

New Product Development as a Catalyst for Competitive Business Performance

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ABSTRACT

Innovation has become increasingly important for organisations seeking to remain competitive in dynamic markets characterised by changing customer expectations, technological advancement, and growing competitive pressure. Effective product development provides organisations with opportunities to transform innovative ideas and market knowledge into commercially valuable products while supporting sustainable business growth. This article examines the strategic contribution of new product development to competitive business performance by considering development processes, market orientation, customer knowledge, organisational capabilities, digital technologies, and commercial value creation. The analysis identifies several critical challenges, including development uncertainty, resource limitations, changing customer requirements, technological complexity, and difficulties in coordinating knowledge across organisational functions. Particular attention is given to the importance of balancing strategic control with development flexibility, strengthening digital capabilities, transforming customer insights into meaningful innovation, and improving cross functional collaboration. Strategic suggestions emphasise adaptive development processes, effective use of digital technologies, systematic integration of customer knowledge, stronger organisational innovation capability, and closer alignment between product innovation and business strategy. Overall, competitive success depends not simply on introducing new products but on the organisation's ability to continuously convert knowledge, technology, market opportunities, and internal capabilities into superior customer value. This integrated approach can strengthen market differentiation, organisational learning, business growth, and long term competitive performance.

Keywords: *Innovation, Development, Strategy, Technology, Competitiveness*

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1. INTRODUCTION

New product development has become a central strategic activity for firms seeking to sustain growth, respond to changing customer expectations, and strengthen their competitive position. Rather than being limited to the technical creation of a product, NPD involves a coordinated process that connects idea generation, market analysis, product design, testing, commercialisation, and post launch learning. Cooper (2019) argues that successful NPD depends on clear strategic direction, strong project execution, customer focus, and effective portfolio management. Similarly, Florén et al. (2018) emphasise that the early stages of NPD are especially important because decisions made during idea development and concept definition shape later project outcomes. Gao and Bernard (2018) further highlight the importance of knowledge sharing in product development, particularly when firms must combine technical expertise with market information. Heimonen and Kohtamäki (2019) show that the advantage created by a new product or service portfolio is closely connected with innovation outcomes and organisational effectiveness. These perspectives indicate that NPD should be viewed as a strategic capability through which firms convert knowledge, ideas, and resources into market offerings that can generate superior value and support competitive business performance.

The importance of NPD has increased as markets become more dynamic, product life cycles shorten, and customers expect continuous improvements in quality, functionality, convenience, and value. Firms that are able to introduce relevant and differentiated products are better positioned to protect market share and create new sources of revenue. Yu et al. (2020) demonstrate that investment in new product development can contribute to innovation performance, although the effectiveness of such investment depends on the quality of innovation activities and their translation into successful products. Panizzon et al. (2020) similarly identify NPD ability as an important organisational capability for firms competing in international and turbulent markets. Forti et al. (2020) show that choices involving continuity and change in product attributes and development teams can influence new product performance. Yusof et al. (2020) also demonstrate that managerial practices affecting NPD teams, including the design of reward structures and employee motivation, can shape development outcomes. Together, these studies suggest that competitive performance does not emerge simply from spending more on product innovation. It depends on the firm's ability to manage people, knowledge, development processes, and strategic choices in a coordinated manner that produces offerings valued by the market.

Market knowledge is another major foundation of successful NPD because product innovation creates business value only when it addresses meaningful customer needs and market opportunities. Zhan et al. (2018) explain that the use of big data can strengthen customer involvement by helping firms identify recognised and unrecognised needs during product development. This capability allows organisations to move beyond internal assumptions and develop products that are more closely aligned with customer expectations. Quaye and Mensah (2019) also demonstrate that marketing innovation contributes to sustainable competitive advantage among manufacturing SMEs, indicating that product development must be supported by effective market positioning and value communication. Ferreira and Coelho (2020) find that dynamic capabilities and marketing capabilities are important for firm performance, particularly in environments that require continuous adaptation. In addition, Purchase and Volery (2020) emphasise that innovation increasingly involves changes in the way firms create, communicate, and deliver value to customers. Sheth and Parvatiyar (2021) further argue for a market driving perspective in which firms do not merely react to existing demand but can actively shape markets through innovation. Therefore, effective NPD requires the integration of customer insight, market intelligence, and strategic marketing capabilities throughout the development process.

The organisational process through which new products are developed is equally important because weak execution can prevent promising ideas from achieving commercial success. Iheanachor et al. (2021) provide evidence that poor product development practices can lead to suboptimal new product performance, showing that the quality of NPD processes matters as much as the initial product idea. Iqbal and Suzianti (2021) similarly identify product design activities, collaboration, innovation sources, process modelling, tools, and continuous improvement as important elements in NPD process design, especially for small and medium enterprises. Their work reinforces the need for NPD systems that match organisational resources and operating conditions rather than relying on a single rigid approach. Cassia et al. (2012) demonstrate that strategic innovation and new product development are also influenced by organisational characteristics, particularly in family firms, where decision

structures and firm specific resources may shape innovation behaviour. Sok et al. (2016) further show that product innovation can generate stronger performance when combined with complementary marketing resources and capabilities. These findings suggest that NPD performance depends on the alignment of development routines, organisational resources, collaborative practices, and commercial capabilities, allowing firms to move more effectively from product concepts to successful market outcomes.

Technology and digitalisation have further changed the conditions under which firms manage product innovation. Digital technologies allow firms to collect market information more rapidly, collaborate across organisational boundaries, shorten development cycles, and continuously improve products after market introduction. Pesch et al. (2021) show that digital product innovation requires firms to balance stability and fluidity through appropriate levels of formalisation, highlighting the need for both structure and adaptability. Ooi et al. (2021) demonstrate that even firms in traditional industries can use organisational capabilities and routines to transform user knowledge into innovation opportunities. Klein et al. (2021) further show that market orientation can act as an important mechanism supporting innovation related business model change, strengthening the connection between market knowledge and strategic renewal. Ma (2021) also highlights the importance of user attention and market orientation in supporting business model innovation within digital environments. These developments imply that firms can no longer manage NPD solely through conventional internal processes. Competitive performance increasingly depends on the ability to integrate digital tools, user knowledge, flexible routines, and market information into product development while maintaining sufficient managerial discipline to control cost, quality, timing, and strategic alignment.

Despite its strategic importance, NPD remains a complex and uncertain activity because firms must make investment decisions before market outcomes are fully known. Product development projects may fail because of weak customer understanding, poor cross functional coordination, inadequate resources, unsuitable development processes, delayed market entry, or limited differentiation from competing offerings. Cooper (2021) notes that the pandemic period accelerated the need for faster and more adaptive approaches to innovation, demonstrating how environmental disruption can force firms to reconsider established development practices. Abd Wahab and Yusof (2020) likewise show that NPD challenges are especially significant for smaller firms because resource limitations can constrain formal development activities and external collaboration. Iheanachor et al. (2021) confirm that weaknesses in product development practices can directly undermine new product performance, while Pesch et al. (2021) show that digital innovation requires a careful balance between formal control and flexibility. Accordingly, this article examines new product development as a catalyst for competitive business performance by focusing on how strategic direction, market knowledge, organisational capability, innovation processes, and technological adaptation contribute to stronger product outcomes. Understanding these relationships helps explain how firms can transform NPD into a structured source of customer value, market competitiveness, and sustainable business performance.

2. LITERATURE REVIEW

New product development has received considerable attention because of its important role in helping firms respond to market changes, introduce innovative products, and improve competitive business performance. Previous studies indicate that successful NPD is influenced by several interconnected factors, including strategic planning, market knowledge, customer involvement, organisational capabilities, innovation practices, and effective management of the development process (Cooper, 2019; Saunila, 2020; Yu et al., 2020; Iqbal & Suzianti, 2021). As competition and customer expectations continue to change, firms need to develop products that provide meaningful value while supporting their long term business objectives. Therefore, understanding the main factors contributing to NPD success is important for explaining how product development can strengthen organisational competitiveness. This section examines four major areas: NPD strategy and process, market orientation and customer knowledge, organisational and innovation capabilities, and the contribution of NPD to competitive business performance.

2.1 Blockchain Technology and its Role in Supply Chain Management

New product development is widely recognised as a structured strategic process through which firms transform ideas and market opportunities into commercially viable products. The literature indicates that effective NPD requires more than technical design because it combines opportunity identification, concept development,

evaluation, testing, commercialisation, and continuous improvement. Cooper (2019) explains that successful NPD is strongly influenced by strategic alignment, disciplined project selection, customer focus, and effective portfolio management. Florén et al. (2018) similarly emphasise that the early stages of product development are critical because decisions concerning ideas and concepts influence subsequent development quality and resource commitment. Yusof and Abd Wahab (2021) extend this view by showing that SMEs require NPD processes that reflect their particular resource limitations, organisational characteristics, and external collaboration needs. Iheanachor et al. (2021) also demonstrate that product development practices significantly influence the performance of new financial products and services. Collectively, these studies indicate that NPD should be treated as an integrated organisational process rather than an isolated innovation activity. A well designed process reduces uncertainty, strengthens decision quality, and improves the probability that innovative ideas can be converted into products that satisfy market requirements and support stronger business performance.

The design of the NPD process also requires firms to balance formal structure with flexibility because excessive rigidity can limit creativity while insufficient control can increase cost, delay, and strategic inconsistency. Pesch et al. (2021) show that formalisation can support digital product innovation when firms maintain sufficient fluidity to respond to changing information and emerging opportunities. Forti et al. (2020) similarly find that continuity and change in product attributes and development teams influence new product performance, indicating that NPD outcomes depend on how firms manage stability during periods of innovation. Gao and Bernard (2018) emphasise knowledge sharing as another important element because product development typically requires the integration of technical, managerial, and market information across functional boundaries. Mu et al. (2017) further demonstrate that strategic orientation can improve NPD performance through networking capability and networking ability, suggesting that firms benefit when internal development activities are connected with external knowledge sources. These findings show that an effective NPD process must establish clear procedures without removing the adaptability required for experimentation and learning. The ability to combine formal governance, knowledge integration, teamwork, and external networking therefore becomes important for reducing development uncertainty and improving the commercial value of new products.

2.2 Environmental Sustainability and Blockchain

Market orientation represents a major foundation of NPD because firms must understand customer requirements, competitor actions, and emerging market opportunities before committing substantial resources to product development. De Luca and Atuahene-Gima (2007) demonstrate that market knowledge and cross functional collaboration provide important routes to stronger product innovation performance. Najafi-Tavani et al. (2016) similarly find that market orientation can contribute to new product performance, particularly when firms possess sufficient absorptive capacity to recognise and use valuable external knowledge. Zhan et al. (2018) show that big data can strengthen customer involvement in product development by helping firms identify both recognised and unrecognised customer needs. Quaye and Mensah (2019) further report that marketing innovation can contribute to sustainable competitive advantage among SMEs, highlighting the importance of connecting product innovation with market positioning and value delivery. These studies suggest that customer knowledge should not be treated as information collected only before development begins. Instead, market intelligence needs to be incorporated throughout concept creation, product design, testing, and commercialisation. Continuous interaction with the market enables firms to improve product relevance, reduce the risk of poor market acceptance, and develop offerings that provide clearer value than competing alternatives.

The literature also distinguishes between responding to existing customer expectations and identifying opportunities that customers may not yet be able to express clearly. Ferreira et al. (2020) demonstrate that dynamic capabilities, creativity, and innovation capability influence competitive advantage and firm performance by helping organisations adapt their resources to changing environments. Purchase and Volery (2020) broaden this perspective by explaining that marketing innovation involves changes in how firms create and communicate value, rather than focusing only on modifications to existing products. Yusof and Salleh (2021) further shows that market orientation, learning orientation, organisational innovation, and organisational performance are closely connected, particularly among SMEs that need to continuously strengthen their competencies. Sheth and Parvatiyar (2021) similarly emphasise the importance of moving beyond a purely reactive market perspective by recognising opportunities to shape customer expectations and market development. Such perspectives are important for NPD because excessive dependence on existing customer preferences may encourage only incremental improvements. Effective NPD therefore requires both customer responsiveness and proactive opportunity recognition. Firms

capable of interpreting customer behaviour, technological developments, competitor movement, and broader market changes are better positioned to identify promising product concepts and achieve stronger differentiation.

2.3 Organisational and Innovation Capabilities for New Product Development

Innovation capability provides the organisational foundation that enables firms to repeatedly generate, evaluate, develop, and commercialise new product ideas. Saunila (2020) concludes from a systematic review that innovation capability in SMEs is closely associated with organisational practices and innovation performance, including outcomes related to new products. This capability includes leadership support, employee knowledge, organisational learning, innovation culture, resource availability, and the capacity to convert ideas into practical outcomes. Ferreras-Méndez et al. (2021) demonstrate that entrepreneurial orientation can strengthen NPD performance in SMEs through business model innovation, suggesting that entrepreneurial behaviour needs complementary organisational mechanisms to produce meaningful product outcomes. Sok et al. (2016) similarly show that product innovation can generate stronger firm performance when it is supported by appropriate marketing resources and capabilities. Yu et al. (2020) further indicate that investment in new product development contributes to innovation performance, although financial commitment alone does not guarantee superior outcomes. Together, these studies support the view that NPD performance depends on how effectively firms deploy and combine organisational resources. Technical expertise, entrepreneurial orientation, marketing capability, organisational learning, and financial resources must therefore operate as a coordinated capability system if NPD activities are expected to contribute consistently to competitive business performance.

Cross functional cooperation is particularly important within this capability system because NPD normally requires contributions from marketing, research and development, operations, finance, design, and senior management. Hoai et al. (2021) show that cross functional cooperation can generate competitive benefits and contribute to new product development by improving coordination and information exchange across organisational functions. Gao and Bernard (2018) similarly explain that knowledge sharing is essential because development teams must combine different forms of technical and commercial expertise to solve complex product problems. Sethi (2000) provides earlier evidence that a strong shared identity within cross functional product development teams can improve new product performance, illustrating the importance of team structure, autonomy, and common objectives. Liu (2019) also highlights the importance of cross border knowledge transfer for NPD, particularly for firms operating across geographically dispersed markets and knowledge locations. These studies demonstrate that organisational capability is not created simply by possessing specialised resources. It also depends on the firm's ability to integrate people and knowledge effectively. When functional units work independently, NPD may experience conflicting priorities and weak decision making. Collaborative structures, in contrast, can accelerate information flow, strengthen problem solving, and improve alignment between technical feasibility and market requirements.

2.4 New Product Development and Competitive Business Performance

The relationship between NPD and competitive business performance is supported by research showing that successful product innovation can improve differentiation, market position, growth opportunities, and organisational performance. Yu et al. (2020) find that investment associated with new product activities can contribute to innovation performance, reinforcing the strategic value of sustained product development. Forti et al. (2020) demonstrate that managerial decisions concerning product attributes and development team continuity affect new product performance, showing that competitive outcomes depend on the quality of development choices. Ferreras-Méndez et al. (2021) further establish a relationship between entrepreneurial orientation and NPD performance in SMEs, with business model innovation operating as an important mechanism that transforms entrepreneurial behaviour into stronger development outcomes. Saunila (2020) also identifies innovation capability as a significant organisational foundation for innovation related results in SMEs. These findings indicate that NPD can function as a catalyst for competitive performance when firms successfully transform organisational resources into products that generate superior customer and market value. However, the contribution of NPD should not be assessed only through the number of new products introduced. More meaningful performance outcomes include market acceptance, sales growth, customer value, differentiation, profitability, speed of commercialisation, and the development of capabilities that support future innovation.

Competitive benefits from NPD are also shaped by a firm's ability to adapt product development activities to technological and environmental changes. Pesch et al. (2021) demonstrate that digital product innovation introduces new managerial requirements because organisations must balance formal control with flexibility and continuous adjustment. Iqbal and Suzianti (2021) show that SMEs particularly require suitable NPD process designs that accommodate limited resources, collaboration, innovation sources, and open innovation practices. Iheanachor et al. (2021) provide further evidence that product development practices affect new product outcomes, reinforcing the importance of execution quality in achieving competitive performance. Latifi et al. (2021) demonstrate that business model innovation can contribute to competitive advantage and firm performance, although successful outcomes depend on how firms manage uncertainty and organisational transformation. These insights reinforce the argument that NPD operates within a broader system involving strategy, customer knowledge, organisational capability, digital technology, and business model adaptation. Accordingly, the literature supports the position that NPD becomes a catalyst for competitive business performance when firms manage development systematically while remaining responsive to technological and market change. Sustainable competitive advantage therefore depends not solely on product novelty, but also on the organisational ability to repeatedly convert innovation opportunities into commercially valuable products.

3. ISSUES IN BLOCKCHAIN ADOPTION FOR SUPPLY CHAIN SUSTAINABILITY

New product development plays an important role in enabling organisations to introduce innovative products, respond to changing market needs, and strengthen competitive business performance. However, achieving successful NPD outcomes remains challenging because the development process involves uncertainty, substantial resource commitment, changing customer expectations, technological advancement, and coordination across different organisational functions. Cooper (2019) explains that firms continue to face difficulties in project selection, resource allocation, development execution, and effective responses to market requirements. Saunila (2020) further highlights that innovation outcomes depend strongly on the ability of organisations to develop and manage appropriate innovation capabilities. These challenges are particularly important for smaller firms because limitations in resources, capabilities, collaboration, and formal development processes can restrict their ability to manage NPD effectively (Yusof and Abd Wahab, 2020). At the same time, increasing digitalisation has created additional pressure for organisations to balance structured development practices with the flexibility required to respond to rapid technological and market changes (Pesch et al., 2021). Therefore, understanding the critical issues affecting NPD is necessary to determine why some development initiatives achieve market success while others fail to generate the expected business outcomes.

3.1 Navigating Complexity and Uncertainty in New Product Development

One of the most significant issues in NPD is the difficulty of managing a development process characterised by uncertainty, changing information, resource constraints, and pressure to reduce development time. Cooper (2019) explains that effective innovation requires appropriate project selection, clear development stages, resource allocation, and portfolio management. However, organisations may experience difficulties in applying these practices consistently, particularly when market and technological conditions change during product development. Iqbal and Suzianti (2021) identify several challenges affecting NPD among SMEs, including limited resources, capability constraints, collaboration difficulties, and weaknesses in formal development processes. Žužek et al. (2021) similarly explain that SMEs require development approaches that reflect their specific organisational characteristics because conventional NPD models may not always be suitable for firms with limited resources. These conditions create uncertainty concerning which product ideas should receive investment and how resources should be distributed among competing development projects. Poor decisions during the development process may result in higher costs, longer development periods, inappropriate product specifications, or unsuccessful commercialisation. Therefore, firms must establish sufficient structure to control NPD activities while retaining the flexibility required to respond to new information, technological changes, and emerging market opportunities.

The challenge becomes more complex when digital technologies are incorporated into product development activities. Digital tools can improve communication, information sharing, product design, and collaboration, but they can also require significant changes in organisational routines and employee capabilities. Marion and Fixson (2021) explain that digital technologies are transforming innovation work by changing how individuals collaborate and how organisations manage development activities. Pesch et al. (2021) similarly demonstrate that digital product innovation requires organisations to balance formalisation with fluidity because excessive control

can restrict adaptation while insufficient structure may create uncertainty and coordination problems. Yusof et al. (2020) also highlight the importance of information technology in supporting communication and knowledge management within NPD activities. However, adopting technology without appropriate organisational processes may not automatically produce better development outcomes. Firms need employees who can use digital tools effectively and managers who can integrate technological capabilities into existing development processes. Consequently, the central challenge is not simply adopting new technology but determining how technology, people, processes, and decision structures can operate together. Failure to achieve this integration may increase development complexity and prevent organisations from obtaining the expected benefits of digital product innovation.

3.2 Bridging the Gap Between Customer Expectations and Market Opportunities

Understanding customers represents another major challenge because market success depends heavily on whether new products provide value that customers recognise and are willing to accept. Customer preferences can change rapidly, making information collected during the early stages of product development less relevant by the time a product reaches the market. De Luca and Atuahene-Gima (2007) demonstrate that market knowledge contributes to product innovation performance when organisations effectively integrate information across different functional areas. Najafi-Tavani et al. (2016) similarly show that the contribution of market orientation to new product performance depends partly on an organisation's ability to recognise, absorb, and apply external knowledge. However, firms may collect considerable customer information without successfully converting it into useful development decisions. Zhan et al. (2018) demonstrate that big data can improve customer involvement by helping firms identify both recognised and unrecognised customer needs. Nevertheless, large amounts of information can create additional difficulties when organisations lack suitable analytical capabilities. Consequently, firms must move beyond simply collecting customer data and develop the ability to identify which information is relevant to product decisions. Weak interpretation of market signals may result in products that technically perform well but fail to address meaningful customer needs or emerging market opportunities.

A further challenge involves balancing current customer expectations with opportunities to create products that customers have not previously experienced. Excessive dependence on existing customer preferences may encourage firms to focus on minor product improvements rather than more significant innovations. Sheth and Parvatiyar (2021) argue that organisations can move beyond simply responding to existing markets by actively influencing market development and customer behaviour. Purchase and Volery (2020) similarly explain that innovation involves broader approaches to creating and communicating customer value. This perspective is important because successful NPD may require organisations to recognise opportunities that are not immediately visible through conventional customer research. Quaye and Mensah (2019) demonstrate that marketing innovation can contribute to sustainable competitive advantage, particularly when firms successfully connect innovation activities with market requirements. Firms therefore need to combine customer responsiveness with proactive market exploration. Focusing only on current demand can reduce opportunities for differentiation, while ignoring customer expectations can increase the risk of market rejection. The challenge for NPD managers is to achieve an appropriate balance between these perspectives so that new products satisfy meaningful customer requirements while simultaneously creating distinctive value and new opportunities for competitive growth.

3.3 Overcoming Organisational Barriers to Innovation and Product Success

Successful NPD requires organisations to possess and coordinate different resources and capabilities, including employee knowledge, financial resources, technological expertise, leadership support, marketing capabilities, and organisational learning. However, these resources are not equally available across firms. Saunila (2020) explains that innovation capability consists of several organisational elements that collectively influence innovation performance, particularly among SMEs. Firms with weak innovation capabilities may generate promising ideas but lack the resources or expertise required to transform those ideas into commercially successful products. Iqbal and Suzianti (2021) identify resource limitations and capability constraints as significant challenges affecting NPD in SMEs. Yu et al. (2020) further demonstrate that investment in NPD can contribute to innovation performance, but investment alone is insufficient when resources are not effectively transformed into productive innovation activities. This creates an important organisational challenge because managers must decide how limited resources should be allocated between existing operations and uncertain development projects. Organisations that consistently prioritise immediate operational requirements may underinvest in innovation,

while excessive investment in poorly selected projects can create financial pressure. Therefore, competitive NPD requires firms not only to possess resources but also to develop the managerial capabilities necessary to allocate, integrate, and utilise those resources effectively.

Organisational barriers may also emerge from weak collaboration between departments involved in product development. NPD commonly requires marketing, research and development, operations, finance, design, and management teams to contribute different forms of expertise. However, these functions may have different objectives, priorities, and approaches to decision making. Yusof and Abd Wahab (2010) demonstrate that cross functional collaboration can influence product innovativeness, although its effectiveness depends on organisational conditions including trust, shared responsibility, social interaction, and goal alignment. Hoai et al. (2021) similarly identify cross functional cooperation as an important mechanism for supporting NPD and competitive advantage. Park et al. (2009) further show that employees who possess both technological and marketing knowledge can strengthen communication and information sharing within NPD teams. Nevertheless, organisations may experience communication barriers when specialised knowledge remains within individual departments. Such separation can result in products that are technically strong but poorly aligned with customer requirements or commercially attractive concepts that are difficult to manufacture efficiently. Overcoming these barriers therefore requires stronger knowledge sharing, common objectives, effective leadership, and collaborative decision making throughout the development process.

3.4 Turning Product Innovation into Sustainable Competitive Performance

Developing an innovative product does not automatically guarantee stronger business performance because commercial success depends on whether the product creates meaningful customer value and supports the strategic position of the firm. Organisations may successfully complete an NPD project but still experience disappointing sales, weak market acceptance, or insufficient financial returns. Ferreras-Méndez et al. (2021) demonstrate that entrepreneurial orientation can contribute to NPD performance through business model innovation, suggesting that innovative behaviour needs appropriate mechanisms for creating and capturing value. Sok et al. (2016) similarly show that product innovation can produce stronger firm performance when it is combined with complementary marketing resources and capabilities. Forti et al. (2020) further demonstrate that decisions concerning product attributes and development team continuity can influence new product performance. These findings indicate that the competitive contribution of NPD depends on more than the novelty of the product itself. Product development needs to be supported by effective market positioning, pricing, distribution, promotion, and customer value creation. If these activities are poorly coordinated, firms may invest considerable financial and organisational resources in developing products that fail to generate the expected commercial returns or strengthen their competitive position.

Sustaining competitive performance through NPD becomes even more difficult when markets and technologies continue to change after a product has been introduced. A product that initially provides strong differentiation may quickly lose its competitive value when competitors introduce similar or improved alternatives. Marion and Fixson (2021) explain that digital technologies are transforming innovation activities and creating new possibilities for faster collaboration and development. However, these opportunities also increase pressure on organisations to continuously strengthen their innovation capabilities. Pesch et al. (2021) show that digital product innovation requires organisations to maintain an appropriate balance between stability and adaptability. Ferreras-Méndez et al. (2021) further indicate that complementary organisational mechanisms are necessary for entrepreneurial activities to generate stronger NPD outcomes. Consequently, firms cannot depend on a single successful product to maintain competitive business performance over an extended period. They require the capability to continuously identify opportunities, develop valuable products, learn from market outcomes, and adjust development strategies. The critical issue is therefore whether organisations can transform NPD from an occasional project into a sustainable organisational capability that repeatedly generates customer value, market differentiation, and stronger long term business performance.

4. STRATEGIC DISCUSSION ON NEW PRODUCT DEVELOPMENT AND COMPETITIVE PERFORMANCE

The issues surrounding new product development demonstrate that product innovation cannot be separated from organisational strategy, market knowledge, technological capability, and business performance. Successful NPD

requires firms to manage uncertainty while ensuring that new products remain relevant to customers and commercially valuable. Cooper (2019) highlights the importance of systematic development practices, while Saunila (2020) shows that innovation capability consists of several organisational dimensions that support innovation outcomes. At the same time, digital technologies have changed how product development teams communicate, collaborate, gather information, and make decisions (Marion & Fixson, 2021). Market conditions further influence the effectiveness of NPD because customer expectations and technological opportunities may change throughout the development process. Yusof et al. (2020) demonstrate that entrepreneurial orientation and market orientation can influence NPD performance differently depending on firm and environmental conditions. Therefore, the issues identified earlier should not be considered independently. Instead, NPD performance depends on how effectively firms integrate development processes, digital capabilities, customer knowledge, organisational resources, and commercial strategies. This section discusses these relationships through five interconnected areas that explain how firms can strengthen the contribution of NPD to competitive business performance.

4.1 Strengthening Strategic Control While Preserving Development Flexibility

The complexity identified in NPD processes suggests that organisations require structured management systems, but such systems should not prevent experimentation and adjustment. Cooper (2019) explains that effective product innovation requires systematic project evaluation, portfolio management, customer involvement, and appropriate resource allocation. However, the effectiveness of these practices depends on how they are adapted to organisational conditions. Iqbal and Suzianti (2021) show that SMEs have distinctive NPD characteristics because their financial resources, technological capabilities, organisational structures, and access to specialised knowledge may differ considerably from those of larger firms. Similarly, Žužek et al. (2021) propose an NPD approach specifically designed for SMEs by incorporating principles that support greater flexibility and responsiveness. These findings suggest that firms should avoid treating formal NPD models as fixed procedures that must be applied identically to every project. Instead, development processes need sufficient control to evaluate ideas, manage resources, and maintain product quality while allowing teams to modify activities when new information becomes available. The appropriate balance between control and flexibility can reduce unnecessary development activities while supporting learning, creativity, and more effective responses to emerging market opportunities.

Strategic control is particularly important when firms face pressure to reduce development time while maintaining product quality and reliability. Accelerating NPD may provide earlier market entry, but excessive emphasis on speed can create weaknesses if product testing and improvement activities are reduced. Gao et al. (2021) demonstrate that innovative product development involves important tradeoffs among product performance, reliability, and time to market. This indicates that development speed should not be considered an independent measure of success. Firms need to determine whether faster commercialisation creates greater market value without increasing the possibility of quality problems or customer dissatisfaction. Pesch et al. (2021) similarly find that formalisation can support digital product innovation, although its benefits may decline when organisational control becomes excessive. The implication is that NPD governance should function as an enabling mechanism rather than simply as administrative control. Clear responsibilities, appropriate decision points, regular project evaluation, and flexible development routines can help firms manage uncertainty more effectively. Such an approach allows organisations to protect development resources while maintaining the adaptability needed to respond to technological changes, customer feedback, and unexpected difficulties during product development.

4.2 Leveraging Digital Capabilities to Accelerate Product Innovation

Digital transformation creates significant opportunities for addressing the complexity associated with NPD because digital tools can improve information processing, communication, collaboration, and product development activities. Marion and Fixson (2021) explain that digital technologies are transforming the innovation process by changing the nature of work and interaction among individuals and organisations. These technologies can support faster information exchange and allow development teams to coordinate activities across different locations and functions. Pan et al. (2021) further demonstrate that strategic orientations can strengthen digital capabilities and subsequently influence new product development. Their findings are particularly important because they indicate that possessing digital technologies does not automatically improve NPD performance. Firms require strategic direction and organisational capabilities that allow technologies to contribute meaningfully

to product innovation. Therefore, digitalisation should be integrated into the wider NPD strategy rather than treated as a separate technology project. Organisations need to determine which digital tools improve specific development activities, including market analysis, product design, customer interaction, knowledge sharing, testing, and project coordination. Appropriate integration can improve development responsiveness while reducing information barriers that commonly weaken innovation outcomes.

The value of digital capability is also closely connected to organisational adaptability. Pesch et al. (2021) explain that digital product innovation requires a balance between organisational stability and fluidity, indicating that digital environments create new managerial challenges alongside new opportunities. Firms may invest in advanced systems but obtain limited benefits when employees lack appropriate knowledge or when existing processes prevent information from being used effectively. Pan et al. (2021) similarly identify digital capabilities as an important mechanism through which strategic orientation contributes to NPD. These findings suggest that digital transformation in NPD should involve people, processes, and organisational routines in addition to technological infrastructure. Development teams must possess sufficient skills to interpret digital information and transform it into useful product decisions. Managers must also establish communication structures that encourage information sharing between technical and commercial functions. In this respect, digital capability becomes a strategic organisational resource rather than merely an operational tool. Firms that successfully combine technological resources with flexible organisational practices can improve their ability to identify opportunities, coordinate development activities, and respond more rapidly to market changes, thereby strengthening the overall contribution of NPD to competitive performance.

4.3 Transforming Customer Knowledge into Market Relevant Innovation

The gap between customer expectations and market opportunities demonstrates that effective NPD requires more than simply collecting information about current customer preferences. Firms need mechanisms that convert customer information into knowledge that can guide product concepts, design decisions, and commercialisation strategies. Zhan et al. (2019) show that data driven approaches can help organisations extract useful customer knowledge and identify patterns that support innovative product development and marketing decisions. Jiao et al. (2020) further demonstrate that customer participation can contribute to NPD performance when supported by social media and appropriate market and technical knowledge processing capabilities. This finding indicates that customer involvement is more productive when organisations possess the ability to interpret and apply the information customers provide. Ooi et al. (2021) similarly show that firms in traditional industries can establish organisational routines that transform user knowledge into product innovation opportunities. Therefore, customer involvement should not be limited to basic surveys or feedback collected after product development. Firms can integrate customer knowledge throughout idea generation, concept evaluation, development, testing, and product improvement. Such continuous involvement may help reduce market uncertainty while ensuring that product innovation creates meaningful value for intended users.

However, firms also need to recognise that strong customer orientation does not mean following every expressed customer preference. Excessive responsiveness may restrict the ability to identify opportunities for products that customers have not yet considered. Covin et al. (2020) demonstrate that entrepreneurial orientation and market orientation can jointly influence NPD performance, but the effectiveness of combining these orientations varies according to firm size, technological intensity, and environmental turbulence. Their findings suggest that firms need to balance customer knowledge with proactive opportunity seeking. Market orientation can reduce uncertainty by keeping firms close to customer needs, while entrepreneurial orientation encourages experimentation and exploration of new market possibilities. Yusof and Razali (2020) also find that the effect of customer participation on product innovativeness is not unlimited, indicating that greater customer involvement does not always result in stronger innovation. Consequently, NPD teams should evaluate customer information alongside technological possibilities, competitor developments, organisational capabilities, and future market trends. This balanced approach can help organisations avoid producing products that merely imitate existing market expectations and instead support products that combine customer relevance with sufficient novelty to create competitive differentiation.

4.4 Building Organisational Capabilities and Cross Functional Integration

The organisational barriers identified in NPD highlight the importance of developing innovation capabilities rather than depending solely on financial investment or individual employee expertise. Saunila (2020) explains that innovation capability in SMEs is multidimensional and includes several organisational factors that collectively support innovation processes and outcomes. This perspective suggests that successful NPD requires firms to develop systems that encourage learning, knowledge sharing, leadership involvement, employee participation, and effective resource management. Liu et al. (2020) further demonstrate that dynamic capability influences the relationship between NPD and sustainable performance among small and medium manufacturing enterprises. Firms therefore need the ability to reconfigure resources and capabilities when market or environmental conditions change. Simply increasing expenditure on product development may not create sustainable performance if the organisation lacks the capability to transform resources into valuable innovation. NPD should consequently be supported by continuous capability development, including technical knowledge, market intelligence, managerial expertise, and organisational learning. These capabilities allow firms to respond more effectively to unexpected problems, improve development decisions, and apply lessons from previous projects to future product development activities, strengthening the repeatability and reliability of innovation performance.

Cross functional integration is particularly important because product innovation normally involves knowledge from several organisational areas. Marketing may understand customers, technical employees may understand product feasibility, operations may evaluate production requirements, and financial personnel may assess commercial viability. However, these forms of knowledge create limited value when they remain isolated within individual departments. Hoai et al. (2021) show that cross functional cooperation can contribute to competitive benefits and organisational performance. Ooi et al. (2021) also demonstrate that organisational routines are important for converting user knowledge into innovation outputs. These findings indicate that firms need structures that allow different functional specialists to contribute throughout the development process rather than only during their traditional stages. Cross functional communication can improve early identification of technical, market, and production problems while reducing the likelihood that costly modifications are required later. Effective integration also helps establish common objectives, reducing conflicts between departments that may otherwise prioritise different performance measures. Therefore, organisational capability in NPD should be understood not merely as the strength of individual departments but as the ability of the organisation to combine specialised knowledge into coordinated decisions that support successful product development.

4.5 Converting Product Innovation into Sustainable Competitive Performance

The relationship between NPD and competitive performance depends ultimately on whether product innovation produces meaningful market and business outcomes. Introducing a new product alone does not guarantee stronger performance because competitive value depends on product differentiation, customer acceptance, market timing, commercial execution, and organisational capability. Ferreras-Méndez et al. (2021) find that entrepreneurial orientation contributes to NPD performance among SMEs and that business model innovation plays an important mediating role in this relationship. This evidence indicates that firms need an effective approach for creating and capturing value from product innovation. Liu et al. (2020) similarly demonstrate that the relationship between NPD and sustainable performance is influenced by dynamic capability and environmental conditions. Consequently, firms should evaluate NPD success using broader indicators than the number of products introduced. Measures such as customer acceptance, sales contribution, profitability, market growth, product quality, development efficiency, and competitive differentiation provide a more meaningful assessment of whether NPD contributes to business performance. Such evaluation also enables managers to identify weaknesses and use knowledge from previous projects to improve future development decisions.

Sustainable competitive performance further requires NPD to become a continuous organisational capability rather than an occasional response to competitive pressure. Panizzon et al. (2020) identify several determinants that contribute to a firm's ability to develop new products for international markets, reinforcing the importance of combining organisational capabilities and strategic conditions. Yusof and Abd Wahab (2020) similarly shows that innovation capability needs to be understood through multiple organisational dimensions rather than as a single activity. Ferreras-Méndez et al. (2021) further demonstrate that NPD performance can be strengthened when entrepreneurial orientation is translated through business model innovation. Taken together, these findings indicate that sustained NPD performance emerges when product innovation is connected with strategy, organisational learning, market understanding, digital capabilities, and effective value creation. Firms should therefore view each NPD project as both a commercial initiative and an opportunity to strengthen future

innovation capability. Knowledge gained from successful and unsuccessful development activities can improve project selection, customer understanding, resource allocation, and commercialisation decisions. Through continuous learning and capability development, NPD can move beyond producing individual products and become a strategic mechanism for generating customer value, market differentiation, business growth, and stronger long term competitive performance.

5. STRATEGIC SUGGESTIONS FOR ENHANCING NEW PRODUCT DEVELOPMENT SUCCESS

The effectiveness of new product development can be strengthened when organisations address the managerial, technological, market, and organisational challenges identified in the previous discussion. NPD should not be treated merely as a process of generating and launching new products, but as a strategic activity that requires continuous improvement and coordination across different areas of the organisation. Cooper (2019) emphasises that effective product development requires appropriate strategic direction, project selection, customer focus, and resource allocation. At the same time, organisations need sufficient innovation capability to transform available knowledge and resources into meaningful innovation outcomes (Saunila, 2020). Digitalisation has also changed the way firms organise product development, communicate knowledge, and collaborate across different functions (Marion & Fixson, 2021). Therefore, improving NPD performance requires an integrated approach that combines process management, digital capability, customer knowledge, organisational collaboration, and commercial value creation. Based on the issues and discussion presented earlier, five strategic suggestions are proposed to strengthen NPD effectiveness and its contribution to competitive business performance.

5.1 Creating an Agile and Strategically Controlled NPD Process

Organisations should develop an NPD process that combines systematic management with sufficient flexibility to respond to changes in customer requirements, technology, and competitive conditions. A structured development process is necessary because organisations need clear procedures for evaluating ideas, allocating resources, monitoring development activities, and determining whether projects should continue. However, excessive formalisation may reduce the ability of development teams to experiment and respond quickly to unexpected changes. Iqbal and Suzianti (2021) identify process design, collaboration, innovation sources, tools, and continuous improvement as important considerations for NPD, particularly among SMEs. Pesch et al. (2021) similarly demonstrate that formalisation can support digital product innovation when organisations maintain an appropriate balance between stability and fluidity. Therefore, firms should establish clear development stages covering idea generation, concept evaluation, product development, testing, and commercialisation while allowing teams to revise decisions when important new information becomes available. Management should also establish clear responsibilities at each development stage so that decisions are not unnecessarily delayed. Such an approach can improve control over development cost, quality, and timing while maintaining the flexibility required to respond effectively to uncertain market and technological conditions.

Continuous project evaluation should also become an important component of the NPD process because early identification of weak projects can prevent unnecessary expenditure and resource commitment. Management should establish regular review points where development teams evaluate technical feasibility, customer value, expected cost, market potential, competitive differentiation, and alignment with organisational strategy. Iqbal and Suzianti (2021) emphasise that NPD process design should consider continuous improvement and the specific capabilities available within an organisation. Firms should therefore use information obtained from previous development projects to improve future decision making. Completed projects can be reviewed to determine which development activities contributed to success and which activities created delays, additional costs, or market difficulties. Pesch et al. (2021) further indicate that appropriate formalisation can provide stability while maintaining the adaptability necessary for innovation. Accordingly, management should avoid applying identical procedures to every development project because projects may differ substantially in risk, complexity, technology, and market uncertainty. A flexible review system can allow greater experimentation for highly innovative products while maintaining stronger controls for projects requiring substantial investment. This approach can gradually improve organisational learning and strengthen the reliability of future NPD decisions.

5.2 Advancing Digital Capabilities for Smarter Product Development

Organisations should strengthen digital capabilities to improve the speed, accuracy, and coordination of product development activities. Digital technology should be selected according to specific development needs rather than adopted simply to follow technological trends. Marion and Fixson (2021) explain that digital tools have significantly transformed innovation work by changing collaboration patterns, decision authority, organisational arrangements, and knowledge sharing during NPD. Therefore, organisations should first identify areas where digital technology can solve existing development problems. Digital platforms can support communication among development teams, while digital design and information systems can improve product evaluation and access to development knowledge. Pesch et al. (2021) further demonstrate that digital product innovation requires organisations to manage both stability and flexibility. Consequently, technological systems should support rather than unnecessarily restrict innovation activities. Management should also ensure that information generated through digital tools is accessible to the employees responsible for product decisions. Effective digital integration can reduce information barriers between functional areas and allow development teams to identify problems more quickly. By connecting technology directly with NPD objectives, firms can improve development efficiency while avoiding unnecessary investment in systems that provide limited strategic or operational value.

Developing employee digital competence should occur simultaneously with technological investment because advanced technology provides limited benefits when employees cannot use it effectively. Marion and Fixson (2021) demonstrate that digital transformation affects not only the tools used during innovation but also the nature of work and collaboration within organisations. Firms should therefore provide practical training that enables development employees to use digital systems for communication, product design, customer analysis, information management, and project coordination. Digital knowledge should also be shared between departments so that technological capability does not remain concentrated within information technology or technical functions. Pesch et al. (2021) indicate that digital innovation requires organisational structures capable of balancing control with adaptability. Management can initially introduce new technologies through selected development projects and evaluate their effectiveness before wider implementation. Employees involved in these projects can provide feedback regarding system usefulness, training requirements, and operational difficulties. This gradual approach can reduce implementation risk while allowing firms to adapt technologies to their actual NPD requirements. Through appropriate investment, employee development, and organisational support, digital capability can become a strategic resource that enables faster learning, stronger collaboration, and more effective product development decisions.

5.3 Transforming Customer Insights into Meaningful Product Innovation

Organisations should establish systematic mechanisms for integrating customer knowledge throughout the NPD process rather than limiting customer involvement to the initial market research stage. Customer information can provide important insights concerning existing problems, desired product characteristics, purchasing behaviour, and dissatisfaction with current market offerings. Jiao et al. (2020) demonstrate that customer participation can improve NPD performance, particularly when firms possess suitable knowledge processing capabilities and effectively use social media to support customer interaction. Organisations should therefore collect customer information through several channels, including interviews, product testing, customer feedback, sales records, complaints, and digital interactions. Information collected through these channels should be analysed jointly by marketing and product development teams to identify patterns that may influence product decisions. Customer knowledge should then be translated into specific product requirements that can guide concept development, design, testing, and commercialisation. This process can reduce the possibility that development teams create technically successful products that provide limited customer value. Continuous customer involvement can also allow firms to identify product weaknesses before full commercialisation, reducing the cost and reputational consequences associated with unsuccessful market introduction.

Customer participation should nevertheless be managed carefully because firms cannot depend entirely on customers to determine future product innovation. Customers may provide valuable information concerning existing needs but may have difficulty identifying completely new technological possibilities or future market opportunities. Jiao et al. (2020) demonstrate that the contribution of customer participation to NPD depends on complementary organisational capabilities, indicating that greater involvement alone does not guarantee better innovation outcomes. Organisations should therefore combine customer knowledge with competitor analysis, technological information, employee creativity, and strategic market assessment. Product development teams should evaluate customer suggestions according to customer value, technical feasibility, expected cost, strategic

relevance, and potential competitive differentiation. Digital platforms can further support this process by allowing firms to collect customer responses more rapidly and evaluate reactions to early product concepts. However, management should establish clear criteria for determining which information should influence development decisions. Combining customer insights with organisational expertise can prevent excessive dependence on current customer preferences while maintaining strong market relevance. This balanced approach can support products that address existing customer requirements while simultaneously creating new value and opportunities for market differentiation.

5.4 Developing an Integrated Organisational Innovation Capability

Organisations should strengthen innovation capability by improving collaboration and knowledge integration across the different functional areas involved in NPD. Successful product development requires contributions from marketing, technical functions, operations, finance, sales, and senior management because each area provides different knowledge required for effective development decisions. Saunila (2020) demonstrates that innovation capability within SMEs is multidimensional and depends on several organisational factors rather than a single resource or activity. Firms should therefore establish cross functional development teams that allow relevant departments to participate from the early stages of NPD. Marketing employees can contribute customer and competitor information, technical specialists can evaluate product feasibility, operations personnel can assess production requirements, and finance employees can examine development costs and expected financial returns. Early integration can reduce the possibility of discovering major technical or commercial problems after substantial resources have already been committed. Common objectives and shared project information should also be established to reduce conflicts between functional areas. Stronger integration can consequently improve decision quality and enable organisations to combine specialised knowledge into more commercially relevant product innovations.

Innovation capability should also be developed continuously because organisations require knowledge and skills that extend beyond the requirements of individual development projects. Saunila (2020) highlights the importance of viewing innovation capability as a broad organisational construct that supports innovation activities and performance. Firms should invest in employee learning, leadership support, knowledge sharing, and organisational practices that encourage experimentation and improvement. Iqbal and Suzianti (2021) also identify collaboration and innovation sources as important considerations in NPD process design. Organisations that lack specialised knowledge can therefore establish appropriate collaboration with suppliers, customers, research institutions, universities, or other external partners. External collaboration can provide access to knowledge and technologies that may be difficult or expensive to develop internally. However, firms should identify specific capability gaps before entering such arrangements to ensure that external knowledge contributes directly to product development objectives. Internal learning mechanisms should also be established so that knowledge obtained through collaboration remains within the organisation and can support future projects. Combining internal capability development with carefully selected external knowledge can create a stronger innovation system capable of supporting continuous and more effective NPD.

5.5 Converting New Product Innovation into Sustainable Competitive Value

Organisations should ensure that every major NPD initiative has a clear connection with business strategy and customer value creation. Developing a technologically innovative product does not automatically generate competitive advantage if customers do not recognise its value or if the organisation lacks an appropriate method for commercialising it. Ferreras-Méndez et al. (2021) demonstrate that business model innovation plays an important role in translating entrepreneurial orientation into stronger NPD performance among SMEs. Latifi et al. (2021) similarly find that business model innovation can influence firm performance through organisational capabilities and other performance mechanisms. These findings indicate that product development decisions should consider how the product will create value, how customers will access it, and how the organisation will generate appropriate returns. Commercial planning should therefore begin during product development rather than after technical development has been completed. Marketing strategy, pricing, distribution, sales requirements, and customer support should be considered together with technical product characteristics. Integrating these commercial considerations early can help organisations identify whether an innovative product possesses realistic market potential before substantial resources are committed to full development and commercialisation.

Organisations should finally establish clear performance measures to determine whether NPD contributes to sustainable competitive business performance. Evaluation should extend beyond the number of products launched because product quantity provides limited information concerning customer value or commercial success. Ferreras-Méndez et al. (2021) demonstrate that NPD performance is connected with broader organisational and strategic capabilities, while Latifi et al. (2021) show that organisational capabilities represent an important mechanism connecting innovation with firm performance. Firms should therefore evaluate development cost, development time, product quality, customer acceptance, sales growth, profitability, market share, customer satisfaction, and competitive differentiation. Performance should be reviewed after commercialisation so that management can compare actual outcomes with the objectives established during project selection. Unsuccessful outcomes should also be examined systematically rather than treated only as failures. Management can determine whether problems resulted from weak customer understanding, inappropriate product design, poor market timing, inadequate commercialisation, or ineffective resource allocation. Knowledge obtained from these evaluations should then be incorporated into subsequent development projects. Through systematic measurement and continuous learning, organisations can transform individual NPD projects into an organisational capability that consistently supports customer value, business growth, and sustainable competitive performance.

6. CONCLUSION

New product development represents an important strategic capability for organisations seeking to strengthen competitive business performance. As demonstrated throughout this article, successful NPD extends beyond the creation of innovative products and requires the effective integration of strategic planning, market knowledge, organisational capabilities, technological resources, and commercial considerations. The literature indicates that firms need structured development processes while maintaining sufficient flexibility to respond to changing customer expectations, technological developments, and competitive conditions. Customer and market knowledge are equally important because innovative products create business value only when they address meaningful market needs and provide clear advantages to customers. At the same time, organisational resources must be supported by innovation capability, knowledge sharing, and effective cross functional collaboration. These interconnected elements demonstrate that NPD should be managed as an organisation wide strategic activity rather than as an isolated responsibility of a particular department or development team.

The critical issues examined in this article also demonstrate that achieving NPD success remains challenging. Organisations must manage development uncertainty, resource limitations, changing customer requirements, technological complexity, and coordination across different functional areas. Furthermore, introducing an innovative product does not automatically result in competitive advantage. Commercial success depends on the organisation's ability to convert innovation into customer value, market acceptance, profitability, and meaningful differentiation. The discussion therefore emphasises the importance of balancing strategic control with development flexibility, strengthening digital capabilities, transforming customer knowledge into market relevant innovation, and building stronger organisational capabilities. These factors need to operate collectively because weaknesses in one area can reduce the effectiveness of the overall NPD process. More importantly, competitive performance should be evaluated through broader outcomes such as customer acceptance, product quality, profitability, market growth, development efficiency, and competitive differentiation rather than simply through the number of new products introduced.

Moving forward, organisations should establish adaptive NPD processes, strengthen employee and organisational digital capabilities, systematically integrate customer insights, encourage cross functional collaboration, and connect product innovation directly with business strategy. The strategic suggestions presented in this article emphasise that commercial planning and performance evaluation should be integrated throughout the development process rather than considered only after a product has been completed. Continuous evaluation is also necessary to identify weaknesses in product design, customer understanding, market timing, commercialisation, and resource allocation. Knowledge gained from both successful and unsuccessful projects should subsequently support better decisions in future development activities. Ultimately, NPD can become a catalyst for competitive business performance when organisations develop the capability to repeatedly transform ideas, knowledge, technology, and market opportunities into products that create sustainable customer and business value. This strategic perspective allows NPD to contribute not only to individual product success but also to long term organisational learning, innovation capability, business growth, and competitive sustainability.

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8. CONFLICT OF INTEREST

The authors declare that there are no financial, professional, institutional, or personal conflicts of interest that could have influenced the preparation, analysis, interpretation, or publication of this article. The study was developed independently, and all arguments, interpretations, and conclusions were formulated in accordance with established principles of academic integrity, scholarly objectivity, and responsible research practice.

9. AUTHOR CONTRIBUTION STATEMENT

Fadhilah Mohd Zahari contributed to the conceptualisation of the study, development of the article framework, literature review, analysis of new product development processes, and preparation of the original manuscript. Mohamed Suhaimi Yusof contributed to the synthesis and interpretation of scholarly evidence, critical analysis of innovation capability and competitive business performance, development of the strategic discussion and recommendations, and critical revision and refinement of the manuscript.

Both authors reviewed and approved the final version of the manuscript for publication.

10. ETHICS STATEMENT

This study is conceptual in nature and was developed through the critical review, analysis, and synthesis of previously published academic literature and secondary scholarly sources. The study did not involve human participants, personal or confidential data, surveys, interviews, experimental procedures, or animal subjects. Therefore, institutional ethical approval and informed consent were not required. Throughout the preparation of the manuscript, the authors adhered to established principles of academic integrity, responsible authorship, appropriate attribution of scholarly sources, and ethical publication practices.

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