

Digital Innovation and Organizational Culture Transformation in Improving Startup Performance

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Abstract

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Digital transformation is a key factor in encouraging the growth and competitiveness of startups in the industrial era 4.0. This research aims to examine the relationship between digital innovation and organizational culture transformation in improving startup performance. Using the literature study method on scientific articles, it was found that the adoption of digital technology has a significant impact on efficiency, innovation, and customer satisfaction. However, digital innovation will not be effective without being supported by an organizational culture that is adaptive, collaborative, and open to change. The results of the study show that synergy between technology and culture is an important foundation in driving successful transformation. Startups that successfully implement digitalization comprehensively with the support of the right organizational culture tend to show superior and sustainable performance. This research provides strategic implications for startups in designing digital transformation based on technology and human value in an integrative manner.

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1. Introduction

Digital transformation has changed the face of the business world as a whole, including startups. Startups are strategically positioned as a key player in adopting and developing digital technologies to create new value, address market challenges, and design innovative business models. The speed of adoption of technologies such as big data, artificial intelligence (AI), cloud computing, and the Internet of Things (IoT) is an important indicator for the competitiveness of startups. Digital innovation allows startups to improve operational efficiency, accelerate decision-making processes, and expand market coverage in real-time (Mamduh and Pratikto, 2021). However, the extent to which digital technology can have a positive impact on startup performance depends on the organization's internal readiness, especially in the aspect of organizational culture.

Organizational culture is a fundamental element in any strategic change, including digital transformation. A culture that supports innovation, cross-functional collaboration, continuous learning, and tolerance for failure is an important foundation for implementing technology effectively. Heavin and Power (2018) show that many failures of digital initiatives are not caused by less sophisticated technology, but rather by an unsupportive organizational culture. In the context of startups, this challenge is becoming increasingly relevant because startups generally operate in a dynamic, unstable, and uncertain environment.

In addition, the characteristics of startups that tend to have a flat and flexible organizational structure provide a great opportunity to form an adaptive and innovative culture from the early stages. Startups are not tied to complex

bureaucratic legacies like large organizations, so they have ample room to instill work values that drive creativity and accelerate transformation. However, not all startups are able to take advantage of this potential. The success of digital adoption in startups is influenced not only by technology, but also by leadership that fosters self-efficacy and promotes a pro innovation work culture.

In several studies, the link between organizational culture and digital innovation directly impacts business performance. Research by Prabawati and Wafa (2022) in Indonesia shows that startups that build an adaptive organizational culture and are open to change are able to increase customer loyalty, strengthen internal capabilities, and achieve more stable growth. Meanwhile, Holmström (2022) developed a digital transformation strategy model that places organizational cultural readiness as a key component. In this model, technological change is understood as a social process that requires the support of organizational values, norms, and collective behavior to function optimally.

Furthermore, the challenge of implementing digital innovation in startups cannot be separated from the context of human resources. Digital transformation often requires new competencies, technological skills, and cross-disciplinary collaborative work patterns. Therefore, forming an organizational culture that facilitates learning, adaptation, and talent development is the main requirement. This supportive work culture also plays a role in creating a safe psychological environment, so that team members feel free to innovate and pass on new ideas.

Based on this background, this research aims to understand in depth how the relationship between digital innovation and organizational culture transformation

affects the improvement of startup performance. This study will be carried out through a literature study method that examines the results of academic research from 2018 to 2022. The main focus is to identify the key factors that play a role in the successful integration between digital strategy and organizational culture management, as well as to explore the models that have been used to drive synergies between the two.

With the results of this study, it is hoped that the research can make a theoretical contribution to the development of literature on digital innovation management and organizational culture, as well as provide practical recommendations for startups, investors, and policy makers in designing sustainable and human-based digital transformation strategies. An integrative approach between technology and culture is believed to be one of the main keys in ensuring the resilience and growth of startups in the ongoing era of disruption.

2. Literature Review

2.1. Digital Innovation in the Context of Startups

Digital innovation refers to the adoption and application of digital technology to create, modify, and develop products, services, business processes, and operational models that are more efficient and adaptive to market dynamics. In the context of startups, digital innovation is a key enabler to cut the product development cycle, reach a wider market, and improve the customer experience in a personal and data-driven manner. Digital startups such as fintech, edtech, or

healthtech are usually built on a digital-native foundation and make technology a key strategic resource.

Digital innovation also encourages startups to be more data-oriented in the decision-making process. Big data analytics, Internet of Things (IoT), and artificial intelligence (AI) enable companies to understand consumer behavior in real-time, predict market trends, and optimize business operations. The application of this innovation provides a competitive advantage in terms of cost efficiency, precision of marketing strategy, and acceleration of product innovation. However, digital transformation is not instantaneous. This process requires integration between technology, business strategy, and human resource readiness. Startups that ignore the organizational dimension and focus only on technology, often fail to implement digitalization as a whole. Therefore, digital innovation must be understood as a continuous process that touches all aspects of the organization, not only tools or systems, but also work values and behaviors.

2.2. Organizational Culture Transformation as a Critical Factor

Organizational culture transformation is the process of changing values, norms, beliefs, and practices within an organization to create a more adaptive, collaborative, and innovative work environment. In the context of startups, organizational culture plays a central role in supporting the success of digital innovation. A culture that encourages experimentation, openness to new ideas, and the courage to take risks has been shown to accelerate the innovation process (Goncalves et al., 2020).

Startups, due to their young and dynamic nature, have the opportunity to build a culture from scratch. However, challenges arise when rapid growth leads to internal conflicts, value mismatches between teams, or stagnation of innovation due to immature culture. According to Perkin and Abraham (2021), startups that are able to instill the principles of agile, continuous learning, and cross-functional collaboration from an early age have advantages in adapting to technological and market changes.

In addition, cultural change also serves as a bridge between digital strategies and their implementation in the field. A culture that supports transparency, decentralized decision-making, and the courage to take risks will encourage comprehensive and participatory adoption of technology. This is in line with the findings from Heavin and Power (2018) who stated that a responsive organizational culture is the main catalyst for the success of digital transformation.

2.3. The Influence of Digital Innovation and Organizational Culture on Startup Performance

Startups' performance is determined not only by how quickly they adopt technology, but also by the extent to which those digital innovations can be integrated with a supportive work culture. The combination of technological capabilities and innovative culture has been shown to strengthen organizational resilience, increase productivity, accelerate innovation cycles, and drive higher customer satisfaction.

A study by Aulia et al. (2022) shows that startups in Indonesia that have a culture of openness and experimentation have successfully utilized technology to

increase market penetration and customer loyalty. This is supported by data from Gonçalves et al. (2022) which states that digital innovation will only have a positive impact if it is supported by an appropriate work culture. Culturally unprepared organizations often face resistance from employees in the digital transformation process.

In addition, digital innovation can also accelerate an organization's learning process, aid data-driven decision-making, and encourage the creation of products that are more relevant to customer needs. However, this transformation requires a sound change management strategy, including employee training, organizational restructuring, and the instilling of digital mindset values across the company's lines. Therefore, startups must simultaneously manage the technology and human dimensions to achieve optimal performance.

3. Method

This study uses a descriptive qualitative approach with the literature study method as the main strategy in answering the problem of the relationship between digital innovation and organizational culture transformation to improving startup performance. Literature studies are chosen because they are able to provide conceptual understanding and theoretical synthesis of various previous research results, so as to produce a strong framework of thought and can be used as a basis for further research development.

The data sources in this study came from scientific articles and were retrieved through reputable academic databases such as Google Scholar. The literature search

process was carried out using keywords such as “digital innovation”, “organizational culture transformation”, “startup performance”, and “digital transformation in startups”. Inclusion criteria in the selection of literature include: publication in peer-reviewed journals; directly relevant to the theme of digital innovation, organizational culture, and startup performance; the year of publication between last five years; and available in full access for comprehensive analysis.

The data analysis stage begins with the identification and collection of relevant articles, followed by the content analysis stage of the objectives, approaches, results, and implications of each research. The researcher synthesizes the literature thematically by mapping the key findings from each source into three main categories, namely: digital innovation in the context of startups; the role of organizational culture transformation; and the relationship between the two in improving organizational performance. This technique makes it easier to draw conclusions based on the repetition of the theme, the consistency of the findings, and the identification of gaps or opportunities in the existing literature. In maintaining the validity and accuracy of the findings, the author compares various study results from different sources to get triangulation of information. This approach allows researchers to assess whether the conclusions obtained are general or contextual in a particular study. In addition, to maintain data traceability, all references are systematically recorded in APA format and accompanied by public access links.

This literature study method aims not only to summarize existing knowledge, but also to identify the theoretical and practical relationship between elements of

digital transformation and organizational culture to startup performance. Thus, the results of this study are expected to contribute to the development of a more integrative digital transformation strategy, especially for startups in developing countries such as Indonesia, which are in the phase of growth and technological adaptation.

4. Results

Based on the results of a review of various relevant scientific literature, it was found that the relationship between digital innovation and organizational culture transformation plays a major role in improving startup performance. In the era of fast-paced digital transformation, startups are required to not only adopt new technologies, but also form an organizational culture that is in tune with these changes. Digital innovation provides various strategic opportunities through the use of technologies such as big data, artificial intelligence (AI), Internet of Things (IoT), and cloud computing, which function to accelerate decision-making, expand market access, and improve business efficiency (Mamduh and Pratikto, 2021). However, technology is not the only key. Without a supportive organizational culture, digital transformation has the potential to experience resistance from within the organization.

Research by Heavin and Power (2018) shows that failures in digital implementation are often not due to a lack of technology, but rather due to an unprepared organizational culture. A culture that is bureaucratic, static, and not open to change is the main obstacle to the technology adoption process. In the context of

startups, this is crucial because flexibility and speed of adaptation are the main advantages that set them apart from established companies. Startups that build an agile, collaborative, and learning-based culture will be more successful in integrating technology into their business processes (Goncalves et al., 2020).

One of the important dimensions in the success of digital transformation is leadership that supports change. Strong digital leadership can enhance employee self-efficacy and creativity, which in turn directly contributes to innovation performance. Leaders who not only understand technology but also succeed in aligning it with the organization's vision and values become key drivers of the cultural transformation that is required. In startups, leadership plays a vital role in shaping a work environment that not only embraces change but also makes it a fundamental value. Furthermore, Leung and Cossu (2019) show that in the context of e-commerce startups in Thailand, the success of digital transformation is largely determined by the formation of a strong digital culture. The digital culture in question includes values such as speed, efficiency, the courage to experiment, and a data-driven approach to decision-making. This research confirms that the success of new technologies depends on how organizations interpret, absorb, and shape new behaviors around them. Digital culture is not just a response to technology, but a framework of values inherent in organizational structure and behavior.

Organizational culture also plays a role as a support for the sustainability of digital innovation. When organizations are open to feedback, encourage cross-functional communication, and allow space for trial and error, the emergence of new ideas will be more natural and sustainable (Bresciani et al., 2021). This is reinforced

by the findings of Imperatori (2017) who associate the level of happiness at work with the effectiveness of digital transformation. A psychologically healthy and open work environment to digitalization encourages higher employee engagement, increasing productivity and innovation.

Prabawati and Wafa (2022), in the context of Indonesian startups, also found that startups that successfully combine digital transformation with strengthening a flexible organizational culture tend to have advantages in retaining customers and improving business performance. This emphasizes the importance of avoiding an overly technocratic approach in the digitalization process. Technological innovation must be accompanied by a human approach that emphasizes behavioral adaptation, human resource development, and the formation of new work norms.

Holmström (2022) developed a digital transformation implementation model that shows that organizational cultural readiness is a determining variable in the successful implementation of digital strategies in Iran's insurance sector. While not in the context of startups directly, these findings can be contextualized that across all types of organizations including startups the values, norms, and collective perceptions held by members of the organization profoundly influence the extent to which technology can be leveraged. Without appropriate cultural change, innovation will only become a technical instrument without a significant impact on long-term performance.

Furthermore, Setyawan and Nelson (2021) in his research on digital transformation practices in technology startup companies in Jakarta stated that talent management is a crucial point in the integration of technology and culture.

Successful digital transformation occurs when the process of recruitment, training, and performance management is aligned with the adoption of digital technology and culture. He emphasized the importance of an inclusive digital strategy and personalization of HR approaches so that technological changes do not create competency gaps or cultural inequalities within startups.

One of the things that cannot be ignored in this discussion is the role of organizational structure in strengthening the relationship between technology and culture. A flat and open organizational structure allows for faster decisions, increased collaboration, and experimentation can be conducted with controlled risk. This model is widely applied to modern technology startups, because it is in line with the principles of agile and lean startups that prioritize speed, flexibility, and results-orientation (Ali et al., 2020).

Other findings show that the synergy between digital innovation and organizational culture not only impacts internal aspects, but also strengthens the external position of startups in the market. Startups that have an image as digital companies with an open and innovative culture are better able to attract top talent and investors who are interested in long-term growth potential. In the context of global competition, organizational values that are in line with the spirit of digital transformation become a form of social capital that strengthens organizational sustainability.

Finally, all the empirical evidence examined shows that the relationship between digital innovation and organizational culture is not linear in one direction, but rather dynamically influences each other. The right culture will strengthen the

effectiveness of technology, and good use of technology will encourage value renewal in the organization's culture. Therefore, digital transformation in startups should not be seen as a mere IT or technology project, but as a process of organizational change as a whole. The application of new technologies must be accompanied by value development, HR training, reformulation of work processes, and leadership that supports change.

Thus, the results of this study provide a comprehensive picture that startups that are able to align technology strategies and cultural transformation simultaneously will have a sustainable competitive advantage. In a rapidly changing business environment, the synergy between digital innovation and organizational culture is not only a strategic advantage, but a fundamental need to survive and thrive.

5. Discussion

A comprehensive literature review has underlined that the success of startups in the era of digital disruption is no longer determined solely by technological innovation. Instead, there are two strategic components that complement each other and form the main foundation: digital innovation and organizational culture transformation. The integration of the two is key to building a startup that is not only agile and efficient, but also resilient and sustainable. Digital innovations, such as the adoption of AI, cloud computing, and data analytics, serve as accelerators that enable startups to optimize business processes, make data-driven decisions in real-time, and improve customer experiences. However, the full potential of this

technology can only be realized if it is supported by an adaptive organizational culture.

Cultural transformation, on the other hand, creates a fertile internal ecosystem for innovation growth. A culture that fosters collaboration, risk tolerance, and a spirit of continuous learning allows employees to not only use digital tools, but also use them creatively to solve problems. When technology and culture go hand in hand, startup performance tends to improve significantly, which is reflected in revenue growth, operational efficiency, and resilience in the face of dynamic market competition.

The main discussion that emerged from these findings was the importance of avoiding a partial approach in organizational transformation. Many startups are caught up in the common mistake of only investing heavily in technology, considering that by having the most advanced digital systems, they are already on the right track. In fact, without cultural readiness, digital innovation can backfire, triggering resistance, and internal conflicts. Research by Heavin and Power (2018) confirms that the gap between technology and culture is the biggest barrier to digitalization success. They explained that technology only provides tools, while the culture determines how effectively they will be utilized. In other words, technology is the engine, but culture is the fuel.

Cultural transformation is also not an instant process. It requires a gradual process, long-term commitment, and strong leadership. Leaders have a central role in leading change, acting as role models, building convincing narratives, and creating incentive systems that encourage innovative behaviors. In the context of startups,

these challenges are increasingly complex due to the flat organizational structure, limited resources, and high market pressure. Therefore, a cultural change strategy that is contextual and in accordance with the startup growth phase is needed.

This discussion shows that the digital-cultural fit model is the most relevant approach to designing a holistic transformation. This model emphasizes the importance of aligning the vision of technology with the values of the organization, so that the transformation becomes integrated and sustainable. Research by Perkin and Abraham (2021) supports this, showing that the success of digital transformation is highly dependent on the alignment between digital strategies and internal social-organizational conditions. By implementing this model, startups can ensure that every technology initiative is supported by the right culture, reduces the risk of failure, and maximizes Return on Investment (ROI).

The results of this study also reveal an interesting research gap to be followed up. For example, there has not been much empirical research that specifically measures how the stages of cultural change contribute to the success of digital transformation in various types of startups, especially in developing countries. In addition, an in-depth exploration of local contexts, such as team communication patterns, leadership structures, and work incentive systems in Indonesia, is needed. Further research in this area can produce more applicable and effective transformation strategies for startups in Indonesia. These results and discussions reinforce the argument that the success of modern startups depends heavily on their ability to not only innovate technologically, but also manage internal cultural change systematically and strategically. This is no longer an option, but a must.

6. Conclusion

This research emphasizes that digital innovation and organizational culture transformation are two important components that must run synergistically in an effort to improve startup performance. Digital innovation plays a role as a driver of business process acceleration, operational efficiency, and product development through the use of technology such as big data, AI, and cloud computing. However, the success of digital innovation is highly dependent on the organization's internal readiness, especially in terms of values, mindsets, and work behaviors that are aligned with the transformation. An organizational culture that is adaptive, collaborative, and supports continuous learning is proving to be a key factor in ensuring effective technology implementation. Without fundamental cultural change, technology adoption tends to fail because it faces resistance from individuals and teams. Therefore, the transformation process should not only focus on technical aspects, but should include the formation of a work culture that supports innovation.

Startups that are able to combine digital strategies with cultural transformation show superior performance in various aspects, such as customer satisfaction, team loyalty, and resilience to market changes. The alignment between digital capabilities and organizational values creates an environment conducive to long-term growth. Therefore, digital transformation planning must be accompanied by a strong change management and leadership strategy. This research provides a conceptual basis for startups and stakeholders to build an integrated and sustainable transformation approach. Follow-up studies are recommended to test this relationship quantitatively across different industry sectors and geographic contexts.

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