

Defining Innovation: A Comprehensive Analysis of Types, Levels, and Strategic Interactions

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Abstract:

Background: This article explores the multifaceted concept of innovation, examining its various forms—product, process, market, organizational, technological, and paradigm - and their interactions across different levels, including individual, organizational, sectoral, national, and international. The study highlights the critical role of innovation as a driver of economic and social development, particularly in the digital age where technological change is rapid and pervasive.

Materials and Methods: This literature review systematically analyzes the synergies between different types and levels of innovation, exploring how these combinations can amplify organizational and market impacts, ultimately fostering a sustainable competitive advantage.

Results: The findings highlight that innovation rarely occurs in isolation; rather, it emerges from complex interrelations that significantly enhance its overall effectiveness. These interactions are pivotal in driving successful innovation outcomes.

Conclusion: This review contributes to a deeper understanding of innovation by synthesizing insights from various studies, offering valuable implications for both academic research and business practices.

Keywords: Innovation; Competitive Advantage; Technology; Organizational Strategy; Disruptive Innovation.

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I. Introduction

Innovation has become inseparably linked to both economic growth and social advancement, establishing itself as a cornerstone of development, particularly in an era characterized by rapid technological transformation (Schumpeter, 2021). In the contemporary digital landscape, where the pace of change is unprecedented, organizations that excel in innovation are not merely surviving but thriving in highly competitive environments (Bessant & Tidd, 2019). Innovation is now recognized as a critical determinant of success, serving as a key driver of organizational resilience and adaptability.

Given this context, innovation has emerged as a central theme in the corporate world, increasingly viewed as an essential pillar for the survival and expansion of businesses in the digital age. Large corporations are progressively adopting agile models to foster innovation in products and processes, while startups are gaining momentum by delivering disruptive solutions that challenge established market paradigms (Bessant & Tidd, 2019). Despite its pervasive presence in corporate strategies and its frequent discussion across organizational forums, there remains a significant challenge in fully understanding and effectively aligning the concept of innovation within organizations (H. Chesbrough, 2007; H. W. Chesbrough, 2006).

This article seeks to delve into the multifaceted nature of innovation by investigating various forms—product, process, market, organizational, technological, and paradigm—and examining how these forms manifest and interact across different levels, including individual, organizational, sectoral, national, and international. The research aims to uncover the synergies and impacts that these innovations generate within organizational structures and markets, thereby exploring the opportunities and challenges that arise in the pursuit of sustainable competitive advantage in a rapidly evolving global environment. Through this exploration, the article aspires to contribute to both theoretical and practical understandings of innovation, offering insights that can be applied in academic discourse as well as in real-world business practices (Bessant & Tidd, 2019).

The method employed in this research is a narrative literature review, characterized by the analysis and synthesis of a broad range of academic works and relevant sources related to the topic. This approach allows for a comprehensive exploration of the various perspectives and concepts associated with innovation, without the constraints of rigid selection criteria typically used in systematic reviews. The primary objective of the narrative

review is to integrate and contextualize existing knowledge, identifying patterns, gaps, and trends in the research on different types and levels of innovation, and how their interactions contribute to organizational and market impact. This methodology is particularly valuable for generating a holistic and critical understanding of the subject, providing a robust foundation for future theoretical and applied investigations.

II. Concepts and levels of innovation

Innovation is a multifaceted concept that has been defined in various ways. (Schumpeter, 2021) introduced innovation as a driver of economic development, associating it with "creative destruction" in the early 1900s. Innovation is widely recognized as a fundamental engine for economic and social development, characterized by introducing new products, processes, business models, and organizational approaches that create value in different contexts (Calik, 2024). Since its initial conception, innovation has been associated with transforming ideas into reality, resulting in technological advancements, improvements in production processes, and new market opportunities (OECD, 2015).

Historically, the concept of innovation has evolved significantly. Initially, innovation was primarily viewed as a technological and industrial process, with a focus on the creation of new products and machinery during the Industrial Revolution. Over time, this perspective expanded to include not only technological innovations but also innovations in processes, marketing, and organizational models as economies and societies became more complex and interconnected (Calik, 2024; OECD, 2015).

Inventions and innovations are intrinsically linked to the fields of science and technology (S&T). Inventions typically refer to the creation of entirely new entities—be they products, technologies, or processes. Innovations, on the other hand, are often characterized as incremental enhancements to existing entities, such as products, processes, or services, or as the integration of established and novel S&T to develop new outputs. One perspective distinguishes invention as the initial conceptualization of a new product or process aimed at acquiring new knowledge, while innovation is focused on addressing specific challenges or capitalizing on the benefits of S&T, including commercial gains. From this viewpoint, innovation involves the practical implementation of S&T, whether through societal impact, commercialization, market entry, or monetization (ESCAP, 2015).

However, innovations are generally perceived as involving a lesser degree of novelty compared to inventions, which are often seen as complete breakthroughs—radical innovations versus incremental ones. Inventions are more likely to be protected by intellectual property rights (IPR), such as patents, while innovations occur more frequently, enabling businesses to grow and maintain a competitive edge. Even minor improvements or modifications in design, manufacturing methods, processes, technologies, management practices, organization, or marketing can constitute significant innovations that help successful businesses remain competitive (ESCAP, 2015).

While inventions are typically the outcome of research and scientific inquiry, leading to new technologies or products, innovations can emerge from creative thinking or "thinking outside the box." However, with the rapid advancement and convergence of S&T, the distinction between invention and innovation has become increasingly blurred. The current emphasis is on innovation, which is reflected in the common use of the term Science, Technology, and Innovation (STI). Essentially, innovation cannot occur without pre-existing technology (or a process/product that embodies that technology), just as technological progress is dependent on scientific discoveries and research. In this context, technology serves as the central link between science and innovation, driving development forward (ESCAP, 2015).

Levels of Innovation

Innovation occurs at various levels within societies and organizations, each contributing uniquely to the broader landscape of innovation. These levels—individual, organizational, sectoral, national, and international—represent different scopes of influence and interaction, each playing a critical role in driving economic and social progress. Understanding the dynamics of innovation across these levels is crucial for fostering environments that nurture creativity, competitiveness, and sustainable development.

Individual-Level Innovation

At the individual level, innovation is often driven by factors such as creativity and the ability of individuals to generate new ideas and solutions within their specific competencies (Amabile, 1996). Individual innovation can be catalyzed by education, life experiences, and exposure to diverse cultures and disciplines, which promote diverse thinking and the generation of innovative ideas (Calik, 2024). Research indicates that environments that encourage experimentation and continuous learning tend to produce higher levels of innovation (Bessant & Tidd, 2019). This level of innovation is crucial, as individual creativity often serves as the foundation for broader organizational and sectoral advancements.

Organizational-Level Innovation

Organizational-level innovation involves the application of new ideas within an organization to improve its products, services, or internal processes. Organizations that adopt a culture of innovation and encourage experimentation tend to be more competitive and adaptable to market changes (Calik, 2024). Furthermore, organizational structure, available resources, and the work environment are critical determinants of successful innovation within companies (OECD, 2015; Smith, 2010). Companies that align their organizational structure with their innovation objectives are generally more effective in introducing new products and processes to the market (Bessant & Tidd, 2019). This level of innovation is vital for organizational growth and sustainability in an increasingly competitive global market.

Sectoral-Level Innovation

At the sectoral level, innovation can vary significantly depending on the specific characteristics of each sector. For instance, high-tech sectors, such as the information technology industry, are often seen as more innovative, while more traditional sectors may face greater challenges in incorporating innovations (Calik, 2024). However, regardless of the sector, innovation is essential for maintaining relevance and competitiveness in a globalized market. Sectoral innovation plays a key role in driving industry-wide advancements and setting new standards for efficiency, quality, and customer satisfaction (Granstrand & Holgersson, 2020).

National and International-Level Innovation

At the national level, innovation is influenced by government policies, research and development infrastructure, and a country or region's ability to create an environment conducive to the development of new technologies and processes. Countries that invest in education, science, and technology tend to be more innovative and lead in terms of economic and social advancements (OECD, 2015). International collaboration also plays a significant role, enabling the sharing of knowledge and technologies that drive global innovation (Bessant & Tidd, 2019). This level of innovation is critical for addressing global challenges and fostering sustainable development across borders (Granstrand & Holgersson, 2020; Kochetkov, 2023).

III. Types of Innovation

Innovation, in one of its most classic definitions, is viewed as a process characterized by the discontinuity of what is established and conceived, whether through the introduction of a new good, the enhancement of an existing good's quality, the implementation of a new production method, the opening of a new market, the acquisition of a new source of raw materials, or even the creation of a new organizational form (Schumpeter, 2021).

Innovation takes on various forms, including product, process, position, and paradigm innovation (Bessant & Tidd, 2019). According to these authors, product innovation represents changes in the products and services that a company offers. Process innovation involves changes in the ways that products or services are created, offered, or presented to the consumer. Position innovation refers to changes in the context in which products or services are introduced, which may include alterations in the structure or even the target audience. Finally, paradigm innovation is rooted in changes to the fundamental mental models that guide what a company does.

This implies that innovation does not necessarily require the invention of something entirely new; rather, it can involve applying an existing idea in a novel way or within a new context (Hahn et al., 2022). Thus, innovations can range from merely incremental—improving the same product—to radical, which involves doing something completely different (Bessant & Tidd, 2019).

The following sections will explore the primary categories of innovation, providing definitions, examples, and insights into their impact on the market and organizational performance.

Product Innovation

Definition and Examples

Product innovation is a critical concept for maintaining the competitiveness of companies in the global market. Product innovation involves the creation of new products that offer superior performance, reduced costs, modern design, and varied dimensions. This process is essential for companies to remain relevant and competitive. For example, the introduction of smartphones revolutionized the mobile phone market, transforming communication devices into multifunctional platforms that integrate cameras, GPS, internet, and various applications, significantly impacting consumers' lives and the global technology market (Calik, 2024). Product innovation is the ability of a company to develop new products or technologies in response to customer needs, or even to anticipate these needs and develop products and technologies before they become apparent. This concept is crucial for understanding how companies can adapt and thrive in a dynamic and competitive

environment. A recent example includes sustainable products that utilize recyclable materials and green technologies (Bessant & Tidd, 2019).

Impact on the Market and Organization

Product innovation has significant impacts on the market. Primarily, it can create new product categories and generate demand where previously none existed. Innovative products can establish new market standards and redefine consumer expectations. Additionally, products with modern design and advanced technology can differentiate a company from its competitors, increasing its market share (Bessant & Tidd, 2019).

This type of innovation often leads to changes in organizational structures and processes that enhance a company's ability to innovate (Nonaka & Takeuchi, 1995). Examples include the adoption of horizontal structures and the use of multidisciplinary teams (Bessant & Tidd, 2019).

In the marketplace, product innovation can create new categories, meet latent demands, and alter competitive dynamics, forcing other companies to adapt or introduce their own innovations to remain relevant. Within organizations, product innovation can result in competitive advantages, increased market share, and revenue growth. It may also necessitate internal restructuring and new investments in research and development. For instance, companies that continuously innovate their products, such as Apple with its iPhone updates, not only maintain customer loyalty but also attract new consumers, expanding their market and strengthening their competitive position (Calik, 2024; OECD, 2015).

Process Innovation

Definition and Examples

Process innovation refers to the implementation of new or significantly improved production or delivery methods. This type of innovation can involve changes in techniques, equipment, or software used to produce goods and services. The primary goal is to increase efficiency, reduce costs, or improve the quality of products or services offered (OECD, 2015; Smith, 2010).

Tim Cook, in an interview with Bloomberg, emphasized that "Some people see innovation as change, but [at Apple] we have never seen it that way. [For us] it's about making things better." A classic example is the mass production implemented by Henry Ford in the early 20th century, which revolutionized the automotive industry by significantly reducing the costs and production time of automobiles.

Impact on Organizational Efficiency and Effectiveness

Process innovation can have a profound impact on the efficiency and effectiveness of organizations. By optimizing production or delivery methods, companies can reduce operational costs, minimize errors and waste, and increase the speed of response to market demands. Additionally, by improving process effectiveness, companies can offer higher-quality products and respond more agilely to customer needs, leading to greater customer satisfaction and, consequently, increased loyalty and revenue. For example, the adoption of automation technologies on assembly lines has enabled many manufacturing industries not only to reduce costs but also to increase the consistency and quality of products, strengthening organizational competitiveness in the global market (Bessant & Tidd, 2019; Calik, 2024).

Market Innovation

Definition and Examples

Market innovation refers to the implementation of new methods for positioning products or services in a market, which may include targeting new audiences, repositioning a brand, or introducing existing products into new geographic or demographic markets. This type of innovation seeks to meet specific customer needs that have not yet been fully explored or perceived by companies (Bessant & Tidd, 2019; OECD, 2015; Smith, 2010).

An example of market innovation is Starbucks' expansion into international markets, where the company adapted its original premium coffee concept to the local tastes of different regions while maintaining the essence of its global brand. These innovations often create market opportunities and reshape how products are perceived by consumers. Another example is the launch of "low-cost" products in emerging markets, where companies adjust their products to meet the needs of price-sensitive consumers without compromising the essential quality of the product (Calik, 2024).

Strategies for Market Penetration and Expansion

Market penetration and expansion strategies generally involve the use of market innovations to increase market share in regions or segments where the company's presence is limited or non-existent. A common approach is market penetration, where the company seeks to increase its sales volume through competitive pricing, aggressive promotions, or targeted marketing campaigns. Another effective strategy is diversification, which

may include adapting or creating products to meet local preferences in new geographic or cultural markets (Calik, 2024).

Apple's expansion strategy with its iPhones in emerging markets, adapting its offerings with more affordable models, illustrates how market innovation can be used to broaden the customer base and capture new market segments. Additionally, the use of strategic partnerships with local companies can facilitate entry into new markets, providing the necessary local knowledge and resources for successful expansion (Bessant & Tidd, 2019; Calik, 2024).

Organizational Innovation

Definition and Examples

Organizational innovation refers to the implementation of new organizational methods in business practices, workplace organization, or a company's external relations. Process innovation can profoundly transform organizational efficiency and effectiveness. By optimizing production and delivery methods, companies can reduce operational costs, minimize errors and waste, and increase the speed of response to market demands. The introduction of automation technologies on assembly lines, for example, not only reduces costs but also improves product consistency and quality (Bessant & Tidd, 2019).

Changes in Organizational Structure and Culture

Organizational innovation often requires significant changes in the company's structure and culture. Structurally, this may include adopting new forms of organization, such as creating multidisciplinary teams or implementing more flexible management systems that encourage collaboration and idea exchange between different departments (Calik, 2024). These structural changes often aim to reduce bureaucracy, accelerate decision-making, and improve the organization's response to changes in the external environment.

In terms of organizational culture, innovation may require a transformation of the company's prevailing values and practices. This may include fostering a culture of innovation where experimentation and risk are encouraged, and continuous learning is valued (Calik, 2024). For example, 3M is known for its culture of innovation, which encourages employees to dedicate part of their work time to developing creative and innovative projects, resulting in a series of innovative products over the years.

Technological Innovation

Definition and Examples

Technological innovation can be defined as the application of technological knowledge that results in new products, processes, or services, significantly improving their attributes. Technological innovation is often the most visible and debated form of innovation, being responsible for driving the development of new technologies with the potential to transform entire sectors (Christensen, 1997; ESCAP, 2015).

Emerging technologies such as artificial intelligence, blockchain, and nanotechnology exemplify this transformative dynamic, offering possibilities that can redefine the limits of what is possible in various industries. Technological innovation not only generates new products and services but also revolutionizes processes and interactions between consumers and markets (Bessant & Tidd, 2019; ESCAP, 2015).

Concrete examples of technological innovation include advances in renewable energy technologies, such as the development of high-efficiency solar panels that are changing the global energy matrix, and the creation of electronic devices such as smartphones and tablets that have revolutionized communication and access to information on a global scale. Additionally, progress in artificial intelligence (AI) and machine learning illustrates how these innovations are being applied across multiple sectors, from healthcare with more accurate diagnostics to transportation with autonomous vehicles, and education with personalized learning platforms (Calik, 2024).

Technological Convergence and Its Impact

Technological convergence describes the process by which previously distinct technologies begin to merge and integrate, resulting in innovative solutions and the creation of new market opportunities. This phenomenon is particularly evidenced by the simultaneous advancement in areas such as computing, telecommunications, and biotechnology, whose interactions are generating more robust and multifaceted innovations. A prime example of this convergence is the Internet of Things (IoT), which emerges from the union between communication and information technology, allowing intelligent device connectivity and efficient data exchange, profoundly transforming sectors such as manufacturing and healthcare (Calik, 2024).

The impact of technological convergence is extensive and multifaceted, driving global competitiveness and radically altering the way companies operate. Moreover, convergence has the power to provoke significant social changes as new technologies modify consumption patterns, reshape the world of work, and influence social interactions. Furthermore, technological convergence can accelerate innovation, enabling companies to

combine different technologies to create disruptive products and services that meet the emerging needs of consumers and global markets (Calik, 2024).

Paradigm Innovation

Definition and Examples

Paradigm innovation refers to fundamental changes in the underlying beliefs, values, and models that guide how industries and markets operate. This type of innovation is not about incremental improvements but rather a radical transformation that challenges and replaces traditional approaches, modifying the norms and practices that redefine entire sectors. A clear example of this change is the transition from an economy centered on physical products to a digital economy driven by the Internet and information technologies. This transformation drastically altered how businesses are conducted and gave rise to new industries such as e-commerce and social networks. Another significant example is the rise of the sharing economy, illustrated by companies like Uber and Airbnb, which revolutionized the transportation and hospitality sectors by turning underutilized resources into service opportunities (Bessant & Tidd, 2019).

Radical Transformations in Industries and Markets

Paradigm innovations have the power to cause profound transformations in industries and markets by introducing new ways of thinking and operating, making old models obsolete. These changes can completely reshape the competitive landscape, creating new market leaders and eliminating companies that fail to adapt. The widespread adoption of renewable energies, for example, represents a paradigm innovation in the energy sector, challenging the hegemony of fossil fuels and driving a transition to more sustainable energy sources. This change has profound implications for geopolitics, the global economy, and the environment (Bessant & Tidd, 2019).

Building on the concept of paradigm innovation, which often catalyzes the emergence of new markets and redefines industry standards, the literature further elaborates on various frameworks to categorize and understand innovation more comprehensively. One such influential framework is **Doblin's 10 Types of Innovation**, which offers a structured approach to identifying and implementing innovation across different dimensions of a business.

The 10 Types of Innovation

This model categorizes innovation into three broad areas: Configuration, Offering, and Experience. Each of these categories encompasses specific subtypes, providing a detailed map for companies to strategically focus their innovative efforts (Keeley et al., 2022).

Configuration: Profit Model, Network, Structure, Process

- **Profit Model:** Refers to innovations in how a company makes money. An example is the introduction of subscription-based models instead of one-time sales, like Netflix's business model, which transformed the entertainment industry by offering unlimited content access for a monthly fee (Keeley et al., 2022).
- **Network:** Innovation that involves creating connections with others to generate value. For instance, Coca-Cola expanded its distribution network by partnering with local suppliers in emerging markets, facilitating its entry into new regions (Keeley et al., 2022).
- **Structure:** Involves changes in a company's organization to maximize its assets and resources. An example is Johnson & Johnson's decentralized structure, which allows its subsidiaries to operate independently, quickly adapting to market changes (Keeley et al., 2022).
- **Process:** Refers to innovation in how a company's operations are carried out. The adoption of agile methodologies in software companies, such as Microsoft, to develop products faster and more adaptable exemplifies this type of innovation (Keeley et al., 2022).

Offering: Product Performance, Product System

- **Product Performance:** Focuses on improving existing products or creating new ones. Apple is a prominent example, with constant innovations in the performance of its products, such as the iPhone, which frequently introduces new technological features that redefine market expectations (Keeley et al., 2022).
- **Product System:** Innovation that creates synergies between products, forming a cohesive system. An example is the creation of Amazon's ecosystem, where products like Kindle, Echo, and the Prime service work together to offer an integrated user experience (Keeley et al., 2022).

Experience: Service, Channel, Brand, Customer Engagement

- **Service:** Refers to innovation in how services are offered or consumed. An example is Zappos, which redefined customer service in the online retail sector by offering flexible return policies and personalized service (Keeley et al., 2022).

- **Channel:** Innovation in the ways products and services are delivered to customers. Warby Parker, for instance, innovated by selling prescription glasses directly to consumers via the internet, cutting out intermediaries and reducing costs for the end customer (Keeley et al., 2022).
- **Brand:** Focuses on innovations in brand perception and identity. Nike is an example, with marketing campaigns that not only sell products but also promote a lifestyle, as seen in the iconic "Just Do It" campaign (Keeley et al., 2022).
- **Customer Engagement:** Refers to how companies interact and connect with their customers. Lego, through its Lego Ideas platform, allows customers to suggest and vote on new products, creating a level of engagement and loyalty that goes beyond simple purchases (Keeley et al., 2022).

Apple exemplifies technological innovation by combining product performance improvements with a cohesive product system (iPhone, iPad, MacBook), creating a unique user experience. In the retail sector, Amazon dominates e-commerce through product system and channel innovations. PayPal revolutionized the financial services industry by innovating in processes and networks, enabling fast and secure online payments, which transformed the digital payments market. In healthcare, Johnson & Johnson employs a decentralized structure, allowing it to quickly adapt its global operations to local regulations and market changes.

IV. Incremental Innovation and Disruptive Innovation

Over time, various theories and models of innovation have been developed to explain the dynamics of this phenomenon. For instance, the theory of disruptive innovation explores how new technologies can surpass established ones, causing significant disruptions in existing markets. This concept is fundamental to understanding how emerging companies can challenge established market leaders, creating opportunities and transforming entire sectors. On the other hand, incremental innovation refers to gradual improvements that enhance existing products or processes without fundamentally altering the market. Both forms of innovation—incremental and disruptive—play essential roles in the evolution of industries and the promotion of economic progress (Bessant & Tidd, 2019).

Incremental Innovation

Incremental innovation refers to gradual and continuous improvements in existing products, processes, or services, rather than radical or disruptive changes. This type of innovation aims to refine and optimize already established elements, enhancing their performance, efficiency, or cost-effectiveness. A classic example of incremental innovation can be observed in the automotive industry, where manufacturers implement small improvements year after year, such as increasing fuel efficiency, improving safety features, or integrating new technological functionalities into existing car models. Another example is the continuous enhancement of software versions, as seen with operating systems like Windows or macOS, where each new version brings updates that improve performance and user experience without drastically altering the product's structure (Kennedy, 2020).

Incremental innovation is essential for the long-term sustainability of companies because it allows them to remain competitive by making continuous improvements that meet the evolving needs of consumers. These improvements can be in terms of quality, efficiency, design, or functionality of a product or service. For example, in the electronics sector, companies like Samsung release new smartphone models that incorporate incremental improvements such as better cameras, longer battery life, and faster processors, maintaining the brand's relevance in a competitive market. Although incremental innovations are less visible than disruptive innovations, they play a crucial role in the evolution of products and services, enabling companies to respond effectively and sustainably to market changes. This gradual approach can also lay the groundwork for more radical innovations in the future by building a solid foundation of continuous improvements on which new advances can be developed (Kennedy, 2020)..

Disruptive Innovation

Disruptive innovation refers to the introduction of products, services, or business models that drastically change how a market operates, often replacing traditional options and creating new market categories. Unlike incremental innovation, which focuses on gradual improvements, disruptive innovation introduces something entirely new that transforms entire industries and consumer behavior. A classic example of disruptive innovation is Netflix, which revolutionized the entertainment market with video-on-demand streaming, surpassing traditional video rental stores. Another example is the emergence of Airbnb, which transformed the hospitality sector by enabling ordinary people to rent out their properties directly to travelers, challenging the traditional hotel and lodging model (Christensen, 1997; Kennedy, 2020)

Disruptive innovation causes profound disruptions in markets by offering solutions that address previously unmet needs or by creating new consumption habits. These innovations often lead to the creation of new market niches, while older technologies and business models become obsolete (Christensen, 1997). For instance, Uber transformed the transportation sector by connecting passengers directly with drivers through an app, challenging traditional taxi services and creating a market within the sharing economy. Similarly, Amazon revolutionized retail with its e-commerce platform, redefining global commerce and establishing new standards of convenience and consumer access, while also creating niches within e-commerce. Disruptive innovations have the power to drastically alter competitiveness across different industries, challenging established companies and opening doors for new entrepreneurs who capitalize on the changes brought by these innovations. Initially, these innovations may cater to a small market segment, but over time, their advantages become so evident that they eventually dominate the market. This capacity to transform markets and create new niches makes disruptive innovation a transformative force in the global economic landscape.

V. Combining Different Types and Levels of Innovation: Analysis of Interrelations and Synergies Among Different Categories

Innovation, in its essence, is not an isolated phenomenon; it often occurs as the result of a complex combination of different types and levels of innovation (Bessant & Tidd, 2019; Keeley et al., 2022). The interactions between various types of innovation can amplify the benefits of each. For instance, process innovation, which involves improving the efficiency and effectiveness of organizational operations, often aligns with technological innovation, where new technologies are implemented to optimize these processes. A classic example is the adoption of artificial intelligence and automation in factories, which not only enhances production processes (process innovation) but also drives product innovation by enabling the mass production of customized products.

Moreover, market innovation, which involves penetrating and expanding into new markets, can be intensified by disruptive innovations that introduce new business models and create previously nonexistent market niches (Christensen, 1997). A notable example is Tesla, which not only introduced innovative electric vehicles (product innovation) but also created a new distribution model by selling its cars directly to consumers, eliminating the need for traditional dealerships. This not only opened new markets but also redefined the car-buying experience.

At the organizational level, combining organizational innovations with technological innovations can lead to significant changes in a company's structure and culture, making it more agile and adaptable to market changes. Organizational innovations, such as adopting more horizontal structures and promoting a culture of innovation, create an environment conducive to other forms of innovation, fostering a continuous cycle of innovation.

The interrelations between levels of innovation are also evident. Innovations at the individual or organizational level can scale to the sectoral or even national level, influencing public policies and regulations. For example, technological innovations developed by large technology companies in the United States not only impact the local market but also have global repercussions, altering competitive standards and setting new market paradigms.

By understanding and exploring the synergies between different types and levels of innovation, organizations can maximize the impact of their innovation strategies. This integrated approach allows companies not only to respond to market changes but also to lead them, creating sustainable value over the long term.

VI. Conclusion

This study provided a comprehensive analysis of various innovation typologies, including product, process, market, organizational, technological, incremental, and disruptive innovation, and their interrelations across different organizational and sectoral levels. The wide range of innovation typologies discussed offers a rich framework, both theoretically and practically, for elucidating the different dimensions that comprise the phenomenon of innovation.

Theoretically, these typologies help to unravel the complexities of innovation, allowing for a more detailed understanding of how new products, services, or processes are developed and introduced to the market. Practically, they guide organizational strategies, helping companies identify which types of innovation are most suitable for their specific goals and contexts. The research highlighted that, although each typology provides value on its own, innovation rarely occurs in isolation. Instead, it is the combination of multiple types and levels of innovation that amplifies their effects on organizations and markets.

Another significant finding was the importance of synergies between different types of innovation. For instance, integrating technological innovations with organizational innovations can lead to profound changes in a company's structure and culture, making it more agile and adaptable to market dynamics. Moreover, the interrelations between innovation levels—from individual to national—illustrate how localized innovations can scale up and broadly influence the competitive and regulatory environment.

However, the study also revealed that despite their utility, innovation typologies often fail to capture the inherent complexity and interdependence of the innovation process in the real world. This limitation suggests the need for more integrative and holistic approaches to innovation management.

Practically, this study offers organizations and professionals a deep understanding of how different innovation typologies can be combined to maximize organizational impact. By emphasizing the importance of understanding and exploring the synergies between different types of innovation, the study provides valuable insights into how companies can adapt their innovation strategies to be more effective in competitive and ever-changing environments. Ultimately, by adopting an integrated approach, organizations will not only respond better to market changes but also lead these changes, creating sustainable and long-lasting value.

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