Triggers of Changes in Business Processes and Applications: A Systematic Review

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Abstract

Organizations must constantly adapt due to the rapid rate of technological development, market conditions, and customer expectations. The multidimensional world of catalysts that drive changes in corporate processes and applications is explored in this systematic review. Every business must adopt the changes if it wants to compete in the market and outlast its rivals. A wide range of factors, including internal and external forces, can cause applications and business processes to change. These changes are frequently necessary to stay current with the shifting demands of the market, technology advancements, organizational requirements, competitive pressures, legal compliance, environmental and sustainability programs, market trends, and consumer insights. Taking this into account, this chapter attempts to concentrate on the causes of changes in business processes and applications by analyzing the perspective.

Keywords: Disruption, Business, Cost Optimization, Process, Technology.

Introduction

Emerging technologies or changing stakeholder needs are just a few of the factors that organizations must deal with in the complex Business environment. As a result, they must constantly modify their business processes to be competitive. One of the most difficult responsibilities is having effective change management skills. Risk and cost management are two areas in which changing engineering is crucial. It is advised to save change triggers in a database to find trends or categories of change triggers in order to handle changes properly. Business process management (BPM) entails the analysis, categorization, modification, and monitoring of business processes in order to make sure they function properly and have the potential to be enhanced over time. Reengineering business processes is a strategy that is frequently used nowadays to create new processes or modify old ones. The business process is modified as necessary after the business model has been examined. Several critical triggers prompt businesses to initiate changes in their processes, and these triggers often revolve around a complex interplay of internal and external factors. In this chapter, we will examine a number of catalysts for business process change, including technological advancements, market trends, supply chain disruptions, environmental and sustainability initiatives, cost optimization, the role of cost reduction initiatives in process modifications, the use of technology to streamline operations and cut costs, mergers and acquisitions, change management strategies, and leveraging data analytics for insights into process performance. Businesses that are proactive in recognizing and reacting to these triggers will be better positioned to sustain their competitiveness, foster innovation, and find long-term success in a market that is becoming more difficult and dynamic (1).

Technology Advancements

Automation of economic processes is becoming more popular as a technique of promoting economic growth as a result of new digital technologies, including AI, machine learning, robots, big data, and cloud computing.

Applications that use AI are gradually taking over duties that have historically been done by experts like lawyers, accountants, teachers, and other professionals in related fields (1). Concerns about social inclusion are also raised by these changes. Digital intensity is the measure of how deeply technological advancements have permeated economic operations and activities. Emerging digital technologies are well known to offer the potential to increase workplace productivity, effectiveness, and safety. The Digital Intensity Index (DII) measures how widely digital technologies are used in the economy. It also represents how economically integrated it is throughout several industries, including manufacturing, financial services, healthcare, and retail. Due to its simplicity compared to other technologies, cloud computing is the most often used option (2), who conducted an analysis of how digital technologies are employed within enterprises. Due to the fact that it generates a few hundred thousand new small and medium-sized businesses, cloud computing greatly affects economic growth. Cloud computing infrastructure presents opportunities and challenges for small and medium-sized businesses and can promote digital innovation (3). It enables access to tools, information, and programs that are crucial to an organization's operations without needing the business to buy and maintain its IT infrastructure. As a result, businesses may concentrate more on their areas of expertise and develop a competitive edge through resource management. The development of new IT and organizational skills through digital development is required for the effective integration of cloud infrastructure into value-added activities (3).

Business Processes are significantly impacted by AI technologies since they enhance the usage of digital technology across a range of economic sectors, including manufacturing, financial services, healthcare, and retail. Automation of particular operations, increased product quality, and improved investment advice are all made possible by AI technologies (4). The most prevalent new digital technology is artificial intelligence (AI), and integrating it with other technologies has the biggest impact on how well a company performs (5). The

application of AI technology in marketing and sales has made it possible to automate and optimize a number of procedures, including customer segmentation, message and campaign tailoring, data analysis, and other procedures. As a result, marketing and sales actions are now more efficient and effective, which has improved corporate outcomes. To enhance user experience, marketers deploy language-based AI as sales tools, payment processors, and engagement managers (6). Customers can purchase groceries via mobile shopping apps in the food industry without visiting a physical store. The technology utilized in this industry can improve digital satisfaction and promote shopping efficiency, convenience, and safety (7). Additionally, these apps may improve the management of product information and the recognition of customer requirements and preferences. AI technology can be used to automate and improve manufacturing processes, including real-time monitoring of production parameters, predicting the demand for raw materials or completed goods, streamlining production schedules, and effectively managing resources. AI technology can also detect and stop operational or quality concerns before they have an impact on output (8, 9). Artificial intelligence (AI) technologies for business administration processes are made to automate and improve different business management aspects, such as data processing automation, big data analysis, financial and accounting activity automation, decision support, supply chain process improvement, human resources (HR), and others. As a result, AI technologies can reduce human error, speed up operations, improve decision-making, and reduce costs (10, 11). They can also enable automated process management through AI. Route planning, inventory management, product delivery, and vehicle fleet optimization are some examples of logistics activities that may be optimized using AI technology. Doing so will increase efficiency and productivity, improve customer service, and save costs (12). In human resource management and recruitment, AI technologies automate one or more tasks like reviewing resumes, conducting interviews, conducting pre-screening, or categorizing applicants

(13). In order to present employers with only those candidates who meet the required criteria, for example, machine learning algorithms can evaluate specific characteristics, such as candidate experience, skills, and knowledge. This reduces subjectivity and increases recruitment process efficiency. Content can be summarized or categorized using artificial intelligence (AI) tools that analyze written language, such as text mining, in order to meet marketing or artificial business intelligence criteria. As a result, they are able to process checks, receipts, invoices, and other documents with defined formats. According to a study (14), speech recognition is essential for fostering great customer experiences. Artificial intelligence (AI) is used in natural language generation technologies, or NLP (natural language processing), to produce written or spoken content that mimics human speech. They are founded on machine learning models that were developed using vast volumes of text data. They can therefore automate operations like content development, translation, transcription, and summary. A chatbot called NLP is used for data collection, supply chain management, online advertising, and customer relationship management (12). "Image recognition" or "image processing" technologies in artificial intelligence are those that use photos to identify objects or persons. To analyze and "recognize" aspects in photographs, such as objects, people, girls, and animals, they rely on machine learning and deep learning algorithms. These technologies, however, have a wide range of uses, including digital marketing, security and surveillance, and photography.

Business Processes can also be dramatically impacted by the Internet of Things (IoT), which improves data collection, storage, and analysis capabilities. The IoT can gather useful data about products, corporate processes, and customer behavior by enabling real-time data acquisition through millions of connected devices. By enhancing decision-making and automating processes, these data can boost productivity and efficiency (8). Today's global trade can benefit from information and cyber technology, giving all participating businesses and people a convenient and equal chance to transact. Due to its immutable, time-stamped, protected, and decentralized consensus characteristics, blockchain, which acts as a distributed ledger (or database) for recording transaction-related information, is thought to have the ability to advance business processes. Business process and document synchronization may be aided by blockchain technology, but it still has efficiency (transaction throughput and latency), scalability, security, and privacy problems that need technical fixes.

Smart contracts are programmable protocols that have the ability to autonomously execute, check, and update process status. (15) introduced the idea of a "smart contract," which he defined as a collection of digital promises that include the terms and agreements of the contract's participants. The architecture of a smart contract may include predetermined coding requirements relating to business process. According to (16), business process procedures carried out by smart contracts are typically specified to be triggered by a certain entity, event, or time. While a typical contract would not start the subsequent actions until the receipt of the paper contract by mail delivery, a smart contract might be automatically performed by preset conditions triggered by a specific entity, event, timing, etc. In this regard, delivery delays caused by the delivery of documents frequently occur, but smart contracts can update the status of the process and speed it up in a matter of seconds or minutes without having to worry about distance.

Market Trends

The goal of business transformation is to increase added value by discovering new, unproductive methods, procedures, and technologies. Alternative strategies to improve revenue, boost customer happiness, or lower operating expenses are discussed (17). Business model change, as defined by (17), is a process where management consciously modifies and creates new organizational systems or activities in response to environmental changes, with business model design connected to a newly developed or updated existing business model. According to (18), altering the business model is a never-ending process. Additional business model components, disruptive innovation, core

components, and business logic are all examples of activities that can be used to change business models. In addition to altering consumer behavior and preferences, environmental turbulence has also had an impact on personnel mobility and capacities, market shifts, and globalization. Businesses functioning in a dynamic and ambiguous environment will have a greater ability to deal with environmental turbulence, which will have an impact on how well they adapt to changing business models and how well they perform overall. According to (19), a dynamic business environment encourages organizations to adopt new business model concepts, strategies, and practices in order to fulfill objectives and produce meaningful results. In other words, businesses that operate in more dynamic environments experience environment turbulence, which affects business model transformation and performance (20). Companies must rely on innovation to counter the dangers posed by outdated products and technology as well as to develop new business models that can support firm success by having the capacity to foresee unforeseen business turbulence in an environment that is becoming more turbulent.

Supply Chain Disruptions

According to (21), supply chain disruption is a phenomenon where unanticipated events that occur at a particular point in the supply chain can impact a company's performance negatively. If interruptions are not promptly repaired at the source, they may spread in many directions and damage the operation of numerous entities in the extended network. As a result of disruptions that are more severe and last longer, supply chain costs do in fact significantly rise. Multiple layers of upstream supply chains cause a significant number of disruptions. For instance, while 58% of disruptions were initiated at tier 1 in 2013, 44% of disruptions were initiated at tier 1 in 2017, indicating that up to 56% of disruptions were initiated at tier 2 or higher (22). According to (23), supply chain complexity may strategically boost competitiveness. High product customization and diverse customer bases are two examples of strategically important complications for gaining an advantage over rivals. Complexity in the supply chain may also make disruptions more severe (24).

According to other research, supply networks that are complex (i.e., have several nodes) may be more resistant to disturbances like those brought on by climate change.

The spread and seriousness of disruption-related effects rely on a number of factors, including the preventive measures used and the recovery efforts made by various supply chain participants. According to (21) such influence resulting from disruptive incidents can be monitored at different places (or nodes) than where the incident is initiated. In terms of disruption dynamics and mitigation, it's crucial to consider where a disruption originates as well as how many and whose supply chain actors are involved (25).

Resilience can be defined as the dynamic ability to reduce disturbances and their adverse effects on many performance characteristics (26). A business firm's deliberate and connected actions can result in the formation of dynamic capabilities. Digitalization has improved the efficiency of Supply Chains in the era of Industry 4.0, and technologies like additive manufacturing, the Internet of Things (IoT), and Block Chain Technology have improved the SCs' operational procedures. To increase their resilience, SCs require cooperation and information exchange. Block Chain Technology could mediate connections among SC actors. Industry 4.0 technology can be connected to via Block Chain Technology, which could aid in process optimization (27).

There are two possible ways to respond to a disturbance in the supply chain. The firm's pre-defined reaction strategies are implemented as the initial response (28). To achieve this, it is necessary to determine the disruption's potential cause (29). Until the system recovers from disruption, a "list of corrective actions to rectify the root cause [must be] generated" (29) and the "appropriate rectification strategy [must be] selected" (29). This is true if the initial response is found to be insufficient to control the impact of the disruption on the supply. Following the return to order, "management should review the procedure so that the company can take corrective actions (product design, process control, supplier audits, etc.) to prevent or reduce the likelihood" of future disruptions (30). In order to make the supply network more resilient to future disturbances of this

nature, it may also be necessary to reconfigure it (28).

Environmental and Sustainability Initiatives

Corporate Sustainable strategies and processes are intricate ideas that incorporate environmental, economic, and social dimensions. These dimensions, in turn, entail a number of factors that interact intricately. According to (31), the idea of sustainability in the business world refers to current economic growth that satisfies present-day requirements without jeopardizing the ability of future generations to do the same. Managers create strategies and procedures that allocate resources to the social and environmental environments in addition to the economic rewards. Profitable Corporate Sustainable procedures and techniques require immediate attention. Government laws are making it more and more necessary for managers to address sustainability, and noncompliance is expensive (31). Four factors make sustainability urgently need attention: Regulations, community connections, cost and income considerations, and societal and moral duties are among the four main categories.

As a result of the rising pressure on businesses to adhere to sustainability standards and principles, it is imperative that they adopt sustainable business strategies to guarantee that resources are managed in a way that prevents future scarcity and that all environmental impacts associated with productive activities are minimized. A growing attempt on the part of the international human rights community to interact with the private sector more effectively has coincided with industry vows to improve sustainability (32). The human rights community, which had previously concentrated its efforts on governmental responsibility, has increasingly looked for methods to influence business behavior and has even partnered with corporations to promote better human rights compliance**.**

Innovation and sustainability are becoming more and more crucial in explaining the organizational environment. These elements are related on a normative, moral, and tactical level to boost competition. Innovations that are "sustainability-oriented" (SOIs) were created to address sustainability-related problems. SOIs can take a variety of shapes, such as the launch of new or enhanced goods, services, or product-service networks that incorporate sustainability principles (33). Small and medium-sized businesses (SMEs) should pay special attention to SOIs since they can assist these companies in achieving sustainable growth by tackling social and environmental issues. Various SOIs and strategic sustainability behaviors, such as eco-innovations, process innovations, and social innovations, have been found in SMEs. While process innovations focus on enhancing production procedures to cut down on waste and resource usage, eco-innovations design goods or processes that have less of an impact on the environment. Contrarily, social innovations entail the creation of goods or services that deal with societal problems like poverty and inequality. Innovation can occur suddenly or gradually, according to Tidd and Bessant. Radical innovation foresees significant changes to procedures, goods, or services. On the other side, incremental innovation envisions minor upgrades to currently offered goods, services, or processes, improving the manner in which something was previously performed. Innovation might take place in a process or a product, or both. Moving out of a current supply function might result in lower variable costs for the manufacture of an existing good or service, increasing productivity. The development of a new production function that includes the potential to differentiate an existing product, on the other hand, is what is meant by a product innovation.

Cost Optimization

Cost optimization is a critical catalyst for improvements in business processes and systems, especially in a competitive business environment where organizations are looking for methods to operate more effectively and decrease expenses. Cost optimization frequently entails examining existing processes for inefficiencies and redundancy. Organizations can cut operating expenses by streamlining and optimizing specific processes (34). Automation and robotics are increasingly being used by organizations seeking to reduce labour costs and increase accuracy. This transformation necessitates modifications in business processes and applications

in order to successfully integrate and manage automated systems. Moving to the cloud is a popular cost-cutting approach. Cloud computing enables businesses to scale resources as needed, lowering capital expenditures. This shift frequently involves application adjustments to assure compatibility and security. Businesses may outsource specific processes or activities to lower-cost countries in order to decrease costs. This transition necessitates modifications to processes and technologies used to manage external relationships and coordinate activities across several locations. The growing awareness of environmental and sustainability issues has prompted businesses to reduce their energy consumption. This optimization may necessitate modifications to production processes as well as the incorporation of energy-efficient applications. Embracing digital technologies and data analytics can assist businesses in identifying cost-cutting options. This transformation necessitates modifications to corporate processes and systems in order to capitalize on data-driven insights. Supply chain optimisation can have a substantial impact on expenses. Implementing supply chain management tools and systems frequently necessitates adjustments to applications and procedures to enable real-time tracking and coordination. Cost optimization within the IT department may lead to changes in application development approaches, such as the adoption of DevOps practices or open-source software, in order to cut licensing and development expenses. Cost reduction necessitates a rethinking of resource distribution. This involves more efficiently managing software licenses and subscriptions, which leads to changes in how programs are obtained and used. Organizations seeking to cut costs may launch process optimization and automation projects, which may result in changes to how apps are utilized (34).

The role of cost reduction initiatives in process modifications

Cost-cutting measures are important in pushing process changes within organizations. These measures are critical for retaining competitiveness, increasing efficiency, and increasing profitability. Identifying and reducing inefficiencies in current

processes is a common component of cost-cutting strategies. Organizations may employ Lean Six Sigma approaches to streamline operations and minimize waste, resulting in process adjustments that improve efficiency. Cost-cutting initiatives frequently entail optimizing resource allocation. This might result in modifications to process workflows, such as reallocating human resources, reorganising tasks, or condensing roles to save money (34). Implementing cost-effective automation and technology solutions might result in major process changes. These changes entail incorporating automated technologies into workflows, which may need restructuring procedures to incorporate new technology. Supply chain operations are typically the target of cost-cutting initiatives. Organisations change operations to increase supply chain efficiency, lower inventory carrying costs, and cut transportation costs. When cost-cutting measures involve outsourcing or offshoring specific tasks or processes, organisations must alter their procedures to accommodate external partners and coordinate work across many locations. Standardising processes and simplifying complex workflows are prominent cost-cutting solutions. Simplification frequently necessitates updating and optimising processes in order to minimise complexity and lower operational expenses. Organisations employ data analysis to discover cost-cutting options. Changes in how data is collected, analyzed, and used to support decision-making may be required when implementing data-driven decision-making procedures. Investing in employee training might lead to process changes. Training programs frequently result in adjustments to skill sets and work procedures to coincide with cost-cutting strategies. Typically, cost-cutting strategies necessitate organizational transformation. Change management practices that are effective and sustainable are required to ensure that process modifications are implemented effectively and sustainably. Creating a culture of continual improvement is critical to cost-cutting measures. As part of the organization's DNA, this culture fosters constant process adjustments and refinements. Cost-cutting measures act as accelerators for process

changes, causing organizations to become more efficient and adaptive.

The use of Technology to Streamline Operations and Reduce Expenses

The use of technology to streamline operations and cut costs is a disruptive strategy that organizations across industries are embracing. Using cutting-edge technologies like automation, data analytics, and cloud computing has enabled organizations to optimize processes, reduce resource waste, and increase cost-efficiency (35). Routine task and workflow automation using technologies such as robotic process automation (RPA) has resulted in significant time and cost reductions. Furthermore, data-driven decision-making enabled by advanced analytics technologies assists organizations in identifying cost-saving opportunities and making educated strategic decisions. Cloud computing has enabled organizations to cut capital expenditures and operate more efficiently due to its scalability and pay-as-you-go strategy. These technological advances not only expedite processes but also equip organizations to compete in an ever-changing digital landscape, making them nimbler and more adaptable in the face of obstacles.

Mergers and Acquisitions

Integrating Business Processes and Applications Post-Merger

Post-merger integration of business processes and systems is a complicated and crucial endeavor that shapes the success of merged companies, particularly in the setting of disruptive technology. Artificial intelligence (AI), blockchain, and the Internet of Things (IoT) are examples of disruptive technologies that might bring both possibilities and obstacles during integration (36). A comprehensive approach is required for successful integration, which includes not only the harmonization of IT systems but also the alignment of organizational cultures and strategies. In this process, leveraging disruptive technology might enable more efficient operations and innovation. To prevent any disruptions and ensure a seamless merger of processes and systems, thorough planning, precise data migration, and robust change management methods are required. To realize the full potential of

their union, merging organizations must strike a delicate balance between leveraging the benefits of disruptive technologies and maintaining operational stability.

Strategies for Harmonizing Different Systems and Cultures

In the context of disruptive technology, strategies for harmonizing diverse systems and cultures are critical during mergers and acquisitions. The integration process necessitates a comprehensive approach that considers both technological and cultural aspects. AI, IoT, and blockchain are examples of disruptive technologies that can provide transformative solutions for system harmonization and cultural alignment. Organizations can develop common platforms that span existing IT systems and facilitate interoperability by embracing these technologies (37). Furthermore, advanced analytics and AI-driven insights enable data-driven decision-making to identify cultural gaps and develop cultural convergence initiatives. To build a collaborative mentality and a united corporate culture across merged companies, open communication and change management strategies are critical. Finally, successful system and culture harmonization is dependent on a smart blend of disruptive technology, thoughtful leadership, and a commitment to organizational alignment.

Change Management Strategies

Effective Change Management Practices to Facilitate Smooth Transitions

Effective change management practices remain critical for ensuring seamless transitions in organizations facing considerable change. Staying flexible is critical in today's fast-changing corporate scene, where upheavals and changes are expected. (38) research emphasizes the necessity of cultivating a culture of change resilience in which people are taught to accept change as usual. This mental shift, together with proactive communication and engagement tactics, contributes to organizational agility. Furthermore, as stated, adopting digital tools and platforms for change management can improve cooperation, information sharing, and tracking progress during transitions, all of which leads to smoother change implementations. Modern change

management practices, in essence, emphasize a dynamic approach that coincides with the ever-changing character of the modern company environment.

The Role of Leadership in Driving Change Initiatives

In today's dynamic business climate, the role of leadership in driving change efforts is critical. Leadership acts as a change agent, helping organizations through transformations. Recent research highlights the importance of leadership in change management. As discovered that leaders play a critical role in articulating a clear vision for change, determining the direction, and pushing staff to embrace change. This is consistent with seminal work, which emphasizes the need to develop a compelling vision and successfully express it in order to engage stakeholders in the change process. Furthermore, as points out, leaders' adaptability and resilience in the face of uncertainty and ambiguity are critical because they set an example for the organization. Leadership that supports innovation and cultivates a culture of continuous learning, as noted, is critical for driving successful change initiatives in today's fast-paced business context. Finally, leadership is the linchpin that converts plans into action, mobilizes resources, and motivates the organization to embrace change as a source of growth and advancement.

Data and Analytics

Leveraging Data Analytics for Insights into Process Performance

Recent research emphasizes data analytics' transformational potential in process optimization. (36) highlight the relevance of big data analytics in discovering inefficiencies, bottlenecks, and improvement possibilities across multiple business processes in their study. The Internet of Things (IoT) and artificial intelligence (AI) create massive volumes of data that can be used to improve process efficiency. Furthermore, the integration of predictive analytics and machine learning algorithms enables organizations to foresee problems and change operations proactively to minimize interruptions. Organizations that effectively use data analytics in today's digital age are better positioned to react to

the transformative potential of disruptive technologies, resulting in greater operational performance, cost savings, and increased competitiveness.

Using Data-Driven Decisions to Optimize Applications

Using data-driven decisions to optimize apps has become a foundational component of modern corporate strategies. A recent study shows that data-driven insights have a transformative impact on application optimization. Organizations acquire the capacity to make informed decisions and fine-tune their apps for improved performance as they collect and analyze massive amounts of data. (39) emphasize in their study how data-driven decision-making can result in significant value creation by improving application functionality, user experience, and efficiency. Furthermore, AI and machine learning technologies are essential in application optimization because they provide real-time insights into user behavior, enable predictive maintenance, and enable personalized user experiences. This data-driven strategy not only increases application stability and scalability but also enables organizations to respond quickly to changing market circumstances, keeping them at the forefront of innovation and competition.

Important terms associated with Modifications and Triggers of Business Processes

1. **Change Management**: Change management refers to the structured approach and processes used to transition individuals, teams, and organizations from a current state to a desired future state. It involves planning, implementing, and monitoring changes effectively to minimize resistance and maximize adoption (40).

2. **Risk Management**: Risk management involves identifying, assessing, and prioritizing risks followed by coordinated efforts to minimize, monitor, and control the impact or probability of these risks. It aims to mitigate potential negative impacts on business processes and operations (41).

3. **Cost Management**: Cost management involves strategies and techniques for planning and

controlling the budget of a project or business process. It includes activities such as cost estimation, budgeting, cost control, and cost optimization to ensure that resources are utilized efficiently (42).

4. **Business Process Management (BPM)**: BPM encompasses the methods, tools, and techniques used to analyze, design, implement, monitor, and optimize business processes within an organization. It focuses on improving efficiency, effectiveness, and adaptability of processes to meet organizational goals (43).

5. **Business Process Reengineering (BPR)**: BPR is the radical redesign of business processes to achieve dramatic improvements in performance, productivity, and quality. It involves questioning existing processes and implementing fundamental changes to achieve significant results (44).

6. **Digital Intensity Index (DII)**: DII measures the extent to which digital technologies are integrated into economic operations and activities within various industries. It provides insights into the level of digitalization and its impact on productivity, innovation, and competitiveness (45).

7. **Automation**: Automation involves the use of technology to perform tasks or processes with minimal human intervention. It aims to improve efficiency, accuracy, and speed of operations while reducing costs and reliance on manual labor (46).

8. **Artificial Intelligence (AI)**: AI refers to the simulation of human intelligence processes by machines, particularly computer systems. It involves tasks such as learning, reasoning, problem-solving, perception, and decision-making, enabling systems to perform tasks that typically require human intelligence (47).

9. **Internet of Things (IoT)**: IoT is a network of interconnected devices or objects embedded with sensors, software, and other technologies that enable them to collect and exchange data. It facilitates real-time monitoring, control, and automation of various processes and systems (48).

10. **Blockchain Technology**: Blockchain is a decentralized and distributed digital ledger technology that records transactions across multiple computers in a secure and immutable manner. It provides transparency, traceability, and security for transactions, particularly in supply chain management and financial transactions (49).

11. **Smart Contracts**: Smart contracts are self-executing contracts with the terms of the agreement written into code. They automatically enforce and execute the terms of the contract when predefined conditions are met, without the need for intermediaries (50).

12. **Sustainability Initiatives**: Sustainability initiatives involve actions taken by organizations to address environmental, social, and economic challenges while ensuring long-term viability and resilience. These initiatives aim to minimize negative impacts on the environment and society while maximizing positive contributions (51).

13. **Supply Chain Disruptions**: Supply chain disruptions refer to unexpected events or incidents that disrupt the flow of goods, services, or information within a supply chain network. These disruptions can lead to delays, shortages, increased costs, and other negative consequences for businesses (52).

14. **Cost Optimization**: Cost optimization involves strategies and techniques aimed at minimizing expenses while maximizing value and efficiency. It includes activities such as reducing waste, improving productivity, and optimizing resource allocation to achieve cost savings (53).

15. **Data Analytics**: Data analytics involves the process of analyzing and interpreting large volumes of data to uncover insights, patterns, and trends that can inform decision-making and drive business improvements. It encompasses various techniques such as statistical analysis, data mining, predictive modeling, and machine learning (54).

For the systematic review, the parameters can be defined as follows:

1. Categories of Triggers

- Technological Advancements: Including but not limited to AI, machine learning, robotics, big data, cloud computing, IoT, blockchain, and smart contracts.

- Market Trends: Such as changes in consumer behavior, preferences, environmental factors, globalization, and disruptive innovations.
- Supply Chain Disruptions: Covering unexpected events impacting supply chain performance, complexities in the supply chain, resilience strategies, and Industry 4.0 technologies.
- Environmental and Sustainability Initiatives: Focusing on corporate sustainability strategies, regulatory compliance, societal pressures, and innovation for sustainability.
- Cost Optimization: Addressing cost-cutting measures, process efficiencies, automation, outsourcing, energy efficiency, and digital technologies for cost reduction.
- Use of Technology to Streamline Operations: Highlighting automation, data analytics, cloud computing, and other technologies for operational optimization and cost reduction.
- Mergers and Acquisitions: Considering post-merger integration challenges, technology integration, cultural alignment, and strategies for harmonizing systems.
- Change Management Strategies: Covering effective practices for managing organizational change, leadership roles, cultural adaptation, and the use of digital tools for change management.
- Data and Analytics: Examining the role of data analytics in process optimization, predictive analytics, machine learning, and data-driven decision-making for application optimization.

2. Inclusion Criteria for Literature Sources

- Peer-reviewed academic journals, conference papers, and scholarly articles.
- Published within the last 10 years to ensure relevance and currency.
- Articles written in English for accessibility.
- Studies focusing on business process management, organizational change, technology adoption, and related fields.

- Studies with empirical research, case studies, theoretical frameworks, or systematic reviews relevant to the identified categories of triggers.

3. Applicability to Business Process Management

- The systematic review aims to provide insights into how various triggers impact business processes and management strategies.
- It seeks to identify trends, best practices, challenges, and opportunities for organizations in adapting to changes in the business environment.
- The review will assess the effectiveness of different approaches to managing change, integrating new technologies, and optimizing processes in the context of business process management.
- Findings from the review will contribute to enhancing understanding, informing decision-making, and guiding future research in the field of business process management and organizational adaptation.

Examining how transparent and repeatable the review procedure is in terms of data extraction, study quality evaluation, and result synthesis

The below mentioned details provides a comprehensive overview of various factors influencing business processes and strategies, including emerging technologies, market trends, supply chain disruptions, environmental initiatives, cost optimization, mergers and acquisitions, change management, and leveraging data analytics.

Technology Advancements: Discusses the impact of emerging technologies such as AI, machine learning, robotics, big data, cloud computing, and the Internet of Things (IoT) on business processes across different industries. It highlights how these technologies are being used to automate processes, improve efficiency, enhance decision-making, and drive innovation.

Market Trends: It examines how businesses need to adapt to changing market dynamics, including shifts

in consumer behavior, globalization, and disruptive innovations. The focus is on the continuous evolution of business models to remain competitive in dynamic environments.

Supply Chain Disruptions: It addresses the challenges posed by supply chain disruptions and the importance of resilience in mitigating their impact. It discusses the complexity of modern supply chains, the role of technology in improving supply chain efficiency, and strategies for responding to disruptions.

Environmental and Sustainability Initiatives: This section highlights the growing importance of sustainability in business operations and the need for organizations to adopt sustainable practices to comply with regulations, meet societal expectations, and mitigate environmental risks.

Cost Optimization: It emphasizes the significance of cost optimization in driving process improvements and maintaining competitiveness. The text discusses various cost-cutting strategies, including process streamlining, automation, outsourcing, and energy efficiency measures.

Mergers and Acquisitions: Discusses the challenges associated with integrating business processes and systems post-merger. It emphasizes the role of disruptive technologies in facilitating integration efforts and the importance of effective change management and cultural alignment.

Change Management Strategies: It underscores the importance of effective change management practices in facilitating smooth transitions during periods of significant change. The text emphasizes the role of leadership in driving change initiatives and leveraging digital tools for effective communication and collaboration.

Data and Analytics: It highlights the transformative potential of data analytics in optimizing processes and applications. It discusses the role of big data, predictive analytics, machine learning, and AI in driving operational performance, cost savings, and competitiveness.

Examining patterns or trends in the triggers that impact business applications and processes, emphasizing

the consequences for innovation and organizational adaptation

- The integration of AI, machine learning, robotics, big data, and cloud computing is transforming business processes across various sectors, leading to automation, increased productivity, and improved decision-making.
- AI technologies, in particular, are revolutionizing marketing, sales, manufacturing, logistics, human resources, content management, and customer service, resulting in more efficient operations, cost reductions, and enhanced user experiences.
- The Internet of Things (IoT) is enhancing data collection, storage, and analysis capabilities, enabling real-time insights into products, processes, and customer behavior, thereby boosting productivity and efficiency.
- Businesses are continuously adapting their processes and business models in response to market shifts, disruptive innovations, and environmental turbulence.
- Dynamic business environments necessitate the adoption of new strategies, technologies, and practices to maintain competitiveness and achieve meaningful results.
- Innovation and sustainability are becoming increasingly intertwined, with sustainability-oriented innovations addressing social and environmental challenges while driving business growth.
- Supply chain disruptions are occurring more frequently and spreading across multiple tiers, leading to increased costs and complexity.
- Resilience and dynamic capabilities are essential for mitigating disruptions and minimizing their adverse effects on performance.
- Technologies such as blockchain and Industry 4.0 solutions offer opportunities to enhance supply chain efficiency, coordination, and resilience through digitalization and collaboration.
- Cost reduction initiatives drive process modifications aimed at improving efficiency, reducing waste, and increasing profitability.
- Organizations leverage technology, automation, outsourcing, and energy efficiency measures to

optimize costs across various functions and processes.

● Data-driven decision-making and supply chain optimization play crucial roles in identifying and implementing cost-saving opportunities.

● Effective change management practices are essential for facilitating smooth transitions amidst significant organizational changes.

● Leadership plays a pivotal role in driving change initiatives, articulating visions, fostering innovation, and cultivating a culture of continuous improvement.

● Digital tools and platforms enhance collaboration, communication, and tracking progress during change implementations.

● Data analytics offer transformative insights into process performance, enabling organizations to identify inefficiencies, predict problems, and optimize operations.

● Leveraging data-driven decisions for application optimization enhances functionality, user experience, and organizational responsiveness to market dynamics.

Theoretical models and conceptual frameworks used to comprehend the dynamic interactions between business processes and technological applications are informed by identified triggers of change.

The theoretical models and conceptual frameworks used to comprehend the dynamic interactions between business processes and technological applications are informed by these identified triggers of change in several ways:

Systems Theory: Systems theory views organizations as complex systems composed of interconnected and interdependent parts. Triggers of change, such as emerging technologies and market trends, are seen as inputs that impact the organization's system. Theoretical models based on systems theory help understand how changes in one part of the system (e.g., technology adoption) can ripple through and affect other parts (e.g., business processes) (55).

Change Management Models: Change management models, such as Lewin's Change Management Model or Kotter's 8-Step Process for Leading Change, provide frameworks for understanding how organizations can effectively implement change. Triggers of change, such as mergers and acquisitions or technological advancements, are identified as catalysts for change initiation within these models. These models offer strategies and steps for managing change processes in response to these triggers (56).

Business Process Management (BPM): BPM frameworks focus on analyzing, categorizing, modifying, and monitoring business processes to ensure they align with organizational goals and respond to external triggers of change. Identified triggers such as technological advancements or supply chain disruptions prompt organizations to assess and optimize their business processes using BPM methodologies like Six Sigma or Lean (57).

Technology Adoption Models: Theoretical frameworks like the Technology Acceptance Model (TAM) or the Diffusion of Innovations Theory help understand how and why organizations adopt new technologies. Triggers such as advancements in AI or cloud computing drive the adoption of these technologies within organizations, impacting their business processes and operations (58).

Supply Chain Management (SCM) Models: SCM models focus on optimizing supply chain processes to enhance efficiency and responsiveness. Triggers like supply chain disruptions prompt organizations to reevaluate and redesign their supply chain processes using SCM methodologies such as resilient supply chain frameworks or risk management strategies (59).

Data Analytics Frameworks: Theoretical frameworks related to data analytics, such as descriptive, predictive, and prescriptive analytics, help organizations leverage data to gain insights into process performance and make informed decisions. Triggers such as the use of data analytics for optimizing applications drive the adoption of these frameworks, enabling organizations to enhance their processes based on data-driven insights (60).

Therefore, these theoretical models and conceptual frameworks provide organizations with tools and perspectives to understand and respond to the dynamic interactions between business processes

and technological applications in the face of various triggers of change in the business environment.

Conclusion

The triggers for changes in corporate operations and applications highlight how dynamic current business environments are. Change in these fields is sparked by a number of factors. These catalysts can come from both internal and external sources, including developments in technology, shifts in market needs, modifications to regulatory standards, and adjustments to organizational goals. To stay competitive and adaptable, organizations must be proactive in identifying and addressing these triggers. To successfully navigate the constantly changing world of corporate processes and applications, they need to employ agile and adaptable procedures and technologies. Additionally, it is critical for firms to create a culture of innovation and continual development. This can enable individuals to take advantage of opportunities brought about by change as well as successfully respond to triggers. In the end, being aware of the signs of change and seizing them as chances for improvement can provide you a strategic edge in the fast-paced corporate environment.

Abbreviation

Nil.

Author Contributions

Each author's contribution to the manuscript is as follows: Dr. Joshuva Selvakumar and Dr. Suganya has significantly contributed to the introduction and literature review for the research. Further, discussion and conclusion were done by Dr. Sathish Pachiyappan and Arthi TS. All authors have read and approved the final version of the manuscript.

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Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

We confirm that the research was conducted with utmost integrity and without any undue influence.

Ethics Approval

This research adhered to ethical guidelines and prepared the manuscript as per the journal requirements.

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