



Organizational Design and Competencies as Sources of Sustainable Competitive Advantage in a Rapidly Changing Technological Environment

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ABSTRACT

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In today's rapidly evolving technological landscape, organizations must navigate a multitude of challenges to maintain a sustainable competitive advantage. The interplay between organizational design and core competencies has emerged as a critical factor in fostering adaptability and innovation. This study aims to explore the significance of aligning organizational structures and processes with strategic competencies, enabling firms to respond effectively to technological disruptions and market dynamics. A comprehensive literature review drew insights from various theoretical frameworks, including the Resource-Based View, Dynamic Capabilities, and the Technology-Organization-Environment (TOE) model. Additionally, empirical evidence from industry leaders and case studies was analyzed to examine the practical implications of organizational design and competency development. The findings highlight the importance of adopting flexible and decentralized organizational structures that facilitate rapid decision-making and knowledge sharing. Furthermore, cultivating dynamic capabilities, such as adaptability, innovation, and customer-centricity, emerged as essential competencies for sustaining competitive advantage. Effective leadership and a culture that embraces change were identified as critical enablers for successful organizational transformation. The study underscores the interdependence between organizational design and competencies in navigating the complexities of a rapidly changing technological environment. By aligning these elements, organizations can enhance their responsiveness to market shifts, capitalize on emerging opportunities, and foster a culture of continuous innovation, ultimately driving sustainable competitive advantage.

INTRODUCTION

Organizations must deal with many tech advances that change how they operate in today's changing business world. The connection between how an organization is structured and its primary skills is essential for creating lasting competitive advantages. As companies face fast changes, aligning their structures and skills to encourage flexibility and creativity is crucial. A clear organizational structure allows for better communication and teamwork, helping businesses to meet outside needs quickly. Additionally, using advanced technologies not only

improves how operations run but also builds a culture that welcomes change and experimentation. This culture is vital to using digital tech and keeping the organization competitive in a more complicated environment. Misalignment can slow responsiveness, showing why a strategic view of design and skills is necessary. To appreciate the importance of organizational design, it is essential to see how it relates to outside demands and internal strengths. Organizations with adaptable structures can better manage information and make decisions needed for quick responses to market changes. Relevant ideas, like the Resource-Based View and dynamic capabilities, emphasize that these structures should change alongside strategic goals and tech advancements. The ability to renew and adjust skills within these structures helps organizations handle external challenges and take advantage of new opportunities. By adopting this combined approach, companies can use resources well, and leverage shared knowledge, making them leaders instead of just followers in their fields. This multi-faceted alignment is vital for achieving lasting success in uncertain environments, strengthening the link between design and competitive edge. The theoretical ideas in the literature present challenges and opportunities for modern organizations. As digital changes disrupt old models, there is an urgent need for research to study how organizational design and skills develop together in different industries. The frameworks provided lay a solid base for further investigation into these relationships, especially considering the importance of leadership and culture. By exploring how established firms adapt to current challenges, the literature encourages a better understanding of how innovative governance can improve partnerships and dynamic capabilities. This analysis of existing research not only points out areas needing more study but also suggests a new path to investigate the critical aspects of organizational design and skills related to competitive advantage in a tech-focused setting. The knowledge obtained will lead to a detailed discussion that sets the groundwork for future research to clarify these crucial elements. The conceptual framework offers a visual overview of the organizational design principles relevant to this analysis to aid this discussion.

RESEARCH METHODS

An excellent organizational design is essential for gaining an advantage in a fast-changing tech world. It includes the way a company is structured, its processes, and its A culture that supports innovation and quick reactions. An excellent organizational setup matches with strategic goals, letting companies change quickly in response to market shifts and new technologies. Research shows that companies with decentralized and flexible structures use their resources better, improving their innovation and responses to customer needs. This flexibility is especially critical today since disruptions often force companies to rethink old hierarchies (Reducing *et al.*, 2024). Ultimately, organizations focusing on sound design can build strong abilities, helping them succeed as technology advances and encouraging a culture that emphasizes ongoing improvement and alignment with strategies. The importance of organizational design goes beyond just how structures are laid out; it concerns how skills come together to create value. Understanding how design affects behavior, decision-making, and communication for long-term growth is essential. For example, studies show that when companies face complicated or unclear problems, promoting a culture of feedback and teamwork improves effectiveness (Ahmed Bounfour et al., 2022). This style of design makes operations better and gives employees more power, creating a shared sense of ownership and responsibility. By adopting inventive designs, companies can better use their collective skills to solve significant challenges. Furthermore, as current studies highlight, principles like specialization, coordination, and knowledge management are crucial to building

skills that help achieve lasting success and remain strong through industry changes. The link between organizational design and technology is increasingly seen as key to gaining an edge in competition. With major changes like AI and big data, companies need to rethink how they operate to use these technologies effectively. New research shows the need to align tech skills with adaptable structures to improve performance. It is noted that organizations that achieve this alignment see better decision-making and quicker operations, allowing them to turn tech progress into strategic chances (Richard et al. et al., 2024). Studying how design affects the use and effect of new technologies will enhance the understanding of competitive advantage in changing fields. Recognizing how design and technology work together enables organizations to handle current challenges and prepare for future growth. This supports the idea that organizational design is essential for lasting competitive advantage in today's tech-focused economy

RESULTS AND DISCUSSION

Importance of Competencies in Organizations

Using organizational skills is essential for keeping a competitive edge in fast-changing markets. Bonjour et al. point out that companies that match their primary skills with tech progress can adapt and do well. The connection between a company's resources and strategy often affects its agility during changes. Skills in digital tech, customer interaction, and innovative processes help organizations respond well to changes in consumer needs and market situations. This skill is especially vital as companies deal with the complexities that new technologies bring, ultimately influencing their organizational setup and ability to succeed long-term. The focus on building solid skills also shows the need for a culture of ongoing learning and adaptability in companies, setting them up for future challenges. Additionally, using advanced analytics and machine learning helps firms better grasp market changes, allowing them to adjust their skills as needed.

A strategic approach to skill development is highlighted by research that shows the crucial role of management support and organizational design in boosting innovation. CG Fress and colleagues suggest that organizations that support experimentation and knowledge sharing significantly improve their innovation potential. This cultural aspect and solid organizational structures enable firms to swiftly adjust their processes and services in response to tech disruptions. As markets keep changing, knowing how to build skills that align with tech resources and human talent is vital for maintaining a competitive advantage. To illustrate the critical link between competencies and business success, frameworks that analyze national competitive advantage show the importance of organizational design and strategic capabilities. For example, adopting certain organizational design principles, such as specialization and innovation, helps capture the complex dynamics at work. These concepts highlight how effective organizational structures enhance skills related to market responsiveness. Also, the changing environment requires a strong emphasis on relational competencies, as businesses now need to work together across industries to utilize various strengths. By identifying and developing these skills, firms can improve their internal processes while positioning themselves as leaders at certain times, ensuring their relevance and sustainability in a competitive global market. Overall, a deeper understanding of the role of competencies in organizations promotes a proactive approach to maintaining strategic advantages.

TABLE 1 Competencies' Impact on Organizational Performance

Competency	Impact on Performance (%)	Source
Leadership	25	McKinsey & Company 2023 Survey
Innovation	20	Harvard Business Review 2022
Digital Skills	30	World Economic Forum 2023
Data Analytics	15	Deloitte Insights 2022
Collaboration	10	Forbes 2023

Overview of Technological Change and Its Impact

Organizations today encounter high levels of disruption caused by technological advances that change industry landscapes. The fast growth of technology requires a change in how organizations are structured and what skills they have to create lasting competitive advantages. As shown by Bower and Christensen (1995), technologies often go through a cycle of disruptive change followed by stabilization phases, which forces organizations to stay flexible. Continuous innovation becomes critical as companies must adjust not only to current technologies but also to new ones. The use of advanced analytics, artificial intelligence, and automation works to improve efficiency and explore new opportunities. Organizations that successfully match their design with these technologies usually do better than those that do not change. Therefore, having an adaptable organizational framework-Works that can handle the complexities of technological change are essential for long-term survival and staying relevant in the market. The effects of technological change reach beyond operational efficiency and influence strategic and cultural aspects within organizations. Governments and regulations increasingly affect firms' ability to innovate and adapt, creating a mix that promotes and limits change. Studies have shown that support from top management is critical in managing technological transformations ((Ahmed Bounfour et al., 2022)). Without solid leadership and dedication to embracing these changes, organizations may find it hard to use technological advancements effectively. Additionally, forming collaborative partnerships can help with knowledge sharing and resource utilization, improving competitive standing ((Mclay, 2014)). As discussed, organizations need to foster a culture that supports innovation and experimentation, moving from traditional hierarchical models to a more decentralized, team-focused structure that can respond to rapid technological evolution. Furthermore, the relationship between technology and organizational skills becomes vital for gaining a competitive edge. Companies must build dynamic capabilities that allow for ongoing learning and adaptation to technological changes, thus enhancing their strategic position ((Reducing *et al.*, 2024)). Research shows that organizations that use technological features and organizational resources perform better than those focused only on adopting new technology. Emphasizing skills like knowledge management, creative problem-solving, and user-centered design fosters a culture of agility crucial in a technology-focused market. Describing the connection between organizational design and effectiveness highlights how specialized, coordinated systems can promote innovation. The ability to quickly adjust in response to technological changes reduces risks and helps organizations take advantage of new opportunities, ensuring they remain sustainable and competitive in a changing environment.

Theoretical Framework

The growth of organizational theories, especially with fast technological changes, needs a closer look at how design and skills work together to create lasting competitive edges. Organizations face disruptions and changing markets, making the Resource-Based View (RBV) a critical framework, focusing on how internal resources align with external chances. This perspective shows that companies with special skills can use their organizational design to quickly adapt to technology changes, leading to better long-term performance. Additionally, including dynamic capabilities in this discussion highlights the need for ongoing updates of resources and skills to deal with environmental changes. Combining these ideas helps deepen understanding and supports practitioners in managing the complexities of today's business world, stressing the need for flexible designs that balance adaptability with strategic goals. The link between organizational design and skills as a theoretical structure is further clarified by research, showing their combined effect on competitive positioning. For example, decentralized organizational structures allow quick decisions and promote innovation more than strict designs. Studies show that organizations with transformational leadership can successfully tap into individual and group skills to drive change, validating insights from modern scholars in strategic human.

Resource management (Argote, 2001). These frameworks are especially effective in situations requiring quick action, like during technological shifts. A collaborative and creative culture, supported by designs that promote open communication and knowledge sharing, is crucial. This collaboration improves the organization's responsiveness and helps achieve strategic goals in an increasingly unpredictable setting. Visual models of theoretical ideas can help clarify complex concepts, improving our grasp of the connection between design and skills. For example, frameworks that show the factors of competitive advantage explain the complex nature of these relationships by highlighting the various elements that affect organizational success. Furthermore, building an innovative mindset aligns with the theory of promoting adaptable organizational cultures to manage change well. Incorporating advanced analytics and AI into this conversation highlights the need for modern organizations to invest in skills that enhance efficiency and creative problem-solving (Ahmed Bounfour et al., 2022). This emphasis on developing solid organizational designs driven by strategic skills sets a foundation for businesses to succeed amid the challenges of a quickly changing technological environment.

Grounded Theory in Organizational Studies

Using grounded theory in organizational studies provides notable insights into how organizational design interacts with the skills that support lasting competitive advantage. With an inductive method, grounded theory lets researchers create theoretical frameworks from qualitative data about organizational structures and behaviors. This method is vital for spotting new patterns and connections in complicated environments, especially in organizations adjusting to fast technological changes. This need for adaptability is supported by research from Burton et al., which looks at how AI is being implemented in leadership positions, suggesting organizations need to change their structures and skills to work well with new technologies (Richard et al. et al., 2024). The cyclical nature of grounded theory—where collecting and analyzing data happen together—helps us understand how different parts of an organization evolve to drive ongoing innovation and quick responses in an uncertain setting. Using grounded theory improves the depth of findings related to organizational design by placing them in real-world situations. This approach encourages researchers to look into areas that traditional theories might ignore, especially in industries focusing on sustainability, like the food sector (Dainty, 2014). By exploring the experiences of various stakeholders in organizational settings, grounded theory gives a voice to often overlooked participants,

yielding insights that cover structural issues and areas for improvement. This method supports the idea that organizational design is not fixed but is a flexible concept shaped by the interactions and skills of its members (Byrne *et al.*, 2001). As organizations face challenges from digital changes, insights from grounded theory become crucial for creating environments that promote innovation, teamwork, and shared learning. Highlighting the impact of grounded theory on organizational studies helps bridge the gap between theory and practice. It not only aids in understanding the emerging features of organizational design but also clarifies the skills needed to succeed in a quickly changing technological landscape. By looking at employees' experiences across various organizational contexts, researchers can build thorough frameworks that show how design decisions affect innovation capacity (Ahmed Bounfour *et al.*, 2022). Moreover, the evolving nature of grounded theory fits well with modern trends toward flexibility and quick responses in organizational practices, reinforcing the idea that effective design and skill enhancement are vital for a competitive edge. Ultimately, this approach highlights the importance of fostering a culture of ongoing learning and strategic alignment, essential for organizations aiming to adapt and thrive in a constantly shifting environment.

Key Theories on Organizational Design

The idea of organizational design is linked closely to several theories that show how organizations can gain and keep advantages in changing situations. The Resource-Based View (RBV) suggests that organizations gain unique abilities from valuable, rare, hard-to-imitate, and unreplaceable assets. This view highlights that human resources and organizational skills are vital to creating workflows and structures. In line with these ideas, recent research points out the need for flexible organizational designs that support innovation and quick responses, particularly during technological changes (Richard *et al.*, 2024). Additionally, the dynamic capabilities framework stresses the necessity for organizations to adopt new technologies and continuously adjust their skills to remain relevant in competitive markets. Another critical theory is the Technology-Organization-Environment (TOE) framework, which looks at how continuous factors affect the adoption of technological innovations in organizations. This theory asserts that understanding internal capabilities and the external environment is vital for making informed decisions about organizational design. For example, research by Ahmed Bounfour *et al.* shows that the perceived usefulness and ease of use of technology are crucial for successfully adopting cloud computing, helping firms use technology for transformation (Reducing *et al.*, 2024). This ability to adapt to structural changes, driven by contextual needs, is significant in how organizations implement technological advancements to keep their competitive edges. These insights highlight the vital relationship between organizational design and the larger context in which firms operate, confirming that organizations must stay flexible to maintain their strategic positions. Grasping the complex nature of leadership in modern organizations, especially amid new technologies, adds another layer to organizational design. The classification of AI-driven leadership models shows how different robotic leaders can fit into both traditional and modern organizational structures (Ahmed Bounfour *et al.*, 2022). These frameworks clarify the changing roles of leadership as technology progresses, pushing companies to rethink their hierarchical structures. Moreover, existing studies emphasize that trust and the ability to promote human-robot teamwork are crucial in these designs. As organizations tackle the challenges of incorporating AI into leadership roles, the implications for design become more apparent, requiring models that foster transparency and collaboration. By adopting these approaches, companies can see technology not just as a tool for efficiency but as a transformative force that changes organizational hierarchies and dynamics (Tomislav Hernaus) ***The Role of Competencies in***

Competitive Advantage

A good understanding of competencies is essential for organizations dealing with the challenges of a fast-changing technological world. Competencies include the knowledge, skills, and abilities that help companies use resources well, creating a space that supports innovation and a competitive edge. The Resource-Based View highlights that matching these competencies with the organizational structure is vital for meeting strategic objectives ((Matthews, 2002)). Skills in data analysis or adapting to new technologies improve a company's ability to react to market changes, giving it a better position against rivals. Focusing on technical and interpersonal skills in the workforce ensures that organizations can use these competencies to meet immediate challenges while promoting long-term growth and stability in tough markets. The move towards inter-connectedness and sharing knowledge requires rethinking traditional management methods. Previous research shows that teamwork skills among employees, especially in tech-focused firms, bring significant advantages in innovation and resource management ((Mclay, 2014)). Organizations that nurture such teamwork skills create a flexible framework that allows for quick decisions and ongoing adjustments to market demands. Studies show that companies that emphasize innovative designs, featuring decentralized decision-making and teamwork across functions, often gain a stronger competitive position. Building a culture of trust and dedication is crucial to ensuring that competencies are kept and consistently improved, helping organizations stay competitive despite disruptions. The interaction between competencies and organizational design is crucial in maintaining a competitive advantage. Businesses need to develop a strategy that makes the most of their critical strengths while being ready to adapt to changes. The Competitive Adaptability Five-Influences Analysis shows that organizations should create an environment that fosters innovation while managing technological changes effectively ((Ahmed Bounfour et al., 2022)). Current research emphasizes the importance of adopting advanced technologies like AI and machine learning for better efficiency and as tools for enhancing strategic competencies. In conclusion, organizations that align their design principles with developing competencies are better equipped to handle the challenges brought by technological progress, ensuring their ongoing relevance in the global market.

Organizational Design Principles

Complicated rules for designing organizations are vital parts that help companies adapt and succeed in changing tech environments. One of these rules is mixing specialization and coordination, which helps assign tasks well and ensures departments work together smoothly. Specialization lets companies make the best use of individual skills, which speeds up performance. However, as companies face quick tech changes, this specialization must be paired with solid coordination to prevent isolated teams from hindering new ideas. Research shows that flexible structures combining specialization and coordination are crucial for matching a company's operations with its strategic goals, leading to an edge in a changing market. Balancing these principles is vital for fostering an innovative and challenging culture is necessary for handling today's complex business challenges. Aligning the organization's design with technology and market needs relies on constant changes and building flexible abilities. Companies should focus on sharing knowledge and creating teams to boost innovation, as the dynamic capabilities framework suggests. In this context, organizations might gain from a decentralized setup that encourages employees to take ownership and quickly adapt to changes around them. The connection between insights on culture and performance measures shows how important it is to create systems that support flexibility while motivating proactive problem-solving, as noted by (Reducing *et al.*, 2024). By shaping an atmosphere where ongoing learning and adaptability are part of the culture, companies can better use new technologies to react to market changes, keeping them relevant and competitive.

Moreover, putting organizational design principles into action requires a solid commitment to building a culture of innovation. Companies must create environments that support experimentation and gradual learning to spark creativity and unlock growth. Open discussion marks these spaces- sions and teamwork that break down traditional hierarchies, as shown by opinions shared in and. For example, firms that nurture a curious culture let employees talk continuously about new ideas and solutions. This matches the insights found in (Ahmed Bounfour et al., 2022), which stress that companies emphasizing transformational practices can better utilize their resources and skills for improved competitive standing. Ultimately, organizations that skillfully manage the mix of design principles, technology, and employee involvement will likely achieve a long-term competitive advantage, highlighting the significant role of strategic organizational design in a fast-changing tech world.

Structural Configurations and Their Implications

Organizations must change their structures when technology changes to stay ahead in business. Research shows that flexible and decentralized structures help companies be agile and meet fast-moving market needs. For instance, the Resource-Based View highlights the importance of aligning the organization's structure with strategic goals to use core skills effectively. Studies like (Reducing *et al.*, 2024) indicate that companies using advanced analytics and machine learning can significantly improve efficiency. By optimizing their structures, firms can make decisions faster and create a culture of ongoing learning and adaptation, which is crucial in dealing with a changing technological landscape. Such adjustments are vital for ongoing growth and resilience during disruptions. The connection between an organization's structure and its development of skills suggests that creating unique capabilities suited for specific markets is essential. Analysis shows that companies following transformational methods pay more attention to external factors, as noted by (Gallear *et al.*, 2006). This indicates that fast-growing organizations focus on strategy and using innovative tools, like digital platforms, to boost their competitive edge. Structural setups that promote teamwork across departments also help with knowledge sharing and innovation. This collaboration is crucial for navigating the complexities of modern markets, ensuring that organizations are responsive and aligned with their long-term objectives. By improving their structural frameworks, organizations strengthen their ability to utilize competencies that lead to a sustained competitive advantage. Ex-Mining structural configurations accentuate the need for effective change management that adapts to evolving environments. Theoretical ideas show how organizational design affects performance. Effective coordination and specialization provide frameworks that can adjust to different levels of environmental change, enhancing companies' innovative capabilities and competitive strategies. Insights from (Ahmed Bounfour et al., 2022) also stress that adopting technology, such as cloud computing, requires businesses to reassess their structures to stay in sync with new operational modes. Companies must focus on governance and management strategies that encourage collaboration and creativity, recognizing the complexities involved as companies work to enhance their structural setups. This comprehensive structural design view is essential for success in a complex technological world.

Flexibility and Adaptability in Design

In organizational design, flexibility and adaptability are vital for gaining a lasting competitive edge. Rapid tech advancements mean organizations must build structures that quickly respond to market shifts and customer demands. Bower and Christensen (1995) point out that the technology life cycle involves disruptive changes, requiring companies to change their design for quick adaptation. Companies that build flexibility into their design frameworks often achieve better innovation, allowing them to take advantage of new opportunities while

reducing risks from tech changes. Thus, organizations should prioritize adaptable structures that enable active market engagement, which connects to goals like resource optimization and strategic consistency. This responsiveness helps firms use their capabilities effectively in an unstable environment. The link between organizational flexibility and adaptability is not just a theory; it is seen in real-world applications and management methods. For example, a systems approach to organizational design suggests that modern work settings must move away from strict hierarchical models and towards more decentralized, team-oriented structures. Such changes improve knowledge sharing and teamwork. As discussed in the review of partnerships for major challenges, successful collaborations happen when organizations adopt flexible strategies that promote involvement from multiple stakeholders. Therefore, promoting a culture of experimentation and learning is crucial, aligning with Ahmed Bounfour et al.'s findings on the impact of cloud computing in transformation. Companies that incorporate flexibility in their design can better manage the complexities of today's landscape. Visual tools that outline organizational design principles support these ideas, showing how flexibility and adaptability are essential for sustained competitive advantage. For instance, [citeX] clearly represents specialization and coordination principles, highlighting the need for aligned structures that encourage dynamic skills. By effectively showing how various design elements depend on each other, such visuals enhance the argument that adaptable designs are vital for responding to tech and market changes. Moreover, organizations that smoothly combine flexible structures with robust competency frameworks can quickly adjust their strategies and operations when conditions change. This broad understanding of adaptability in organizational design stresses the importance of an iterative approach, ultimately improving a company's responsiveness in a fast-changing.

Tech environment.

Alignment of Organizational Goals with Design

In today's world of managing organizations, aligning design with main goals is crucial for keeping a competitive edge. This alignment is a guide that ensures all tasks are aimed at shared goals, thus improving efficiency and effectiveness. As organizations encounter constant shifts caused by new technologies, aligning design elements—like structure, processes, and culture—with strategic goals becomes essential. Changes in organizational frameworks should show a dedication to innovation and flexibility, just like dynamic organizations (DOs) that adapt constantly to what the market needs. According to (Dyer and Ericksen, 2006), marketplace agility, achieved through a flexible workforce, gives an essential foundation for companies wanting to maintain their competitive advantage amid swift changes. Hence, using advanced analytics and design principles aligned with organizational goals can help organizations adapt quickly, driving them toward lasting success. Strategic alignment requires recognizing the complexities of the outside environment while making the most of internal capabilities. The literature shows that organizations that enhance their design frameworks to reflect their strategic aims are likelier to take advantage of market opportunities and reduce risks. The relationship between new technology and current skills requires organizations to rethink old hierarchies. Focusing on decentralized decision-making—which enables faster reactions to changing conditions—forms a base for innovation. Findings from (Ahmed Bounfour et al., 2022) stress that organizations should adopt a complete approach that considers engaging stakeholders and optimizing resources as critical parts of the transformation. This alignment is supported by customized workforce development plans that close skills gaps and promote a culture of ongoing learning and adaptability. In conclusion, aligning organizational goals and design helps with efficiency and long-term success in a rapidly changing tech environment. Organizations can use their design choices to improve employee involvement, build strength, and speed innovation. For instance, the design principles mentioned in [citeX]

highlight the need for specialization and coordination, showing that a well-organized design encourages teamwork to reach collective goals. As companies handle ever-changing market scenarios, focusing on aligning design aspects with strategic objectives will be crucial for success, allowing them to create value in a more competitive environment. Thus, ensuring organizational structures and processes change alongside strategic needs is essential for achieving lasting competitive advantage.

Competencies as Strategic Assets

Strategic positioning in a changing market increasingly depends on an organization's skills as essential resources. Effectively using these skills helps companies face market issues and stand out among competitors. For example, companies that adopt an innovative approach and nurture a proactive culture are better equipped to manage technological changes, as shown in their mixed framework research by Ahmed Bounfour et al.

That looks at transformation factors through cloud computing. Likewise, organizations with flexible structures can better use knowledge and skills to deal with fast changes, aligning their strategic goals with operational strengths. This alignment supports lasting competitive advantages since companies utilizing internal skills can exploit new opportunities while reducing risks. The link between skills and lasting competitive advantage is further explored through transformational leadership, where support from management is vital. Research by Bounfour and others points out how crucial management backing is for navigating the challenges posed by digital changes ((Mataruka *et al.*, 2024)). In public-private partnerships, managerial skills are crucial to merging different competencies to tackle major challenges, as stated by George et al. ((Ahmed Bounfour et al., 2022)). This relationship highlights that leadership not only affects an organization's culture but also determines how skills are recognized and used. Organizations that create an environment that promotes talent management and fairness are more likely to boost their competitive edge ((George *et al.*, 2024)). Thus, leaders should prioritize these skills, treating them as strategic resources while connecting technological possibilities with organizational realities. Recognizing skills as strategic resources requires focusing on the changing relationship between technology and organizational structure. Quick technological advancements force companies to reevaluate their structures and skills to stay agile and responsive. The resource-based view suggests that companies with unique skills improve their sustainability and create barriers against imitation (Mataruka *et al.*, 2024) (). This is illustrated in organizational design, which stresses the need for structures that support innovative methods and enable knowledge sharing. Additionally, creating adaptable designs allows organizations to refine their skills, continually strengthening their competitive advantage. The mix of a clear organizational structure and developing skills enables businesses to use technological advancements effectively, positioning them well in their markets. From this perspective, it becomes clear that skills are not just operational abilities but crucial strategic resources that define the future of organizations in a swiftly evolving technological landscape.

Types of Organizational Competencies

In today's organizations, core competencies are the basic skills that give businesses an edge over competitors. These competencies usually mix specific skills, organizational know-how, and efficient operations that help companies react quickly to market needs. A closer look at these competencies shows they fall into three main types: functional, technological, and managerial. Functional competencies involve specific skills that improve tasks' efficiency and effectiveness. For example, supply chain management or marketing expertise can help firms use their resources better and gain an advantage. As companies increasingly use digital technologies, building strengths in these areas boosts their operational capabilities and aligns

them with changing market demands, reinforcing the importance of critical organizational design principles for improving efficiency and adaptability. Technological competencies need special focus since they represent a company's ability to use new technologies for innovation and Lasting competitive edge. The rise of AI and machine learning has changed operations, making it essential for firms to gain technical skills and the capacity to integrate these technologies into their strategies. The Resource-Based View suggests that companies should align their structure with technological goals to improve performance and adaptability in shifting environments. Moreover, as noted by (Ahmed Bounfour et al., 2022), these competencies are vital for driving digital change and ensuring operational strength in an increasingly unpredictable market. Organizations that excel in using technology are better positioned to keep innovating and responding quickly to the fast changes in today's business world, highlighting the need for a mixed skill set that combines technical know-how with strategic insight. Finally, managerial competencies, which include leadership, decision-making, and communication abilities, are crucial in guiding organizational resources to meet strategic goals. These skills are vital in promoting a culture of flexibility and innovation, as discussed in (Matthews, 2002) and (Akhter, 2003), where the authors underscore the importance of managing knowledge and change effectively across global networks. Strong leadership empowers teams and creates a supportive environment for learning and teamwork, which is essential for overcoming complex challenges. In this context, organizations that focus on developing their managerial skills are more likely to succeed in knowledge management and innovation—two critical factors for maintaining a competitive edge in a swiftly changing technological environment. This view is further backed by insights that outline the organizational design principles that improve managerial efficiency and drive operational success.

Development and Maintenance of Core Competencies

In today's fast-changing tech world, finding, growing, and keeping core skills is significant for businesses wanting a lasting edge over their competition. Companies can use these skills—unique strengths that set them apart in the market—by fitting their structure and resource use to support them. For example, a company's ability to innovate in technology, as noted by Bounfour et al. (Ahmed Bounfour et al., 2022), relies heavily on its built-in strengths and the supportive structures it creates. By creating a workplace that emphasizes skill development and adaptability, companies can boost their ability to respond, which helps them meet customer needs and adapt to market changes. The relationship between skills and how a company is structured can be a crucial base for staying relevant in today's competitive market. Companies that do not keep looking at and improving their core skills risk becoming outdated, showing why ongoing review and alignment with company goals matter. Studies indicate the link between tech changes and skill needs demands a flexible approach to updating skills (Roducing *et al.*, 2024). Companies that expect technological shifts can better use their skills by establishing structures that promote innovation and responsiveness. Additionally, using advanced tech tools lets companies stay ahead and use their resources best. AI and machine learning can provide essential insights that improve efficiency and innovative problem-solving (Mclay, 2014). Therefore, developing and sustaining core skills is not a one-time event but a never-ending process of learning and adjusting, which is crucial for long-term survival. In the end, the relationship between organizational structure and

Organizational Design and Competencies as Sources of Sustainable Competitive Advantage in a Rapidly Changing Technological Environment

TABLE 2
Organizational Competencies

Competency Type	Description	Impact Rating
Technical Skills	Expertise in specific technologies and tools relevant to the industry.	8.5
Strategic Thinking	Ability to formulate effective strategies based on market trends and technological advancements.	9
Leadership Skills: Aptitude for guiding teams and managing change in a dynamic environment.		8
Adaptability	Capability to pivot and adjust strategies quickly in response to emerging technologies and market shifts.	9.2
Collaboration	Skills working with cross-functional teams to drive innovation and achieve common goals.	8.7
Customer Orientation	Understanding customer needs and incorporating feedback into product development and services.	8.8
Data Analysis: Ability to analyze data for informed decision-making and predictive analytics.		9.1

Core skills define a company's ability to compete in a changing environment. Strategies focusing on decentralized models and flexible designs can help employees make good use of their skills, promoting a culture of innovation. Research shows that companies with adaptable and responsive structures are in a better position for lasting growth since they can quickly adjust to market changes (Reducing *et al.*, 2024). This overall strategy creates an environment of ongoing improvement and alignment with strategy, which is key for managing challenges from evolving technologies and changing consumer needs. Hence, working on core skills and careful organizational design act as a driving force for achieving lasting competitive advantages in a time of rapid tech development. This point can be referenced to highlight the complex relationship between design ideas and company performance, showing how vital agile, creative skills are for reaching business goals.

Competencies about Market Dynamics

Organizations must build and improve skills that match changing market conditions to keep a lasting competitive edge. As market conditions change quickly, a company's ability to adjust its skills becomes a key factor for success. Organizations that focus on flexibility in their structures can better react to competitive challenges and shifts in consumer preferences. The Resource-Based View (RBV) suggests that companies should create unique skills that are valuable, rare, hard to duplicate, and irreplaceable.

TABLE 3 Core Competencies in Organizations

Organiza- on	Core Competency	Investment in R&D (2022)	Market Share (2022)	Growth Rate (2021-2022)
Apple Inc.	Innovative product design and user experience	\$27.9 billion	27.6%	8.5%

Amazon	Supply chain and logistics management	\$46.1 billion	38.7%	20.2%
Google (Alphabet Inc.)	Search algorithms and data analytics	\$31.6 billion	92%	11.5%
Tesla	Electric vehicle technology and production	\$3.1 billion	19.5%	55.4%
Microsoft	Software development and cloud computing	\$25 billion	18.1%	16.2%

To outsmart their competition. The literature highlights that using advanced analytics and machine learning in organizational practices shows the need for ongoing development of skills and knowledge to promote innovation and sound decision-making in unstable environments. Therefore, matching organizational skills with market conditions boosts operational flexibility and strategically positions companies to take advantage of new opportunities (Richard et al., 2024). Moreover, management leadership is critical in developing competencies while dealing with market uncertainties. Strong leadership fosters a culture of innovation and teamwork, which is vital for adapting to technological changes. Analysis of AI-powered leadership shows that tech-driven leadership styles can change decision-making dynamics, influencing organizational unity and effectiveness in complex settings (Roducing *et al.*, 2024). For example, decentralized companies may gain quicker responses to market shifts through empowered teams. This flexibility highlights that competencies are standalone skills and intertwined abilities that grow within a larger strategic context. Leaders encouraging knowledge sharing and building trust can significantly improve their company’s adaptability to market changes, leading to sustained competitive advantages. The connection between organizational design and skills establishes a clear route for facing the difficulties of swiftly changing technologies. As companies face constant technological changes, their ability to innovate and adapt is influenced by fundamental design principles that promote experimentation and taking risks (Mclay, 2014). These principles are essential for developing a workforce skilled in dynamic capabilities and fostering an environment that supports learning and growth. Additionally, effectively aligning skills with organizational structures helps provide a competitive advantage, allowing firms to tap into new market opportunities and enhance customer engagement. By concentrating on these strategic Connections: Organizations can create a more robust position that deals with current market shifts and anticipates future challenges, securing their role in a more competitive environment. Visual depictions of these relationships further highlight the key elements in organizational design.

TABLE 4 Competencies of Market Dynamics

Competency	Industry Average	High-Performing Companies
	(%)	(%)
Adaptability to Change	70	90
Innovation Capability	65	85
Customer-Centric Culture	60	80

Agile Management	Project 50	75
Data-Driven Decision Making	55	80

The Role of Technology in Organizational Design

Bringing technology into organizational design is a significant change that significantly affects how businesses work and compete in a rapidly moving world. Organizations can simplify processes, improve communication, and increase teamwork among different departments by using modern digital tools and systems. For example, cloud computing allows data to be shared in real time so teams can collaborate from different locations. As noted by Bounfour et al. (Richard et al., 2024), organizations that utilize the benefits and simplicity of cloud technologies are likely to see significant changes, helping them adapt quickly to new market demands. This shift requires a reassessment of traditional management structures as more technology promotes decentralized and agile designs that encourage innovation and quick responses. As organizations adopt these changes, their designs must adapt to leverage these technological innovations effectively. Highlighting the role of artificial intelligence (AI) in leadership dynamics is another critical part of technology's impact on organizational design. AI systems can improve decision-making by quickly analyzing large amounts of data with a precision that humans cannot match. However, for these systems to be successful, they must be explainable and trustworthy, as highlighted in the evaluation of robot bosses (Ahmed Bounfour et al., 2022). Organizations can align AI leadership styles with operational needs by categorizing AI leaders into types like Maestro and Manager, increasing overall effectiveness. As businesses increasingly use AI in management roles, creating a framework that mixes human insight with machine efficiency becomes crucial. This mixed approach changes leadership structures and requires a cultural change within organizations to encourage acceptance and teamwork between human and AI leaders. Moreover, organizational solid design should view technological skills as key to maintaining a competitive edge. With fast technological changes constantly reshaping industries, companies must build flexible structures supporting ongoing learning and innovation. Studies show that organizations that include dynamic capabilities in their designs can respond better to technological changes and exploit new market opportunities (Roducing *et al.*, 2024). Aligning organizational skills with technological progress creates a proactive culture that welcomes change rather than just reacting. The ability to weave advanced analytics, AI, and machine learning into everyday operations improves efficiency and positions companies as leaders in innovation. In conclusion, developing a technology-focused organizational design demonstrates a commitment to handling complexity and equips businesses to succeed in a constantly changing environment.

Technological Advancements and Organizational Structure

Changing organizational structures is necessary as companies try to stay competitive in a world that is becoming more influenced by technology. Old hierarchical models often do not work well to handle the fast changes and complexities of technologies like artificial intelligence and cloud computing. Recent studies have pointed out that moving to more decentralized and flexible structures allows businesses to respond to market changes and customer demands quickly. By using adaptable frameworks, companies can encourage innovation, improve decision-making, and foster collaboration among diverse teams, thus strengthening their competitive position. Research indicates that organizations that adopt these transformative designs are better equipped to utilize technological advancements effectively

(Ahmed Bounfour et al., 2022). The connection between structural design and rapidly changing skills is crucial for maintaining success in technology-driven fields. Using advanced technologies improves operational efficiency and helps create a culture of ongoing improvement within organizations. For example, cloud-based platforms allow companies to decentralize operations, which promotes collaboration and knowledge sharing while keeping customer-focused results in mind. In the SaaS industry, it is clear that companies prioritizing user experience and adaptability have gained a decisive edge over their rivals (Allagh, 2024). These innovative methods align with the concepts of dynamic capabilities, which stress the need for continuous development of skills that align with technological progress. Therefore, organizational structures must support current technologies and prepare for future challenges, allowing for a proactive approach. Emphasizing adaptable organizational designs and focusing on continuous professional growth will help companies succeed in constant technological shifts. The relationship between organizational structure and technological developments has created a new standard for competitive strategies. Companies that ignore the need to adapt their structures risk falling behind competitors ready to innovate. The emergence of AI leadership tools shows that firms increasingly use technology to boost management efficiency, although challenges like transparency and trust in AI systems remain significant (Richard et al., 2024). Creating a practical organizational framework requires leaders to consider technology integration and the human aspects of trust and teamwork. Adopting a forward-thinking attitude toward organizational structures enables companies to integrate technological advancements into their strategies. This alignment lays the groundwork for a sustainable competitive edge, helping organizations remain resilient in a changing environment while promoting innovation and sound decision-making.

TABLE 5 Technological Advancements and Organizational Structure Data

Year	Technology Type	Impact on Organizations	Percentage of Organizations Adopting Technology	Difference in Competitiveness Before After Percentage
2021	Artificial Intelligence	Enhanced decision-making and operational efficiency	35	15
2022	Cloud Computing	Increased flexibility and scalability	47	20
2023	Internet of Things (IoT)	Improved data collection and customer engagement	50	25
2023	Blockchain	Enhanced security and transparency	30	18
2023	Automation and Robotics	Increased efficiency and reduced labor costs	40	22

Integration of Technology in Competency Development

Changing tech landscapes means that companies must add technology to their skill-building plans to stay competitive. Matching new technologies with employee training creates a partnership that boosts how quickly organizations can adapt. The research shows that using tools like artificial intelligence and machine learning makes operations smoother and encourages a culture of ongoing learning and flexibility. For example, firms can analyze data

to understand employee performance better, allowing them to customize training programs to address specific skill gaps. By creating systems that encourage adaptability, companies can use these technologies well, which leads to innovation and improves their market position (Roducing *et al.*, 2024). It is essential to see that adding technology is more than just using tools; it changes the core of how we develop skills. A thoughtful approach to using tech, like cloud computing, helps companies build a value chain focused on innovative knowledge and centered on the customer (Minwir *et al.*, 2023). This change requires a good grasp of the company's operating environment and the skills needed to succeed. By creating strong partnerships between the public and private sectors, companies can tap into a larger pool of resources and use best practices based on diverse experiences and knowledge. Thus, integrating technology into skill development gives employees the skills they need and ensures these skills match the fast-changing market needs (Ahmed Bounfour *et al.*, 2022). Integrating technology into skill development relies on building a solid corporate culture that welcomes change and innovation. This cultural shift encourages businesses to rethink their traditional structures, leading to a more teamwork-focused way to enhance skills. As seen in organizational design models, focusing on strategy, environment, and technology is crucial for developing effective skill-building programs. Adopting this out-Look enables companies to actively adjust their processes and frameworks actively, keeping their workforce competitive amid ongoing technological changes. The rise of AI in management roles highlights this trend, showing how technology integration can change leadership skills (Richard *et al.*, 2024). By strategically designing and adapting their culture, companies can turn tech challenges into chances for lasting competitive advantage.

Impact of Digital Transformation on Competitive Advantage

Digital transformation is an essential change in how companies work, affecting their internal processes and the competitive market. By adopting new technologies, businesses can improve efficiency, simplify operations, and engage better with customers. Cloud computing and advanced analytics help firms use data for intelligent decision-making, allowing quick reactions to market shifts. Research by Ahmed Bounfour and colleagues shows that businesses that change their models to fit the changing tech- environment do much better than those that do not ((Ahmed Bounfour *et al.*, 2022)). This ability to adapt encourages a culture of innovation, helping to maintain a competitive edge in a fast-moving market where being responsive to customer demands and tech advances is very important. Beyond making operations more efficient, digital transformation changes competitive advantage by improving knowledge skills within companies. Using AI tools and data-based decision-making allows businesses to better understand market trends and customer behavior, creating significant value. However, successfully implementing these technologies depends on an organizational design that encourages teamwork and flexibility. When leaders align their resources with technology, they can better take advantage of disruptive innovations to enhance business model innovation (BMI) ((Raza & Minhaj, 2023)). For example, companies that focus on visionary thinking and cultivate a culture of innovation can speed up their digital transformation, setting themselves apart from competitors that are slower to adapt. The connection between digital skills and organizational design is critical to staying competitive during rapid tech changes. Additionally, digital transformation affects how companies relate to consumers and position themselves in the market. Firms that focus on customer-centered strategies using digital tools can stand out by offering personalized experiences and improving satisfaction. The ability to gather and

analyze customer data helps create targeted marketing strategies and builds customer loyalty and trust. This aligns with findings from a qualitative study on SaaS industries, highlighting the need for companies to prioritize the customer experience to maintain a competitive edge during disruptions ((Al- laugh, 2024)). Therefore, combining advanced technology with a strong understanding of customer needs allows companies to manage complexity and uncertainty effectively, strengthening their market position and ensuring long-term success. The interaction of these factors shows that carefully executing digital transformation initiatives is essential for gaining and keeping a competitive advantage in a rapidly evolving tech landscape

TABLE 6 Digital Transformation Impact on Competitive Advantage

Year	Percentage of Companies Reporting Increased Competitive Advantage	Source
2020	36%	McKinsey & Company
2021	45%	PwC
2022	52%	Gartner
2023	55%	Deloitte

Case Studies of Successful Organizations

Successful organizations show how good organizational design and skills can create lasting competitive advantages in quickly changing tech environments. For example, the research in (Richard et al., 2024) shows that companies using cloud computing have changed their business models to be more efficient and adaptable. A financial services firm case study showed that cloud tech led to significant cost savings and better service delivery. Also, the framework from this study, which combines the Technology- Organization-Environment model and the Technology Acceptance Model, points out that perceived usefulness and ease of use are crucial to driving change. This ties in with established organizational design theories stating that aligning technology with strategic goals affects competitive standing. In another example, adding AI leadership roles within structures has been vital for firms wanting to boost decision-making and operational efficiency. Findings from (Ahmed Bounfour et al., 2022) show that companies with AI leaders enhance information processing and build higher levels of trust through open decision-making. Organizations that adopt this new approach can expect boosts in productivity and employee engagement, helping them keep competitive edges. Furthermore, the rising trust in AI governance shows a change in traditional leadership roles, and organizations need to rethink how they structure their leadership teams. The ability of AI to be seen as more than just a support tool but as a leader highlights a real-world example of strategic organizational design in today’s businesses. To further explain these ideas, the diagram showing factors of national competitive advantage gives a visual of how relationships among firm strategy, resource allocation, and industry dynamics lead to success. The links among these factors show why companies need flexible and adaptable structures to succeed. Case studies indicate that firms focusing on aligning their design with dynamic capabilities can better tackle disruptive innovations, leading to sustained market success. This need for adaptability aligns with findings in (Allagh, 2024), highlighting the importance of fostering innovation and reacting quickly to market shifts. Therefore, effective organizational design proves to be a critical factor in the ongoing competitiveness of successful organizations.

Analysis of Companies with Effective Organizational Design

The rise of companies that show good organizational design often focuses on adaptability and innovation, which are essential in today’s tech-driven market. For example, businesses that build flexible structures allow for quick decision-making Moreover, they use advanced

technologies like AI and machine learning. Combining these designs helps companies adjust their strategies to fit market and tech changes. The Resource-Based View states that matching organizational structure with strategic aims creates a lasting competitive edge, which has attracted attention among active firms. Combining these theories can precisely guide how companies shape their operations to stay competitive in changing tech environments, forming a base for lasting growth and strength against disruptions. A crucial part of effective organizational design is developing and fostering digital skills and a culture welcoming change. As highlighted in the research, businesses with good organizational designs often focus on their employees' soft skills alongside technical skills. This combined focus creates a workforce that knows how new technologies work and has a mindset aimed at innovative problem-solving and teamwork. Such cultural traits are crucial for utilizing the capabilities offered by technology since organizations with flexible structures can better engage in testing and learning in cycles. In light of increasing fragmentation in industries facing complex issues, these skills become critical for achieving sustainable competitive advantages through greater organizational agility and quick responses to outside pressures. Furthermore, the connection between advanced organizational designs and practical competencies can be seen in successful collaborations between public and private sectors that address major challenges, like those linked to the Sustainable Development Goals. Research indicates that organizations with solid design principles and collaborative skills can navigate complicated socioeconomic situations more effectively. The literature indicates that these partnerships usually succeed due to clear strategic plans that blend public resources with private innovation. As shown in (Ahmed *et al.*, 2009), grasping these connections can lead to better management strategies that make the most of diverse stakeholder contributions. Thus, the effects of organizational design go beyond internal efficiency, impacting more comprehensive social and economic results through strategic, adaptable collaborations that tackle urgent global needs.

TABLE 7 Companies with Effective Organizational Design

Company	Year	Revenue (Billion \$)	Employee Count	R&D Spending (Billion \$)
Google	2023	280	156,500	27.6
Apple	2023	394.3	164,000	27.7
Amazon	2023	513.98	1,540,000	58.2
Microsoft	2023	211.9	220,000	27.7
Netflix	2023	31.6	13,300	1.7

CONCLUSION

The study underscores the interdependence between organizational design and competencies in navigating the complexities of a rapidly changing technological environment. By aligning these elements, organizations can enhance their responsiveness to market shifts, capitalize on emerging opportunities, and foster a culture of continuous innovation, ultimately driving sustainable competitive advantage.

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