaoui, D. (2021). Entrepreneurial universities: A bibliometric analysis within the business and management domains. *Technological Forecasting and Social Change*, 165, 120522. <https://doi.org/10.1016/j.techfore.2020.120522>
- Frey, C.B., & Osborne, M.A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change*, 114, 254–280. <https://doi.org/10.1016/j.techfore.2016.08.019>
- Gibb, A. (2002). In pursuit of a new “enterprise” and “entrepreneurship” paradigm for learning: Creative destruction, new values, new ways of doing things and new combinations of knowledge. *International Journal of Management Reviews*, 4(3), 233–269. <https://doi.org/10.1111/1468-2370.00086>
- Gisbert Cervera, M., Gonzalez’ Martinez, J., & Esteve Mon, F.M. (2016). Competencia digital y competencia digital docente: Una panorámica sobre el estado de la cuestión. *Revista Interuniversitaria de Investigación en Tecnología Educativa*, 17, 15–27. <https://doi.org/10.6018/riite2016/257631>
- Gnaur, D., Hindhede, A.L., & Andersen, V.H. (2020). Towards hybrid learning in higher education in the wake of the COVID-19 crisis. *Proceedings of the European Conference on E-Learning*, 205–211. <https://doi.org/10.34190/EEL.20.093>
- Gornitzka, A., Maassen, P., & de Boer, H. (2017). Change in university governance structures in continental Europe. *Higher Education Quarterly*, 71(3), 274–289. <https://doi.org/10.1111/hequ.12127>
- Glazer, R. (1991). Marketing in an information-intensive environment: Strategic implications of knowledge as an asset. *Journal of Marketing*, 55, 1–19.
- Hu, Q., & Quan, J. (2005). The institutionalization of IT budgeting: Empirical evidence from the financial sector. *Information Resources Management Journal*, 19(1), 84–97.

- Holford, W.D. (2019). The future of human creative knowledge work within the digital economy. *Futures*, 105, 143–154. <https://doi.org/10.1016/j.futures.2018.10.002>
- Koo, C., Shin, S., Kim, K., Kim, C., & Chung, N. (2013). Smart tourism of the Korea: A case study. Paper presented at the *Pacific Asia Conference on Information System (PACIS)*, Jeju Island.
- Krishnamurthy, S. (2020). The future of business education: A commentary in the shadow of the Covid-19 pandemic. *Journal of Business Research*, 117, 1–5. <https://doi.org/10.1016/j.jbusres.2020.05.034>
- Lakkala, M., & Ilomaki, L. (2015). A case study of developing ICT-supported pedagogy through a collegial practice transfer process. *Computers and Education*, 90, 1–12. <https://doi.org/10.1016/j.compedu.2015.09.001>.
- Liang, T.P., Lin, C.Y., & Chen, D.N. (2004). Effects of electronic commerce models and industrial characteristics on firm performance. *Industrial Management & Data Systems*, 104(7), 538–545.
- Liesa-Orús, M., Latorre-Coscolluela, C., Vazquez-Toledo, S., & Sierra-Sanchez, V. (2020). The technological challenge facing higher education professors: Perceptions of ICT tools for developing 21st Century skills. *Sustainability*, 12(13), 5339. <https://doi.org/10.3390/su12135339>
- Maçada, A., Gastaud, C., Beltrame, M.M., Dolci, P.C., & Becker, J.L. (2012). IT business value model for information intensive organizations. *Brazilian Administration Review*, 9(1), 44–65. <https://doi.org/10.1590/S1807-76922012000100004>
- Malhotra, R., & Malhotra, D. (2021). Analysing the impact of COVID-19: The evolving business model—An outcome of an overnight virtual revolution. *The New Normal: Challenges of Managing Business, Social and Ecological Systems in the Post COVID 19 Era*.
- Marcelo, C., & Yot-Domínguez, C. (2019). From chalk to keyboard in higher education classrooms: Changes and coherence when integrating technological knowledge into pedagogical content knowledge. *Journal of Further and Higher Education*, 43(7), 975–988. <https://doi.org/10.1080/0309877X.2018.1429584>.
- Núñez Canal, M. (2017). *La Educacion Emprendedora En La Ensenanza Escolar En Espana*. Editorial Universitas.
- O’Byrne, W.I., & Pytash, K.E. (2015). Hybrid and blended learning: Modifying pedagogy across path, pace, time, and place. *Journal of Adolescent and Adult Literacy*, 59(2), 137–140. <https://doi.org/10.1002/jaal.463>
- O’Neill, G., & McMahon, T. (2015). Student-centred learning: What does it mean for students and lecturers. *AISHE*, Dublin.
- Palmer, J.W., & Griffith, D.A. (1998). Information intensity: A paradigm for understanding web site design. *Journal of Marketing Theory and Practice*, 6(3), 38–42.
- Perdomo, B., Gonzalez-Martinez, O.A., & Barrutia Barreto, I. (2020). Competencias digitales en docentes universitarios: Una revision sistemática de la literatura. *Edmetic*, 9(2), 92–115.
- Rodríguez-García, A.M., Raso Sánchez, F., & Ruiz-Palmero, J. (2019). Competencia digital, educacion superior y formacion del profesorado: Un estudio de meta-análisis en la web of science. *Pixel-Bit, Revista de Medios y Educacion*, (54), 65–82. <https://doi.org/10.12795/pixelbit.2019.i54.04>.
- Sadler, T.D., Foulk, J.A., & Friedrichsen, P.J. (2016). Evolution of a model for socio scientific issue teaching and learning. *International Journal of Mathematics, Science and Technology Education*, 5(1), 75. <https://doi.org/10.18404/ijemst.55999>.
- Schwab, K. (2017). The fourth industrial revolution. *World Economic Forum*.
- Tavangarian, D., Leypold, M.E., Nolting, K., Roser, M., & Voigt, D. (2004). Is e-Learning the solution for individual learning? *Electronic Journal of e-Learning*, 2(2), 273–280. Retrieved from <http://wwwra.informatik.uni-rostock.de>
- Tschannen-Moran, M., & Hoy, A.W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783–805. [https://doi.org/10.1016/S0742-051X\(01](https://doi.org/10.1016/S0742-051X(01)
- Voss, R., & Gruber, T. (2006). The desired teaching qualities of lecturers in higher education: A means-end analysis. *Quality Assurance in Education*, 14(3), 217–242. <https://doi.org/10.1108/09684880610678540>

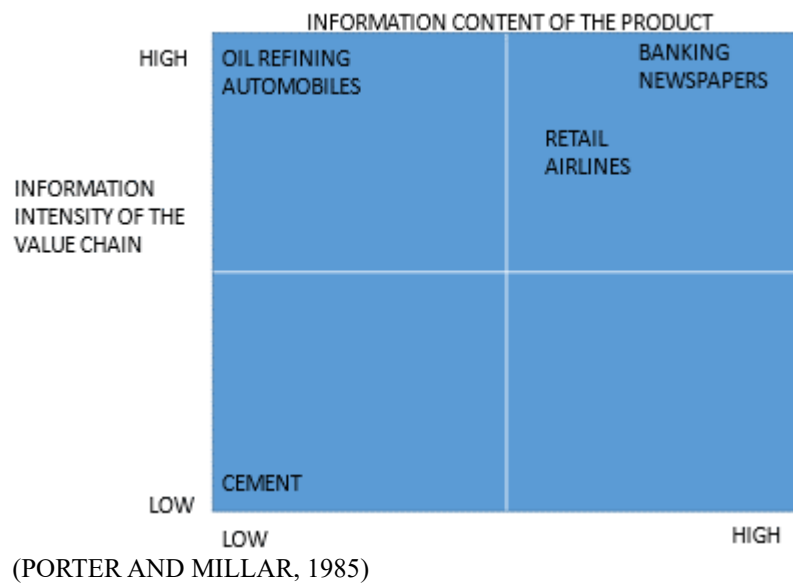
Wakkee, I., van der Sijde, P., Vaupell, C., & Ghuman, K. (2019). The university's role in sustainable development: Activating entrepreneurial scholars as agents of change. *Technological Forecasting and Social Change, 141*, 195–205. <https://doi.org/10.1016/j.techfore.2018.10.013>

Wlodkowski, R.J. (2003). Accelerated learning in colleges and universities. *New Directions for Adult and Continuing Education, 97*, 5–16. <https://doi.org/10.1002/ACE.84>

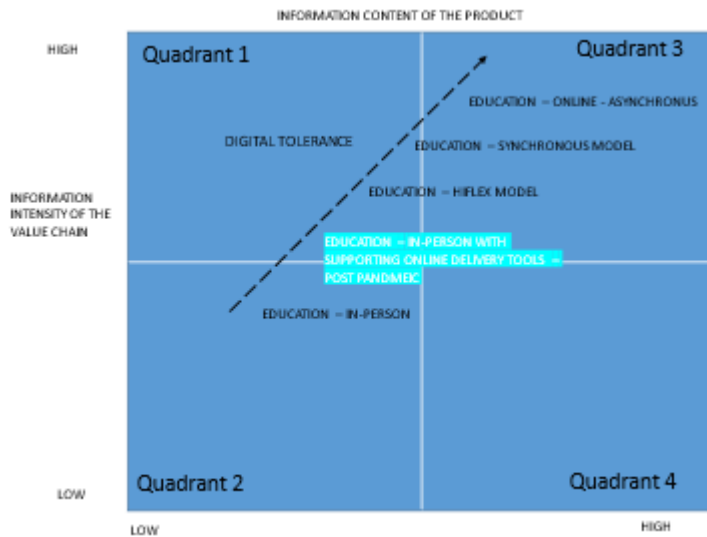
Zimmerman, J. (2020). Coronavirus and the great online-learning experiment. *Chronicle of Higher Education, 66*(25), NPAG-NPAG. Retrieved from <https://www.chronicle.com/article/coronavirus-and-the-great-online-learning-experiment/>

**APPENDIX A**

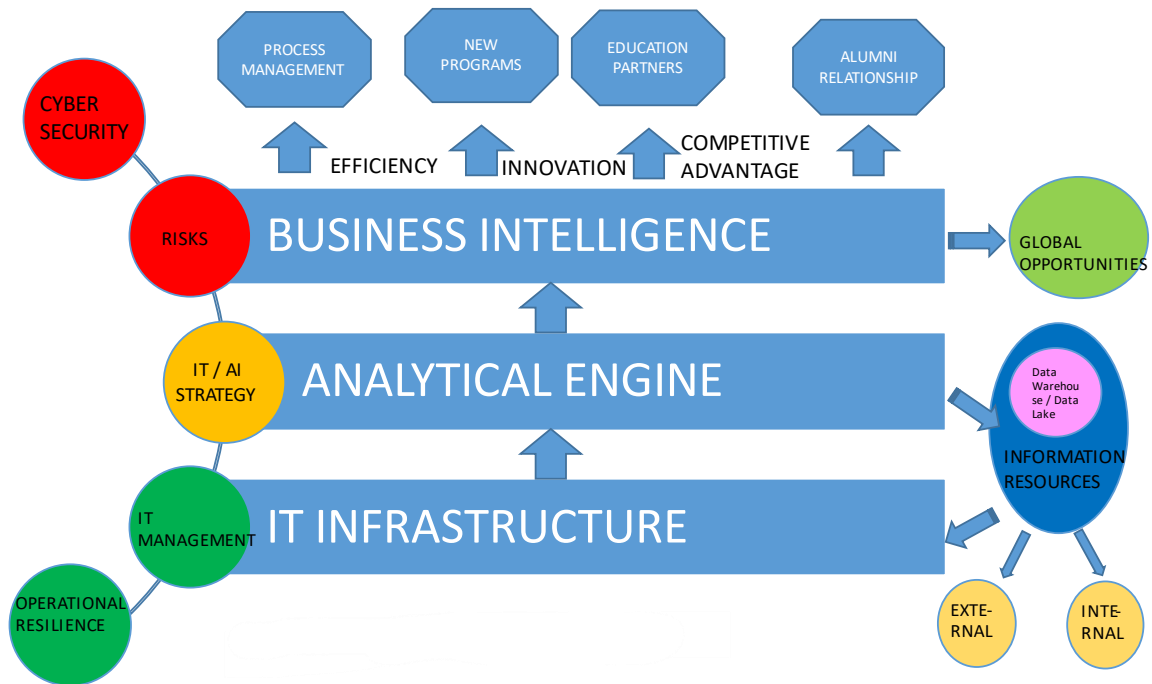
**FIGURE 1  
INFORMATION INTENSITY MATRIX**



**FIGURE 2**  
**INFORMATION INTENSITY MATRIX WITH ADDED DIGITAL TOLERANCE QUOTIENT**  
**FOR THE EDUCATION SECTOR**



**FIGURE 3**  
**DESIGN OF THE IT INFRASTRUCTURE**





**FIGURE 4**  
**BUSINESS SCHOOLS TRANSFORMATION MODEL**

