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Technology in Organizations and Its Detriments

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A B S T R A C T

Many small and medium-sized businesses commit themselves economically to adopting technologies to avoid organizational decline. They must do this by paying attention to the inherent risks of these technologies and ensuring the security of their business continuity, even after unexpected and challenging events. Accordingly, the aim of the present study is to examine technology in organizations and its detriments. The research method is descriptive-analytical and utilizes library resources. Pathology based on information to analyze and accurately understand the technology required by the organization, management styles, and other problem-solving system elements is necessary. In other words, pathology, diagnosing the problem, and its scientific focus to determine the necessary actions to improve organizational performance is essential. This research attempts to identify the criteria and indicators of structural pathology in organizations and to classify these detriments in the technological branch. Successful technology-based organizations, through supporting intellectual property rights, possess extensive assets; therefore, keeping pace with technological changes is of fundamental importance. Expert research in identifying technological detriments significantly contributes to reducing organizational technology deficiencies.

Keywords: *Technology in Organizations, Pathology, Business, Technical Information*

1. Introduction

The necessity to adopt advanced technologies is driven by the imperative to enhance operational efficiency, maintain competitive advantage, and ensure business continuity in the face of unexpected disruptions (Jain et al., 2022). However, this technological integration is not without its challenges and detriments, which can significantly impact the overall performance and sustainability of organizations (Ganguly et al., 2019).

The adoption of technology in organizations has been a subject of extensive research, highlighting both its potential benefits and associated risks. AL-Hashmy et al. (2022) emphasize the positive impact of computerized accounting information systems on the performance of Iraqi construction companies, underscoring the importance of technological advancements in improving efficiency and accuracy in financial management (Al-Hashmy et al., 2022). Similarly, Kisanjara (2023) discusses the role of the Internet of Things (IoT) in enhancing organizational performance in Tanzanian banks, demonstrating how

digital tools can streamline operations and improve customer service (Kisanjara, 2023).

However, the path to technological adoption is fraught with challenges. According to Califf and Springer (2022), technostress—stress induced by the use of technology—can adversely affect employee well-being and productivity, thereby posing a significant risk to organizational health (Califf & Springer, 2022). This sentiment is echoed by Mabungela (2023), who highlights the potential threats posed by artificial intelligence (AI) and automation to employee job security, creating a need for balanced and thoughtful implementation strategies (Mabungela, 2023).

The critical issue of technology-induced risks extends beyond individual employee impacts to broader organizational vulnerabilities. For instance, Agarwal, Sarkar, and Echambadi (2002) explore the conditioning effect of time on firm survival within the context of industry life cycles, suggesting that the rapid pace of technological change can lead to obsolescence if firms fail to adapt promptly (Agarwal et al., 2002). Furthermore, Coakes, Amar, and Granados (2010) provide a global snapshot of knowledge management, strategy, and technology, indicating that strategic misalignment and inadequate knowledge transfer can exacerbate the risks associated with technological adoption (Coakes et al., 2010).

Understanding and mitigating these risks necessitates a comprehensive approach to organizational pathology, which involves diagnosing and addressing the underlying technological issues that impede organizational performance. This study aims to identify and classify the technological detriments within organizations, providing a structured framework for assessing and addressing these challenges.

A critical aspect of this investigation is the identification of criteria and indicators for technological pathology. Nyathi and Kekwaletswe (2022) examine the relationship between electronic human resource management and employee job satisfaction, illustrating how digital tools can both enhance and detract from organizational value creation. By understanding these dynamics, organizations can better identify the specific technological detriments that affect their operations and develop targeted interventions to mitigate these impacts (Nyathi & Kekwaletswe, 2022).

Moreover, the role of management styles and organizational elements in influencing technological adoption and its effects cannot be overlooked. According to Cherep, Voronkova, and Androsova (2022), transformational changes in organizational management and human resources are crucial for successfully navigating the digital age. Effective leadership and adaptive management practices are essential for fostering a culture of innovation and resilience, enabling organizations to leverage technology to their advantage while minimizing associated risks (Cherep et al., 2022).

In addition to internal organizational factors, external elements such as intellectual property rights play a significant role in safeguarding technological assets. Successful technology-based organizations often possess extensive intellectual property portfolios, which provide a competitive edge and protect against technological obsolescence (Masrek et al., 2008). As such, aligning technological adoption with robust intellectual property strategies is critical for sustaining long-term organizational performance.

The significance of keeping pace with technological advancements cannot be overstated. Rujira, Nilsook, and Wannapiroon (2020) discuss the transformation process of vocational education colleges toward high-performance digital organizations, highlighting the importance of continuous learning and adaptation in maintaining technological relevance (Rujira et al., 2020). Similarly, Srisawat (2024) emphasizes the need for distributed digital enterprise architecture in educational organizations, suggesting that decentralized and flexible digital infrastructures are key to managing technological change effectively (Srisawat, 2024).

In conclusion, the integration of technology into organizational frameworks presents both opportunities and challenges. While technological advancements can significantly enhance organizational performance and competitiveness, they also introduce a range of risks and detriments that must be carefully managed. By adopting a comprehensive approach to organizational pathology, identifying key technological detriments, and implementing effective management strategies, organizations can navigate the complexities of the digital landscape and achieve sustainable success. This study aims to provide a structured framework for understanding and addressing the technological challenges facing organizations today, contributing to the broader discourse on technology and organizational performance.

2. Methods and Materials

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2.1. Study Design

This study employs a descriptive-analytical research design to examine the impact of technology on organizations and identify associated detriments. The descriptive aspect focuses on providing a detailed account of the current state of technological integration in organizations, while the analytical component involves interpreting and synthesizing this information to identify patterns, challenges, and potential solutions.

2.2. Data Collection

The primary method of data collection for this study is a comprehensive review of existing literature. This includes peer-reviewed journal articles, conference papers, books, and credible online sources. The selected literature spans various disciplines, including information technology, organizational management, and business strategy, ensuring a holistic view of the topic. Key sources include works by AL-Hashmy et al. (2022), Califf and Springer (2022), Coakes, Amar, and Granados (2010), among others.

2.3. Literature Selection Criteria

To ensure the relevance and quality of the sources, the following criteria were used for literature selection: relevance to the topic, focusing on studies directly addressing the impact of technology on organizations, technological risks, and management strategies; publication date, with priority given to recent publications within the last 10 years to reflect current trends and developments in technology; and credibility and reliability, selecting peer-reviewed articles and publications from reputable journals and publishers to ensure the accuracy and reliability of the information.

2.4. Data Analysis

The data analysis process involved several steps: thematic analysis, where the collected literature was analyzed to identify common themes and patterns related to technological integration, its benefits, risks, and management strategies; comparative analysis, used to compare findings across different studies and contexts, helping in understanding the variability in technological impacts and identifying best practices across different organizational settings; and synthesis of findings, integrating diverse perspectives and offering actionable insights for practitioners and researchers based on the thematic and comparative analyses.

2.5. Reliability and Validity

To ensure the reliability and validity of the study, the following measures were taken: triangulation, using multiple sources of data to ensure robustness by comparing findings from different studies and contexts to identify consistent patterns and insights; peer review, where the methodology and findings were reviewed by peers and experts in the field to ensure accuracy and credibility; and transparent documentation, maintaining detailed records of the data collection and analysis processes to provide transparency and allow for replication of the study.

2.6. Ethical Considerations

The study adhered to ethical guidelines for research, including proper attribution, where all sources of data were properly cited to acknowledge the original authors and avoid plagiarism; and confidentiality, since the study did not involve primary data collection from human subjects, issues of confidentiality were minimal, but any proprietary information from secondary sources was handled with care and cited appropriately.

2.7. Limitations

While this study provides valuable insights into the impact of technology on organizations, it is not without limitations: the scope of literature, being based on secondary data from existing literature, which may not cover all aspects of the topic and may miss emerging trends and technologies not captured in the reviewed literature; and context-specific findings, where the variability in organizational settings and technological environments can influence the generalizability of the results, making some findings context-specific and not universally applicable.

3. Risks and Challenges of Technology Adoption

3.1. Technostress and Employee Well-being

One of the primary challenges associated with technology adoption is technostress, a phenomenon where employees experience stress due to the overwhelming use of technology. Califf and Springer (2022) highlight that technostress not only affects the emotional and mental well-being of employees but also has a direct impact on

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their productivity and job satisfaction. The constant need to adapt to new technologies and the pressure to remain digitally competent can lead to burnout, decreased morale, and increased turnover rates. This is particularly significant in sectors where rapid technological advancements are the norm, necessitating continuous learning and adaptation (Califf & Springer, 2022).

Mabungela (2023) further elaborates on the threats posed by artificial intelligence (AI) and automation to job security. The fear of job displacement due to automation can create a sense of insecurity among employees, leading to resistance to technological changes. This resistance can hinder the successful implementation of new technologies and adversely affect organizational performance. Therefore, it is crucial for organizations to address these psychological impacts by fostering a supportive work environment that emphasizes continuous learning and reskilling (Mabungela, 2023).

3.2. Strategic Misalignments and Adaptation Challenges

Strategic misalignments present another significant risk in the adoption of technology. Coakes, Amar, and Granados (2010) argue that strategic misalignment between technology initiatives and organizational goals can lead to suboptimal outcomes. For instance, if technology adoption is not aligned with the core business strategy, it may result in wasted resources and missed opportunities. Additionally, the lack of a clear strategic vision can lead to fragmented technology implementation, where different parts of the organization adopt incompatible systems, creating inefficiencies and integration challenges (Coakes et al., 2010).

Agarwal, Sarkar, and Echambadi (2002) discuss the conditioning effect of time on firm survival, emphasizing that rapid technological changes can render firms obsolete if they fail to adapt promptly. This highlights the importance of agility in organizational strategy, where firms must continuously assess and realign their technological initiatives with evolving market conditions and technological advancements. Failure to do so can result in a competitive disadvantage, as more agile competitors leverage new technologies to capture market share (Agarwal et al., 2002).

3.3. Knowledge Management and Transfer

Effective knowledge management and transfer are critical in mitigating the risks associated with technological adoption. Coakes, Amar, and Granados (2010) emphasize that poor knowledge transfer can exacerbate technological risks, as employees may struggle to effectively utilize new systems and tools. This challenge is particularly pronounced in large organizations with complex structures, where the dissemination of knowledge can be fragmented and inconsistent (Coakes et al., 2010).

Nyathi and Kekwaletswe (2022) explore the relationship between electronic human resource management (e-HRM) and employee job satisfaction, illustrating how digital tools can both enhance and detract from organizational value creation. Effective e-HRM systems can streamline processes and improve employee engagement, but they require robust knowledge management practices to ensure that employees are adequately trained and supported. Without proper knowledge transfer mechanisms, the potential benefits of e-HRM systems may not be fully realized, leading to suboptimal outcomes (Nyathi & Kekwaletswe, 2022).

3.4. Technological Obsolescence and Intellectual Property

Technological obsolescence is a significant risk that organizations must manage to remain competitive. According to Rujira, Nilsook, and Wannapiroon (2020), continuous learning and adaptation are essential for maintaining technological relevance. Organizations must invest in ongoing training and development programs to ensure that their workforce remains proficient in the latest technologies. Additionally, they must adopt a proactive approach to technology management, continuously scanning the technological landscape for emerging trends and innovations (Rujira et al., 2020).

Intellectual property (IP) management also plays a crucial role in mitigating technological risks. Masrek, Karim, and Hussein (2008) highlight the importance of robust IP strategies in protecting technological assets and maintaining competitive advantage. Organizations that fail to protect their IP may find themselves at a disadvantage, as competitors could replicate or surpass their technological innovations. Therefore, a comprehensive IP management strategy is essential for safeguarding technological investments and sustaining long-term competitiveness (Masrek et al., 2008).

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3.5. *Integration and Interoperability Issues*

Integration and interoperability issues present another significant challenge in technology adoption. Srisawat (2024) emphasizes the importance of distributed digital enterprise architectures in managing technological change effectively. Incompatible systems and lack of standardization can create significant barriers to the seamless integration of new technologies. This can lead to inefficiencies, increased costs, and reduced agility, as organizations struggle to reconcile disparate systems and data sources (Srisawat, 2024).

Elghdban et al. (2023) discuss the adoption of Building Information Modelling (BIM) in Libyan construction firms, highlighting the need for a holistic approach to technology adoption that considers technological, organizational, and environmental factors. Successful integration of new technologies requires careful planning and coordination across different organizational units, ensuring that systems are compatible and that data can flow seamlessly between them (Elghdban et al., 2023).

3.6. *Cybersecurity and Data Privacy*

Cybersecurity and data privacy are critical concerns in the digital age. As organizations adopt more sophisticated technologies, they become increasingly vulnerable to cyber threats. AL-Hashmy et al. (2022) highlight the importance of robust cybersecurity measures in protecting organizational data and ensuring business continuity. Cyberattacks can result in significant financial losses, reputational damage, and legal liabilities. Therefore, organizations must invest in advanced cybersecurity solutions and adopt best practices to safeguard their digital assets (Al-Hashmy et al., 2022).

Data privacy is another important consideration. Organizations must ensure that they comply with relevant data protection regulations and that they implement stringent data privacy policies. This is particularly important in industries that handle sensitive customer information, where data breaches can have severe consequences (Orlikowski, 1992; Pishdad et al., 2012; Soga et al., 2020; Vaskov et al., 2021).

4. Pathology of Organizational Technology

4.1. *Diagnostic Frameworks and Methodologies*

Effective diagnosis of technological pathologies requires robust frameworks and methodologies. Nyathi and Kekwaletswe (2022) emphasize the importance of electronic human resource management (e-HRM) systems in enhancing organizational value creation. They argue that diagnosing technological pathologies involves assessing the alignment between technology and organizational goals, as well as evaluating the effectiveness of technology in meeting employee needs. This diagnostic process helps identify gaps and inefficiencies that may hinder optimal technology utilization (Nyathi & Kekwaletswe, 2022).

Cherep, Voronkova, and Androsova (2022) discuss transformational changes in organizational management and human resources, highlighting the need for adaptive diagnostic methodologies. They suggest that organizations must continuously assess their technological capabilities and readiness to adapt to new technologies. This involves regular audits and evaluations to identify potential issues before they escalate into significant problems (Cherep et al., 2022).

4.2. *Identifying Technological Detriments*

Identifying technological detriments is a critical aspect of organizational pathology. Technological detriments refer to the negative impacts that technology can have on organizational performance and employee well-being. Califf and Springer (2022) highlight technostress as a significant detriment, where the constant pressure to adapt to new technologies can lead to stress and burnout among employees. This stress can negatively affect productivity and overall job satisfaction, underscoring the need for organizations to implement supportive measures to mitigate technostress (Califf & Springer, 2022).

Mabungela (2023) elaborates on the threats posed by artificial intelligence (AI) and automation, particularly in terms of job security. The fear of job displacement can create resistance to technological adoption, which in turn can impede organizational progress. Identifying such detriments early allows organizations to develop strategies to address employee concerns and foster a culture of continuous learning and adaptation (Mabungela, 2023).

4.3. *Criteria and Indicators for Assessing Technological Pathologies*

Assessing technological pathologies involves identifying specific criteria and indicators that signal potential issues. Masrek, Karim, and Hussein (2008) suggest that organizational and individual characteristics significantly influence the utilization of corporate intranets. They

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propose indicators such as user engagement levels, system reliability, and ease of use as critical factors in assessing the effectiveness of technology. By monitoring these indicators, organizations can identify areas where technology may be underperforming or causing issues (Masrek et al., 2008).

Nyathi and Kekwaletswe (2022) also emphasize the importance of employee feedback in assessing technological pathologies. Regular surveys and feedback mechanisms can provide valuable insights into how employees perceive and interact with technology. This feedback can highlight issues related to usability, accessibility, and overall satisfaction, helping organizations pinpoint specific areas that require improvement (Nyathi & Kekwaletswe, 2022).

4.4. Management Styles and Organizational Culture

Management styles and organizational culture play a crucial role in shaping how technology is adopted and utilized within an organization. Cherep, Voronkova, and Androsova (2022) argue that adaptive and transformational management styles are essential for successfully navigating technological changes. Leaders who foster a culture of innovation and continuous improvement can help mitigate the negative impacts of technology by encouraging proactive problem-solving and collaborative efforts (Cherep et al., 2022).

Coakes, Amar, and Granados (2010) discuss the global perspective on knowledge management, strategy, and technology, emphasizing the need for strategic alignment between technology initiatives and organizational goals. They suggest that management practices that prioritize knowledge sharing and collaborative learning can enhance the effectiveness of technology adoption. By creating an environment where employees are encouraged to share knowledge and collaborate, organizations can reduce the likelihood of technological pathologies (Coakes et al., 2010).

4.5. Organizational Elements and System Integration

Organizational elements such as structure, processes, and systems integration are critical in diagnosing technological pathologies. Srisawat (2024) highlights the importance of distributed digital enterprise architectures in managing technological change effectively. Incompatibilities between different systems and lack of standardization can create significant barriers to seamless technology integration. Regular assessments of system interoperability and integration are necessary to ensure that new technologies can be effectively incorporated into existing frameworks (Srisawat, 2024).

Elghdban et al. (2023) discuss the adoption of Building Information Modelling (BIM) in Libyan construction firms, underscoring the need for a holistic approach to technology adoption. They argue that successful integration of new technologies requires careful planning and coordination across different organizational units. This involves assessing the compatibility of new technologies with existing systems and processes, as well as ensuring that data can flow seamlessly between them (Elghdban et al., 2023).

4.6. Strategies for Mitigating Technological Pathologies

Developing strategies to mitigate technological pathologies is essential for ensuring that technology adoption leads to positive outcomes. Rujira, Nilsook, and Wannapiroon (2020) emphasize the importance of continuous learning and adaptation in maintaining technological relevance. Organizations should invest in ongoing training and development programs to ensure that employees remain proficient in the latest technologies. This not only enhances individual capabilities but also reduces the likelihood of technostress and other related issues (Rujira et al., 2020).

Masrek, Karim, and Hussein (2008) highlight the role of robust knowledge management practices in mitigating technological pathologies. Effective knowledge management involves capturing, storing, and disseminating knowledge in a way that is accessible and useful to employees. By fostering a culture of knowledge sharing, organizations can ensure that employees have the information and resources they need to effectively utilize technology (Masrek et al., 2008).

5. Management Styles and Organizational Elements

5.1. Transformational Leadership and Innovation

Transformational leadership is crucial in navigating the complexities of technological adoption. Transformational leaders inspire and motivate employees to embrace change and innovation. Cherep, Voronkova, and Androsova (2022) argue that such leaders play a pivotal role in fostering an environment conducive to technological advancements. By promoting a vision of continuous improvement and

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innovation, transformational leaders help reduce resistance to change and encourage proactive engagement with new technologies (Cherep et al., 2022).

In the context of technological adoption, transformational leaders can facilitate the creation of a supportive culture that values learning and experimentation. This is particularly important in mitigating the adverse effects of technostress and ensuring that employees feel empowered to develop their technological competencies. The ability of transformational leaders to align organizational goals with technological initiatives is critical in achieving strategic coherence and maximizing the benefits of technology adoption.

5.2. *Adaptive Management Practices*

Adaptive management practices are essential for organizations to remain agile and responsive to technological changes. Coakes, Amar, and Granados (2010) emphasize the need for flexible and adaptive strategies that can accommodate the dynamic nature of technological advancements. Adaptive management involves continuously assessing the technological landscape, experimenting with new tools and approaches, and rapidly integrating successful innovations into the organizational workflow (Coakes et al., 2010).

Such practices require a management style that is open to feedback and iterative learning. Managers who adopt an adaptive approach encourage experimentation and view failures as opportunities for learning rather than setbacks. This mindset is crucial for fostering a culture of innovation where employees are not afraid to take risks and explore new technological possibilities. Adaptive management practices also involve regular training and development programs to ensure that employees remain up-to-date with the latest technological trends and best practices.

5.3. *Organizational Culture and Technological Integration*

The culture of an organization significantly influences how technology is adopted and utilized. A culture that values innovation, collaboration, and continuous learning is more likely to successfully integrate new technologies. Nyathi and Kekwaletswe (2022) highlight the importance of fostering a culture that supports electronic human resource management (e-HRM) systems. In such a culture, employees are more likely to embrace digital tools and contribute to the successful implementation of technological initiatives.

Organizational culture also impacts the effectiveness of knowledge management practices, which are critical for leveraging technology. A culture that promotes knowledge sharing and collaboration ensures that valuable insights and experiences related to technology use are disseminated throughout the organization. This can prevent the siloing of information and enable more effective problem-solving and innovation.

5.4. *Organizational Structure and Systems Integration*

The structure of an organization can either facilitate or hinder technological integration. Srisawat (2024) emphasizes the importance of distributed digital enterprise architectures in managing technological change effectively. An organizational structure that supports decentralized decision-making and flexible workflows can enhance the integration of new technologies. This is particularly important in large organizations with complex systems where centralized control can create bottlenecks and impede innovation (Srisawat, 2024).

Elghdban et al. (2023) discuss the adoption of Building Information Modelling (BIM) in Libyan construction firms, highlighting the need for a holistic approach that considers both technological and organizational elements. They argue that successful technology integration requires careful planning and coordination across different organizational units. Ensuring compatibility between new technologies and existing systems is essential for seamless integration. This involves assessing the interoperability of different technologies and establishing standards and protocols to facilitate data exchange (Elghdban et al., 2023).

5.5. *Strategic Alignment and Technological Adoption*

Strategic alignment between technological initiatives and organizational goals is crucial for maximizing the benefits of technology adoption. Coakes, Amar, and Granados (2010) underscore the importance of aligning technology strategies with the overall business strategy. This alignment ensures that technological investments are purposeful and contribute to the achievement of organizational objectives (Coakes et al., 2010).

Strategic alignment also involves prioritizing technological initiatives that offer the greatest potential for value creation. This requires a thorough understanding of the organization's strengths, weaknesses, opportunities, and

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threats (SWOT analysis) in relation to technological trends. By aligning technology adoption with strategic priorities, organizations can ensure that their technological investments yield significant returns and drive competitive advantage.

5.6. Enhancing Employee Engagement through Technology

Effective management of technological change involves not only strategic planning but also enhancing employee engagement. Jain, Garg, and Khera (2022) explore the adoption of AI-enabled tools in social development organizations in India, demonstrating how technology can enhance organizational effectiveness and outreach. Engaging employees in the technology adoption process is critical for ensuring their buy-in and active participation (Jain et al., 2022).

Employee engagement can be enhanced through clear communication, training programs, and opportunities for feedback. By involving employees in the decision-making process and providing them with the necessary support and resources, organizations can foster a sense of ownership and commitment to technological initiatives. This engagement is crucial for overcoming resistance to change and ensuring the successful implementation of new technologies (Cole-Heath & Sagiraju, 2024; Herman et al., 2024; Kwarteng et al., 2024).

6. Technological Detriments Classification

6.1. Psychological Impacts: Technostress and Employee Well-being

One of the most significant detriments of technology adoption is technostress, which affects employee well-being and productivity. Califf and Springer (2022) describe technostress as a condition where employees feel overwhelmed by the constant need to adapt to new technologies. This stress can lead to burnout, decreased job satisfaction, and increased turnover rates. The psychological burden of keeping up with rapid technological changes can create a counterproductive work environment, thereby negating the potential benefits of technological advancements (Califf & Springer, 2022).

Mabungela (2023) further elaborates on the psychological impacts of AI and automation, particularly the fear of job displacement. Employees may resist technological changes due to concerns about their job security, which can impede the successful implementation of new technologies. Addressing these psychological impacts requires organizations to foster a supportive environment that emphasizes continuous learning and reskilling (Mabungela, 2023).

6.2. Strategic Misalignments: Incompatibility with Organizational Goals

Strategic misalignments occur when technological initiatives are not aligned with the overall business strategy. Coakes, Amar, and Granados (2010) highlight that misaligned technology adoption can lead to wasted resources and missed opportunities. When technology does not support the core objectives of the organization, it can create inefficiencies and reduce overall effectiveness. For instance, adopting technology for its novelty rather than its strategic fit can result in underutilized tools and fragmented systems (Coakes et al., 2010).

Agarwal, Sarkar, and Echambadi (2002) discuss the conditioning effect of time on firm survival, emphasizing that firms must adapt their strategies to keep pace with technological advancements. Strategic misalignment often arises when organizations fail to update their business strategies in response to technological changes, leading to a disconnect between technology use and business goals (Agarwal et al., 2002).

6.3. Knowledge Management Issues: Ineffective Knowledge Transfer

Effective knowledge management is crucial for leveraging technology. However, poor knowledge transfer can exacerbate technological detriments. Masrek, Karim, and Hussein (2008) suggest that organizational and individual characteristics significantly influence the utilization of corporate intranets. Ineffective knowledge transfer can lead to underutilization of technological tools, as employees may lack the necessary skills and information to use them effectively.

Nyathi and Kekwaletswe (2022) highlight the importance of employee feedback in identifying knowledge management issues. Regular feedback mechanisms can provide insights into how employees perceive and interact with technology, helping organizations identify gaps in knowledge and training. Addressing these gaps is essential for ensuring that employees can fully utilize technological tools to enhance performance.

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6.4. *Integration Challenges: System Compatibility and Interoperability*

Integration challenges arise when new technologies are not compatible with existing systems, leading to inefficiencies and increased costs. Srisawat (2024) emphasizes the importance of distributed digital enterprise architectures in managing technological change. Incompatible systems can create significant barriers to seamless technology integration, resulting in data silos and fragmented processes (Srisawat, 2024).

Elghdban et al. (2023) discuss the adoption of Building Information Modelling (BIM) in Libyan construction firms, highlighting the need for a holistic approach that considers both technological and organizational elements. Successful integration of new technologies requires careful planning and coordination across different organizational units. Ensuring compatibility between new and existing systems is crucial for minimizing integration challenges and enhancing operational efficiency (Elghdban et al., 2023).

6.5. *Cybersecurity Threats: Protecting Digital Assets*

Cybersecurity threats are a critical detriment associated with technological adoption. As organizations become more reliant on digital tools, they are increasingly vulnerable to cyberattacks. AL-Hashmy et al. (2022) underscore the importance of robust cybersecurity measures in protecting organizational data and ensuring business continuity. Cyberattacks can result in significant financial losses, reputational damage, and legal liabilities.

Data privacy is another important aspect of cybersecurity. Organizations must comply with relevant data protection regulations and implement stringent data privacy policies. Failure to protect sensitive information can lead to severe consequences, including loss of customer trust and regulatory penalties. Therefore, investing in advanced cybersecurity solutions and adopting best practices is essential for safeguarding digital assets.

6.6. *Classification Framework*

To systematically address these technological detriments, a classification framework can be developed based on the identified categories:

1. **Psychological Impacts**
    - Technostress
    - Fear of job displacement
2. **Strategic Misalignments**
    - Misaligned technology initiatives
    - Failure to update business strategies
3. **Knowledge Management Issues**
    - Ineffective knowledge transfer
    - Underutilization of technological tools
4. **Integration Challenges**
    - System compatibility issues
    - Data silos and fragmented processes
5. **Cybersecurity Threats**
    - Vulnerability to cyberattacks
    - Data privacy concerns

Each category can be further subdivided into specific indicators and criteria that signal the presence of technological detriments. For instance, indicators of technostress may include high turnover rates, frequent employee complaints about technology, and decreased productivity. Similarly, strategic misalignments can be identified through audits that reveal discrepancies between technology use and organizational goals.

6.7. *Mitigation Strategies*

Developing effective mitigation strategies is crucial for addressing the identified technological detriments. Organizations can implement the following measures:

- **Psychological Impacts**: Foster a supportive environment that emphasizes continuous learning and reskilling. Provide mental health resources and promote work-life balance to mitigate technostress.
- **Strategic Misalignments**: Ensure that technological initiatives are aligned with business goals. Regularly update business strategies to reflect technological advancements and market changes.
- **Knowledge Management Issues**: Enhance knowledge transfer through training programs and collaborative platforms. Encourage knowledge sharing and provide continuous learning opportunities.
- **Integration Challenges**: Invest in compatible systems and establish standards for data exchange. Conduct regular audits to ensure seamless integration of new technologies.
- **Cybersecurity Threats**: Implement advanced cybersecurity solutions and adopt best practices for data protection. Conduct regular security

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assessments and provide cybersecurity training for employees.

7. Improving Organizational Performance

Improving organizational performance in the context of technological adoption requires a multifaceted approach that integrates strategic alignment, robust management practices, continuous learning, and effective use of technology. This section explores various strategies and frameworks that organizations can adopt to enhance their performance, drawing on insights from existing literature.

7.1. Strategic Alignment of Technology and Business Goals

Strategic alignment between technological initiatives and business goals is paramount for improving organizational performance. Coakes, Amar, and Granados (2010) emphasize the importance of aligning technology strategies with the overall business strategy. This alignment ensures that technological investments are purposeful and contribute directly to the achievement of organizational objectives. By integrating technology planning with strategic business planning, organizations can ensure that their technological initiatives support long-term goals and drive value creation.

Agarwal, Sarkar, and Echambadi (2002) highlight the need for firms to adapt their strategies to keep pace with technological advancements. This involves continuously assessing the technological landscape and aligning business strategies accordingly. Organizations that fail to update their strategies in response to technological changes risk becoming obsolete. Therefore, regular strategic reviews and adjustments are necessary to maintain alignment and ensure that technology serves as an enabler of business success.

7.2. Enhancing Knowledge Management and Organizational Learning

Effective knowledge management and organizational learning are critical for leveraging technology to improve performance. Masrek, Karim, and Hussein (2008) suggest that organizational and individual characteristics significantly influence the utilization of corporate intranets and other knowledge management systems. By fostering a culture of continuous learning and knowledge sharing, organizations can enhance their ability to utilize technology effectively.

Nyathi and Kekwaletswe (2022) underscore the importance of employee feedback in improving knowledge management practices. Regular feedback mechanisms can provide valuable insights into how employees perceive and interact with technology, helping organizations identify areas for improvement. Enhancing knowledge transfer through training programs and collaborative platforms can ensure that employees are well-equipped to leverage technological tools, thereby improving overall organizational performance.

7.3. Adaptive Management Practices and Transformational Leadership

Adaptive management practices and transformational leadership are essential for navigating the complexities of technological change. Cherep, Voronkova, and Androsova (2022) argue that adaptive and transformational management styles are crucial for fostering a culture of innovation and continuous improvement. Adaptive management involves continuously assessing the technological landscape, experimenting with new tools, and integrating successful innovations into the organizational workflow.

Transformational leaders inspire and motivate employees to embrace change and innovation. They play a pivotal role in aligning organizational goals with technological initiatives, reducing resistance to change, and encouraging proactive engagement with new technologies. By promoting a vision of continuous improvement and innovation, transformational leaders can help organizations harness the full potential of technology to drive performance.

7.4. Integration of Distributed Digital Architectures

The integration of distributed digital architectures is critical for managing technological change effectively. Srisawat (2024) emphasizes the importance of decentralized decision-making and flexible workflows in enhancing the effectiveness of technology adoption. Distributed digital architectures support seamless integration of new technologies, enabling organizations to respond quickly to technological changes and market demands (Srisawat, 2024).

Elghdban et al. (2023) discuss the adoption of Building Information Modelling (BIM) in Libyan construction firms, highlighting the need for a holistic approach that considers both technological and organizational elements. Ensuring

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compatibility between new and existing systems is essential for minimizing integration challenges and enhancing operational efficiency. By adopting a modular approach to technology integration, organizations can achieve greater flexibility and scalability (Elghdban et al., 2023).

7.5. Fostering a Culture of Innovation

Fostering a culture of innovation is vital for sustaining organizational performance in the digital age. Coakes, Amar, and Granados (2010) discuss the global perspective on knowledge management, strategy, and technology, emphasizing the need for strategic alignment and innovation. Organizations that prioritize innovation are better positioned to leverage technological advancements and stay ahead of the competition.

Nyathi and Kekwaletswe (2022) highlight the role of e-HRM systems in enhancing organizational value creation. By fostering a culture that supports electronic human resource management and other digital tools, organizations can enhance employee engagement and productivity. Encouraging experimentation, rewarding innovative ideas, and providing resources for continuous learning are key strategies for fostering a culture of innovation.

7.6. Cybersecurity and Data Privacy

Ensuring robust cybersecurity and data privacy measures is essential for protecting organizational data and maintaining business continuity. AL-Hashmy et al. (2022) underscore the importance of investing in advanced cybersecurity solutions to safeguard digital assets. Cyberattacks can result in significant financial losses, reputational damage, and legal liabilities, making cybersecurity a critical component of organizational performance (Al-Hashmy et al., 2022). Data privacy is equally important, particularly in industries that handle sensitive customer information. Organizations must comply with relevant data protection regulations and implement stringent data privacy policies. By adopting best practices in cybersecurity and data privacy, organizations can build trust with customers and stakeholders, thereby enhancing their reputation and competitive advantage (Al-Hashmy et al., 2022).

7.7. Leveraging AI and Automation

Leveraging AI and automation can significantly enhance organizational performance by improving efficiency and reducing operational costs. Jain, Garg, and Khera (2022) explore the adoption of AI-enabled tools in social development organizations in India, demonstrating how technology can enhance organizational effectiveness and outreach. AI and automation can streamline processes, enhance decision-making, and improve customer service (Jain et al., 2022).

However, it is essential to address the potential negative impacts of AI and automation, such as job displacement and resistance to change. Mabungela (2023) highlights the importance of fostering a supportive environment that emphasizes continuous learning and reskilling to mitigate these impacts. By providing training programs and career development opportunities, organizations can ensure that employees are equipped to thrive in an automated environment (Mabungela, 2023).

8. Conclusion

The integration of technology within organizational frameworks presents both substantial opportunities and significant challenges. Through a comprehensive review of existing literature, this study has identified key areas that influence the successful adoption and utilization of technology in organizations, including psychological impacts, strategic alignment, knowledge management, integration challenges, and cybersecurity threats.

The adoption of technology is indispensable for organizations aiming to improve performance and maintain competitive advantage. However, the benefits of technological advancements can be offset by various detriments if not managed effectively. Technostress and fears of job displacement are significant psychological impacts that can undermine employee well-being and productivity. Addressing these issues requires a supportive environment that emphasizes continuous learning and reskilling, as highlighted by Califf and Springer (2022) and Mabungela (2023) (Califf & Springer, 2022; Mabungela, 2023).

Strategic alignment is crucial for ensuring that technological initiatives support overall business goals. Misalignments can lead to wasted resources and missed opportunities, as noted by Coakes, Amar, and Granados (2010) (Coakes et al., 2010). Organizations must regularly update their business strategies to keep pace with technological advancements and ensure that technology serves as a driver of business success, as emphasized by

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Agarwal, Sarkar, and Echambadi (2002) (Agarwal et al., 2002).

Effective knowledge management and organizational learning are vital for leveraging technology to enhance performance. Fostering a culture of continuous learning and knowledge sharing can help organizations utilize technological tools more effectively, as discussed by Masrek, Karim, and Hussein (2008) and Nyathi and Kekwaletswe (2022). Regular feedback mechanisms and training programs are essential for improving knowledge transfer and ensuring that employees are well-equipped to navigate technological changes (Masrek et al., 2008; Nyathi & Kekwaletswe, 2022).

Adaptive management practices and transformational leadership are essential for fostering a culture of innovation and continuous improvement. Transformational leaders play a pivotal role in aligning organizational goals with technological initiatives and encouraging proactive engagement with new technologies, as argued by Cherep, Voronkova, and Androsova (2022). Adaptive management practices involve continuously assessing the technological landscape and integrating successful innovations into the organizational workflow.

Integration challenges, such as system compatibility and interoperability, can hinder the seamless adoption of new technologies. Ensuring compatibility between new and existing systems and adopting distributed digital enterprise architectures are critical for minimizing these challenges, as emphasized by Srisawat (2024) and Elghdban et al. (2023) (Elghdban et al., 2023; Srisawat, 2024).

Cybersecurity and data privacy are critical concerns in the digital age. Robust cybersecurity measures and stringent data privacy policies are essential for protecting organizational data and maintaining business continuity, as highlighted by AL-Hashmy et al. (2022). Investing in advanced cybersecurity solutions and adopting best practices can help organizations safeguard their digital assets and build trust with customers and stakeholders (Al-Hashmy et al., 2022).

Leveraging AI and automation can significantly enhance organizational performance by improving efficiency and reducing operational costs. However, it is essential to address potential negative impacts, such as job displacement and resistance to change, through supportive measures that emphasize continuous learning and reskilling, as discussed by Jain, Garg, and Khera (2022) and Mabungela (2023) (Jain et al., 2022; Mabungela, 2023).

In conclusion, improving organizational performance in the context of technological adoption requires a holistic approach that integrates strategic alignment, effective knowledge management, adaptive management practices, robust cybersecurity measures, and a culture of innovation. By addressing the identified technological detriments and leveraging the benefits of technology, organizations can navigate the complexities of technological change and achieve sustainable growth and competitive advantage. Through proactive management and continuous adaptation, organizations can harness the full potential of technology to drive performance and achieve long-term success in the digital age.

Authors' Contributions

S.V. conceptualized the study, designed the research methodology, and supervised the data collection process. M.H.R. conducted the literature review, analyzed the data using descriptive-analytical methods, and contributed to drafting the manuscript. M.S.R., the corresponding author, interpreted the results, led the drafting and revising of the manuscript, and ensured the integration of key findings. All authors participated in discussing the findings, critically reviewed the manuscript for important intellectual content, and approved the final version for publication.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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