



The Impact of Digital Transformation on the Future Jobs: Perspectives from Experts in Libyan Telecommunications Companies

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ABSTRACT

Objective – This study aimed to identify the impact of digital transformation on the future of jobs by exploring its effects on the labor market and future occupations.

Methodology – Data were collected from a group of experts working in Libyan telecommunications companies, totaling 59 participants. A descriptive analytical approach was employed to analyze and interpret the data.

Findings – The results revealed that digital transformation has a significant impact on the future of jobs and the quality of skills required, leading to changes in the nature of jobs and their skill requirements. The level of optimism regarding digital opportunities was high (88.1%). However, the findings also indicated that some jobs are expected to disappear (91.5%). Artificial intelligence (84.7%) was identified as the most critical future job field, followed by cybersecurity (64.4%) as one of the most in-demand job areas.

Novelty – The study's novelty lies in providing rare empirical data on digital transformation within the Libyan telecommunications sector, specifically capturing the unique tension between high expert optimism and the projected disappearance of traditional roles. It moves beyond global trends to identify AI and cybersecurity as the localized priority shifts for the Libyan labor market.

Keywords: *digital transformation, employment, telecommunications, future of jobs, skills*

JEL Classification: O33, J23, L96

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I. INTRODUCTION

One of the primary repercussions of digital transformation is job loss, particularly in routine occupations, which are the most vulnerable to automation and technological change. However, the most



realistic future scenario involves the preservation of certain jobs, the restructuring of many others, and the creation of new roles. This study addresses a fundamental issue concerning the future of employment in light of rapid scientific and technological innovations. Given the growing body of research on the impact of technological developments on the future of jobs, this study seeks to shed light on this issue as it affects companies, organizations, and individuals.

New waves of digital transformation threaten to create a more restrictive economic and social environment in which the digital divide affects many people worldwide, potentially excluding those who lack access to or proficiency in digital technologies. This challenge is intensified by the increasing demand for new skills, the need to continuously update existing competencies, and the growing risk of technological unemployment. In this context, global economies are experiencing radical transformations across business sectors, investment patterns, trade, and government activities. Within the digital environment, technologies such as cloud computing, artificial intelligence (AI), smartphones, and mobile applications are reshaping the business sector. Digital transformation is defined as a process aimed at improving an organization by making fundamental changes to its properties through a combination of information, computing, communication, and connectivity technologies (Vial, 2019). Although digital transformation creates new opportunities, it also poses significant challenges, particularly in the labor market. Digital technologies require new skills and competencies and alter how, where, and under what conditions individuals work. Moreover, the adoption of digital technologies often imposes business models that may not adequately support equality and inclusion.

This study focuses on the implications of digital transformation for future jobs and required skills, taking into account issues such as the rise of remote work, job displacement, and emerging future occupations. Accordingly, the research problem is defined by the fact that digital transformation in the telecommunications sector is expected to bring about substantial changes to existing jobs in terms of replacement, skill requirements, and job security, thereby creating a sense of uncertainty among employees in these companies. The research problem is addressed through the following questions: (1) Does digital transformation impact the future of jobs in Libyan telecommunications companies? (2) What are the most significant challenges facing the digital transformation process in Libyan telecommunications companies? (3) How can successful preparation for digital transformation be achieved in Libyan telecommunications companies?

II. LITERATURE REVIEW

Digital Transformation

Digital transformation and big data analytics capabilities enable organizations to adapt to rapidly changing markets, innovate, and maintain competitiveness in the digital age (Butt et al., 2024). Digital transformation also requires a clear strategic vision (Emran et al., 2025). Digital transformation is the use of digital technologies to improve the efficiency and effectiveness of processes (Emran & Elhony, 2023). The term *transformation* refers to the ability of organizations to take necessary actions when confronted with new technologies and should not be confused with simple or incremental change (Singh & Hess, 2017). Digital transformation represents a shift in the activities of individuals and organizations through the application of digital technologies to achieve substantial improvements in business processes, user experiences, and the development of new business models (Abdulquadri et al., 2021). Digital transformation has profound effects on institutions across various sectors (Emran & Elhony, 2025).

The rise of information and communication technology (ICT) has played a crucial role in reshaping the global economic landscape (Ode et al., 2025). A more specific definition of digital transformation refers to the use of digital ICTs to bring about changes in commercial sectors, ensuring effectiveness in generating



new revenue streams and stimulating opportunities for value creation (Rego et al., 2023). Digital transformation is also viewed as a process aimed at enhancing competitive advantage (Reis et al., 2020). The core elements of digital transformation include technology, human competencies (skills), and appropriate organizational strategies. Accordingly, organizations undergoing digital transformation require a clear strategy, an appropriate methodological framework, and relevant competencies to establish an effective digital transformation system. This enables organizations to systematically promote change and accelerate innovation within a context of continuous development (Teng et al., 2022). Consequently, digital transformation has become essential for enhancing organizational performance in today's highly competitive business environment (Malodia et al., 2023).

The Future of Jobs

The world is experiencing an advanced technological shift that is expected to significantly alter the structure of labor demand (Hötte et al., 2023). User resistance or non-acceptance of technological systems is considered a major barrier to the successful implementation of such systems. The Technology Acceptance Model (TAM) serves as a robust framework for understanding user adoption of new technologies and has been widely applied across sectors such as telecommunications, education, and healthcare (Lee et al., 2025). The technology-driven labor market has undergone substantial changes in recent years, largely due to rapid technological advancements that have created new demands for highly skilled professionals. These evolving skill requirements have contributed to a growing gap between organizational needs and the qualifications available in the labor market (Goulart et al., 2021). The World Economic Forum Report's (2025) The Future of Jobs Report 2025 predicts that more than 75% of companies plan to adopt artificial intelligence over the period 2023–2027. In addition, estimates by Manyika et al. (2017) suggest that automation may generate up to 250 million new jobs by 2030. Continuous and accelerating progress in digital technologies is expected to transform, and in some cases eliminate, jobs currently performed by humans (Ford, 2015). As a result, many job tasks will undergo radical changes, requiring workers to adapt by acquiring new skills (Spencer, 2018). Future workforces will need a combination of technical, soft, and leadership skills to effectively manage these transitions and support organizational sustainability (Ewim et al., 2021). Tyson and Zysman (2022) found that future labor markets will experience declining demand for traditional skills alongside increasing demand for advanced cognitive, social, behavioral, and technological competencies. The Future of Jobs Report 2025 indicates that approximately 170 million new jobs are expected to be created by 2030, while 92 million jobs are projected to be eliminated (World Economic Forum Report, 2025). The report further emphasizes that technological development is reshaping labor markets, with certain occupations experiencing rapid growth. Notably, there is increasing demand for technology-driven roles such as Big Data specialists, FinTech engineers, and artificial intelligence and machine learning specialists (World Economic Forum Report, 2025). Rainie and Anderson (2017) recommended that governments establish centralized workforce strategy units to analyze labor supply and demand trends, identify skill gaps across sectors, and develop policies to address these challenges.

III. METHODOLOGY

The gap between highly qualified workers and those with limited technological knowledge is widening. Therefore, this study aimed to determine the impact of digital transformation on the future of jobs, as well as on future skill requirements. A descriptive analytical approach was adopted to achieve the objectives of the study. The questionnaire was used as the primary data collection instrument and was administered to a carefully selected group of experts from Libyan telecommunications companies (N = 59). The sample focused on managers and heads of departments who have held various professional positions



within these companies. The significance of the study lies in its contribution to understanding the variables affecting the labor market, supporting the development of policies that promote digital transformation, improving prospects for future employment, and enhancing organizational performance.

IV. RESULTS AND DISCUSSION

Table 1 presents the distribution of participants according to their years of professional experience. As shown in Table 1, the majority of participants possess extensive experience in Libyan telecommunications companies, with professional experience ranging from 15 to more than 33 years. This level of experience enhances the reliability of their responses and supports the validity of relying on their opinions and expertise when formulating policies and strategies related to digital transformation.

Table 1 Participants' Level of Experience (in Years)

No.	Years of Experience	Frequency
1	15–20	9
2	21–26	14
3	27–32	21
4	33 and above	15

Question 1: Do You Believe That Digital Transformation Affects Your Current Job?

The results, related to the question “*Do you believe that digital transformation affects your current job?*” indicate that the majority of respondents believe that digital transformation has a direct impact on their current work. This finding reflects a general awareness among employees in Libyan telecommunications companies of the influence of digital transformation on the nature of existing jobs.

Given that the study hypothesizes that digital transformation contributes to changes in future job requirements, this result supports the assumption that employees are beginning to recognize the ongoing transformation of work processes. The high percentage of positive responses (Yes = 73.3%) demonstrates widespread awareness of changes in job tasks and required skills resulting from the introduction of digital technologies in the workplace.

Question 2: What Digital Skills Do You Believe Are Most Important in the Future?

Participants identified the following digital skills as most important for the future: programming skills (66.1%), analysis skills (40.7%), communication skills (42.4%), teamwork skills (25.4%), and problem-solving skills (28.8%). These results indicate that programming and analytical skills are perceived as the most critical future digital competencies. The emphasis on advanced technical skills, particularly programming and data analysis, aligns with global labor market trends. The World Economic Forum's (2025) The Future of Jobs Report 2025 confirms that artificial intelligence and big data skills are among the fastest-growing and most in-demand skills worldwide.

Moreover, the strong focus on programming and analytical skills suggests that participants perceive future jobs as requiring high levels of technical competence. This perception reinforces expectations of a shift in job requirements toward more digitally oriented skill sets.

**Question 3: Do You Believe There Are Opportunities for Digital Transformation in Your Field?**

The results show that 88.1% of participants believe that there are opportunities for digital transformation in their respective fields. This high level of optimism reflects a positive attitude toward technological development within the Libyan telecommunications sector and indicates openness to future digital initiatives. The perception of available opportunities suggests that organizational structures and work processes are likely to evolve, leading to corresponding changes in job requirements. This positive outlook implies that employees do not view digital transformation solely as a threat to employment but also as an opportunity for the creation of new roles and the development of diverse skill sets.

Question 4: What Are the Challenges Faced in Digital Transformation?

Participants identified the most significant challenges to digital transformation as a shortage of specialized skills, followed by a lack of resources and resistance to change. The shortage of skilled personnel highlights the growing need for continuous learning and skills development to meet future job demands. Similarly, limited resources, including technical and financial capabilities, were perceived as major obstacles to successful digital transformation. Resistance to change represents both a human and organizational challenge, potentially slowing the adoption of new technologies. Collectively, these challenges may limit the speed and depth of the impact of digital transformation on employment. The findings suggest that changes in job requirements are not automatic and depend largely on addressing these barriers through targeted training, investment, and change management strategies.

Question 5: Do You Believe Technology Will Affect Your Job in the Future?

The findings indicate that 66.1% of participants expect technology to affect their jobs in the future. This result supports the study's hypothesis that digital transformation will play a significant role in reshaping future job requirements. It also reflects participants' anticipation of substantial technological changes in the work environment. This perspective aligns with global forecasts suggesting that approximately 22% of current jobs may undergo restructuring or elimination due to technological advancements by 2033. The findings are also consistent with Moldoveanu (2022), who argues that automation is likely to replace many forms of manual labor, necessitating educational reform and the adoption of lifelong learning strategies to develop new skills.

Question 6: Which Jobs Do You Believe Will Be Most in Demand in the Future?

Participants identified the most in-demand jobs as follows: AI specialists (84.7%), cybersecurity specialists (64.4%), big data specialists (42.4%), and renewable energy engineers (33.9%). These results indicate that participants view future employment as centered on digital technologies and emerging scientific fields.

AI specialization emerged as the top priority, consistent with global labor market trends in which AI-related roles are among the fastest-growing occupations. Cybersecurity was also highlighted as a critical field in an era of increasing digitization. Although renewable energy engineering received a lower percentage than other fields, it represents an emerging area contributing to evolving labor market demands. Big data specialists were similarly prominent (42.4%), reflecting the importance of a data-driven economy.

Overall, participants believe that future job requirements will be shaped by digital transformation, signaling the need for targeted changes in curricula or government training initiatives to meet these evolving demands.

**Question 7: Do You Believe There Are Jobs That Will Disappear Due to Technology?**

This question measured the extent to which participants believe technology will lead to the disappearance of certain jobs. A majority of respondents (91.5%) indicated that some jobs are likely to disappear due to technological advancement.

This perception suggests that technological transformation not only introduces new roles but also eliminates certain traditional jobs. This finding aligns with studies indicating the decline of routine positions, such as clerical work or production-line tasks, by 2030, which will be replaced by jobs requiring advanced technical competencies (Ionescu, 2019). Laato et al. (2021) further confirm that the demand for digital skills will increase across sectors, while reliance on manual labor will diminish.

Question 8: Do You Believe You Are Prepared for the Future of Jobs?

The analysis showed that the majority of participants (72.9%) feel confident in their readiness for future employment, despite expectations of a changing work environment. This confidence likely reflects their engagement in preparatory activities. The result indicates that most participants perceive themselves as either well-positioned or at least aware of the skills and competencies required to meet future demands, which may be related to their higher education levels and participation in ongoing professional learning.

Question 9: What Steps Are You Taking to Prepare for the Future of Jobs?

Study results indicate that 88.1% of participants recognize the importance of acquiring new skills consistent with anticipated job requirements, such as programming and analytical competencies. This finding demonstrates a proactive approach by employees toward digital transformation, reflecting a willingness to adapt to future work requirements. These data suggest that participants are not merely passive observers of change but actively engage in skill development, strengthening their confidence in meeting evolving labor market demands. Vuchkovski et al. (2023) emphasize that excellence in a digital work environment depends on the development of employee skills, infrastructure, available technologies, and work routines; the absence of any of these components can exacerbate the digital divide. Similarly, Hoe (2025) highlights the necessity for organizations to continuously develop and rehabilitate workforce skills to maintain a competitive advantage.

Discussion

The results strongly support the study's hypothesis. Participants anticipate significant changes in the labor market due to digital transformation, viewing technologies such as AI and big data as central to reshaping job requirements. Respondents believe these technologies will impact both current and future employment, and a majority expect the disappearance of traditional jobs.

These findings are consistent with Muro et al. (2019), who note that all occupations will be affected by technological change, with routine jobs being most vulnerable. Beyond potential job losses, the most realistic scenario involves the preservation of some positions, the restructuring of many, and the creation of new roles. The study also aligns with Schilirò (2021), who concluded that there will be increasing demand for new skills and that core competencies required for current jobs will change significantly. Within the next two decades, 90% of jobs are expected to require digital skills. Participants' selections of high-demand jobs and skills, such as AI specialists, cybersecurity, and data analysis, mirror global labor market trends, including those highlighted in The Future of Jobs Report 2025 (World Economic Forum Report, 2025). Furthermore, the results indicate optimism regarding opportunities for digital transformation in participants' work fields (88.1%), reflecting the sector's readiness to engage with technological change. At the same time, challenges were acknowledged, including skill and resource shortages and resistance to



change. These obstacles must be addressed for digital transformation to achieve its full impact. Participants demonstrated proactive measures—learning new skills, adapting to changes, and keeping up with technological developments—enhancing the likelihood of successful adaptation and skill utilization. Overall, the findings confirm that digital transformation will significantly alter future job requirements in the Libyan telecommunications sector. Participants anticipate both quantitative and qualitative changes in the labor market and identified key emerging occupations, including AI, cybersecurity, and data analysis. Achieving the full impact of digital transformation will require comprehensive preparation, skill acquisition, and mitigation of environmental challenges.

V. CONCLUSION

This study investigated the impact of digital transformation on the future of jobs and provided a research framework that can guide future studies. Findings indicate that digital transformation significantly affects the nature of jobs and required skills, while simultaneously creating new employment opportunities in fields such as AI, big data, and cybersecurity. Conversely, some traditional jobs are likely to disappear, highlighting the need for employees to develop new skills, including programming, analytical reasoning, and problem-solving competencies. The results underscore the importance of preparing for digital transformation to leverage its benefits while addressing its challenges. Organizations and governments should adopt strategies to enhance skill development in alignment with technological advancements, and curricula or training programs should be adapted accordingly.

Limitations and Future Research

Despite the valuable insights gained from this study, certain limitations must be acknowledged. First, the study was conducted at a single point in time using a purposive sample of experts from Libyan telecommunications companies, which limits the generalizability of the findings. To enhance generalizability, future research should include larger and more diverse samples. Second, longitudinal studies incorporating multiple data collection points and interventions would be valuable to determine whether digital transformation exerts sustained effects on the future of jobs. Future research may also explore sector-specific variations and investigate the effectiveness of training initiatives in preparing workforces for evolving digital demands.

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