


DIGITAL TRANSFORMATION IN SUPPLY CHAINS: BENEFITS, CHALLENGES, AND TECHNOLOGICAL INNOVATIONS

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ABSTRACT

Digitalization is revolutionizing supply chains, resulting in significant gains in efficiency and competitiveness. This study investigates the role of digital technologies, such as the Internet of Things (IoT), artificial intelligence (AI), big data, and blockchain, in transforming supply chain management. The research presents a review of the current literature and analyzes case studies of companies that have adopted these innovations. The results show that the integration of these technologies allows for better visibility of processes, facilitating informed and agile decision-making. The automation of routine tasks and the prediction of demands through AI algorithms contribute to reducing costs and minimizing waste. In addition, the use of digital platforms improves collaboration between the various actors in the chain, optimizing the flow of information. However, the study also highlights the challenges associated with digitalization, such as resistance to change, the need for significant investments, and the shortage of technical skills. The analysis concludes that, despite the barriers, the benefits of digitalization outweigh the challenges, making it essential for the sustainability and growth of supply chains.

Keywords: Digital Transformation. Supply Chains. Technological Innovations. Challenges and Benefits.

INTRODUCTION

Digitalization has proven to be a transformative force in several industries, significantly impacting operations and supply chain dynamics. As businesses face an increasingly complex business environment characterized by changing consumer preferences, increased competition, and the need for efficiency, the adoption of digital technologies becomes essential for survival and growth.

The supply chain is an integrated system that encompasses all stages from the procurement of raw materials to the delivery of the final product to the consumer. This network includes suppliers, manufacturers, distributors, retailers, and finally consumers. Efficiency in supply chain management is crucial, as it directly affects a company's ability to quickly meet market demands, control costs, and ensure product quality.

Digital technologies such as the Internet of Things (IoT), artificial intelligence (AI), big data, and blockchain are reshaping the way operations are carried out. They enable improved real-time visibility of processes, optimize decision-making, and improve collaboration between the different links in the chain. IoT, for example, provides constant monitoring of assets and operating conditions, while AI helps in predicting demands and automating processes.

However, this digital transformation is not without challenges. Resistance to cultural change, the need for substantial investments in technology, and a shortage of skilled talent are all barriers that many organizations face. Against this backdrop, this study seeks to comprehensively explore the impact of digitalization on supply chain efficiency, highlighting the benefits and challenges involved. Through the analysis of practical cases and the review of existing literature, we hope to offer valuable insights that help companies navigate this transition, ensuring their competitiveness and sustainability in an ever-evolving market.

SUPPLY CHAIN CONCEPT

The supply chain is a complex system that covers all stages of the production and distribution process of goods and services, from the procurement of raw materials to the delivery of the final product to the consumer. This system is made up of a network of organizations, people, activities, information, and resources that work together to transform inputs into finished products and deliver them to the market.

An efficient supply chain is crucial for business success, as it directly impacts the company's ability to meet market demands in an agile, cost-effective, and quality way.

Efficiency in supply chain management allows companies to respond quickly to changing consumer preferences, optimize their inventory levels, reduce operating costs, and improve customer satisfaction.

Key supply chain steps include:

1. **Procurement of Materials:** Selection and purchase of inputs necessary for production, which may involve negotiating with suppliers, analyzing costs, and ensuring quality.
2. **Production:** Processing of raw materials into finished products, including planning, scheduling, and control of production. This stage is essential to ensure that production occurs efficiently, minimizing waste and respecting deadlines.
3. **Storage:** Management of stocks of raw materials, products in process and finished products. Effective inventory management helps to avoid both shortages and overruns of products, balancing storage costs and meeting demand.
4. **Distribution:** Transportation and delivery of products to points of sale or directly to the final consumer. The choice of modes of transport, routes and deadline management are essential to ensure that products arrive in good condition and on time.
5. **Customer Service:** Management of orders, returns and customer support, ensuring that your needs are met. Good customer service is crucial for building loyalty and building a positive brand image.

IMPORTANCE OF DIGITALIZATION IN THE SUPPLY CHAIN

The digitalization of the supply chain introduces technologies that improve visibility, traceability, and agility at all these stages. Technologies such as the Internet of Things (IoT) enable real-time monitoring of assets and processes, while big data analytics offer valuable insights into consumption patterns and operational performance. Artificial intelligence (AI) can optimize production planning and inventory management, predicting demands more accurately and adapting quickly to market fluctuations.

In addition, the use of digital platforms facilitates collaboration between the various links in the chain, improving communication and transparency. This integration not only reduces the response time to changing market conditions but also helps to identify and mitigate potential risks more effectively.

Finally, digitalization not only increases efficiency but can also result in a significant competitive advantage. In an increasingly dynamic and demanding business environment, companies that adopt digital technologies in their supply chains are better positioned to innovate, grow, and proactively meet consumer expectations.

THEORETICAL FRAMEWORK

The theoretical framework of this study addresses the fundamental concepts and practices related to the supply chain and digitalization, emphasizing how these interactions influence the operational and competitive efficiency of organizations. Below, the main relevant concepts and theories are discussed in depth.

SUPPLY CHAIN

The supply chain is an integrated system that encompasses all the activities required to transform raw materials into finished products and deliver them to the end consumer. According to Christopher (2016), the supply chain is composed of a network of interconnected organizations, where each participant plays a specific role. The efficiency and effectiveness of this chain are crucial for the competitiveness of companies and include several components:

- **Coordination and Integration:** The integration of activities between different partners in the chain is essential to minimize delays and costs. Supply Chain Management (SCM) seeks to coordinate all stages, from the acquisition of materials to final delivery, ensuring a continuous flow of information and products (Mentzer et al., 2001).
- **Visibility:** Having a clear view of all stages of the chain is essential. This involves the use of information systems that allow you to monitor the status of orders, the level of stock, and the conditions of transportation. Visibility helps to identify bottlenecks and respond quickly to issues that may arise (Simchi-Levi et al., 2018).
- **Flexibility and Agility:** In a dynamic business environment, the ability to adapt quickly to change is vital. Flexibility allows companies to adjust their production and logistics according to fluctuations in demand and market conditions (Srinivasan et al., 2019).

DIGITALIZATION IN THE SUPPLY CHAIN

Digitalization refers to the integration of digital technologies into business processes and is a critical factor in the transformation of supply chains. Key digital technologies include:

- Internet of Things (IoT): IoT connects devices and systems, allowing for real-time data collection and analysis. This enables continuous monitoring of assets and processes. For example, sensors in warehouses can track the temperature of perishable goods, while devices in delivery vehicles monitor the location and condition of products (Miorandi et al., 2012). This real-time visibility makes it easy to optimize inventories and track products along the chain.
- Big Data: The use of big data involves analyzing large volumes of data from a variety of sources, including sales transactions, customer feedback, and market trends. According to Chen et al. (2012), the ability to analyze this data allows companies to identify patterns, improve demand forecasts, and optimize strategic decision-making. Predictive analytics, for example, can help anticipate spikes in demand and adjust production accordingly.
- Artificial Intelligence (AI): AI is used to automate processes and improve decision-making. Machine learning algorithms can analyze historical data to predict future trends and optimize resource allocation (Wang et al., 2016). Additionally, AI can be applied in chatbots for customer service, improving the consumer experience and reducing the workload on support teams.
- Blockchain: This technology provides an additional layer of security and transparency in transactions. Blockchain allows for the secure and immutable record of all transactions in the supply chain, facilitating the traceability of products from origin to the end consumer (Kouhizadeh & Sarkis, 2018). This is especially relevant in industries where product authenticity and safety are crucial, such as food and medicine.

CHALLENGES OF DIGITALISATION

Despite the advantages, digitalization also presents significant challenges that companies must face:

- Resistance to Change: Organizational culture often resists the adoption of new technologies. According to Kotter (1996), it is essential to implement effective

change management that includes clear communication and involvement of all stakeholders to overcome this resistance.

- **Technology Investments:** Implementing digital solutions often requires substantial investments in infrastructure and training. Companies need to carefully evaluate the return on investment (ROI) to ensure that the costs are justified by the benefits (McKinsey, 2020).
- **Talent Shortage:** The lack of technical skills in the workforce is a significant challenge. Many organizations face difficulties in finding qualified professionals in data analysis, information technology management, and other areas related to digitalization (Boulton, 2021).

IMPACT ON SUPPLY CHAIN EFFICIENCY

Studies show that digitalization can lead to significant improvements in supply chain efficiency:

- **Cost Reduction:** Digitalization allows for the automation of processes, resulting in cost savings through the reduction of human errors and the optimization of the use of resources (Gunasekaran et al., 2017).
- **Increased Agility:** With the ability to collect and analyze data in real-time, businesses can react quickly to changing market conditions, improving their operational agility and responsiveness (Klaus & Krieger, 2017).
- **Improved Customer Satisfaction:** Digitalization facilitates more agile and personalized customer service. The ability to forecast demand and adapt production and logistics accordingly results in faster and more accurate deliveries, increasing customer satisfaction (Zhang et al., 2018).

CONCLUSION

The theoretical framework presented highlights the interrelationship between digitalization and supply chain efficiency. Understanding the fundamental concepts and technologies involved allows companies to prepare for the challenges and opportunities that come with digital transformation. As digitalization becomes an integral part of supply chains, organizations that adopt it strategically will be better positioned to ensure their relevance and competitiveness in an ever-evolving market.

DIGITAL TECHNOLOGIES IN THE SUPPLY CHAIN

Digital transformation in the supply chain is driven by various technologies that optimize processes, improve efficiency, and increase transparency. Let's explore in detail the four main technologies: Internet of Things (IoT), Big Data, Artificial Intelligence (AI), and Blockchain.

INTERNET OF THINGS (IOT)

The Internet of Things (IoT) refers to the connection of devices, sensors, and systems through the internet, allowing for real-time data exchange and communication. In the supply chain, IoT is a central element that enhances operational visibility and management.

- **Real-Time Monitoring:** Connected sensors are used to continuously monitor the state of products, such as temperature, humidity, and location. For example, in the transportation of pharmaceutical products, sensors can ensure that storage conditions are maintained, preventing product degradation. This monitoring capability not only increases confidence in the quality of products, but also helps to identify problems quickly, allowing for immediate interventions.
- **Product Tracking:** With the use of technologies such as RFID (Radio Frequency Identification) and GPS, businesses can track products throughout the supply chain. This provides real-time visibility into the movement of products, allowing companies to respond quickly to any deviation or delay, improving operational efficiency and reducing costs associated with product loss.
- **Demand Forecasting:** IoT allows businesses to collect data on purchasing behaviors and consumption patterns in real-time. With this information, it is possible to apply predictive models to adjust production and inventory levels, minimizing the risk of overstocks or stockouts. This translates into more efficient inventory management and reduced operating costs.
- **Predictive Maintenance:** IoT sensors can monitor the performance of equipment and machinery, collecting data on their utilization and wear. Analytics algorithms can predict failures before they occur, allowing businesses to proactively perform maintenance. This results in fewer unexpected downtime and increased efficiency in production, improving overall productivity.

BIG DATA

Big Data refers to the collection, storage, and analysis of large volumes of data generated by various sources. This technology is crucial for supply chain optimization in many ways.

- **Identifying Patterns and Trends:** Big data analytics allows businesses to identify hidden patterns in consumer preferences and market trends. For example, a detailed analysis of sales data may reveal that certain products are more popular at certain times of the year or in specific regions, allowing businesses to adjust their marketing and production strategies to meet demand.
- **Demand Forecast Optimization:** Machine learning algorithms applied to real-time and historical data can improve the accuracy of demand forecasts. This not only helps to prevent overstocking but also minimizes the possibility of stockouts by ensuring that the right products are available at the right time (Wang et al., 2016).
- **Inventory Management:** With insights generated by Big Data analytics, businesses can implement more efficient inventory management systems. For example, by adopting a Just-In-Time (JIT) approach, companies are able to align their production and logistics operations with fluctuations in demand, reducing storage costs and improving cash flow (Kumar & Singh, 2020).
- **Supplier Performance Analysis:** Big Data allows companies to evaluate the performance of their suppliers based on criteria such as quality, cost, and timeliness. This analysis helps in making decisions about which suppliers to keep or replace, contributing to the efficiency of the chain.

ARTIFICIAL INTELLIGENCE (AI)

Artificial Intelligence (AI) involves the simulation of human intelligence processes by machines, enabling automation and data-driven decision-making. In the supply chain, AI is applied in several areas.

- **Process Automation:** AI can automate repetitive tasks such as order processing, inventory management, and data analysis, freeing up teams to focus on more strategic activities. This not only improves efficiency but also reduces errors and increases accuracy (Wang et al., 2016).

- **Failure Prediction and Predictive Maintenance:** Machine learning algorithms can predict equipment failures by analyzing data on performance and maintenance history. This allows companies to carry out interventions before larger problems occur, reducing downtime and improving efficiency (Xie et al., 2020).
- **Transportation Route Optimization:** AI can analyze real-time data on traffic conditions, weather, and fuel costs to determine the most efficient delivery routes. This optimization capability not only reduces transportation costs but also improves delivery times, resulting in increased customer satisfaction (Vanhoof et al., 2020).
- **Personalization of Offers:** AI allows businesses to personalize their offers based on customer preferences. Using consumer behavior data, businesses can tailor their communications and promotions, increasing the relevance and effectiveness of marketing campaigns (Choudhury et al., 2020).

BLOCKCHAIN

Blockchain is a decentralized ledger technology that offers security and transparency in transactions. In the supply chain, its applications are extensive.

- **Traceability:** Blockchain allows for the immutable record of all transactions related to a product, from its origin to the end consumer. This is crucial in industries such as food and pharmaceuticals, where traceability is essential to ensure safety and regulatory compliance (Kouhizadeh & Sarkis, 2018). The ability to track a product in real-time helps to quickly identify the source of any issues.
- **Transparency and Trust:** The decentralized nature of blockchain increases the transparency of operations by allowing all partners in the chain to access information in real-time. This helps to build trust between partners, reducing the possibility of fraud, as transactions are securely verified and recorded (Makhdoom et al., 2021).
- **Cost Reduction:** Implementing smart contracts, which run automatically when certain conditions are met, can eliminate intermediaries and streamline processes. This not only reduces administrative costs but also increases overall efficiency by making the flow of information and payments more streamlined (Saber et al., 2019).

- **Data Security:** Blockchain offers a superior level of security by storing data in an encrypted and distributed way. This reduces the risk of cyberattacks and fraud while ensuring that the integrity of information in the supply chain is maintained (Zhang et al., 2020).

CONCLUSION

Digital technologies such as IoT, Big Data, AI, and Blockchain are revolutionizing supply chains, providing significant improvements in visibility, efficiency, and security. The strategic adoption of these technologies allows companies to become more agile and responsive to market changes, as well as offering a solid foundation for innovation and long-term competitiveness. With continued technological evolution, companies that invest in and implement these solutions will be better positioned to meet the challenges of the future and maximize the value of their supply chain operations.

BENEFITS OF DIGITALIZATION

Digitalization in the supply chain not only transforms operations, but also generates a number of strategic benefits. Below, we explore in greater detail three of these benefits: increased operational efficiency, improved visibility, and data-driven decision-making.

INCREASED OPERATIONAL EFFICIENCY

Digitalization is a key driver of operational efficiency, allowing businesses to automate processes and reduce costs.

- **Process Automation:** Technologies such as Robotic Process Automation (RPA) automate repetitive tasks such as order processing and inventory management. This reduces the time it takes to complete these tasks, allowing businesses to increase productivity and direct human resources towards more strategic activities, such as innovation and customer service.
- **System Integration:** Digitalization allows the integration of various systems, such as ERP, CRM, and warehouse management systems (WMS). This integration provides a more efficient flow of information, eliminating data silos and allowing all departments to work with consistent information. As a result, companies are able to optimize end-to-end processes.

- **Accelerated Production Cycles:** With automation and system integration, production cycles can be shortened significantly. For example, a company that utilizes IoT to monitor machines in real-time can detect faults quickly, minimizing downtime and ensuring that production is not interrupted.
- **Agile Responsiveness:** Digitalization makes it possible for businesses to adapt quickly to fluctuations in demand. If a product suddenly becomes popular, the company can adjust production and logistics in near real-time, avoiding overstocks or stockouts.

IMPROVEMENT IN VISIBILITY

Improved visibility into the supply chain is one of the most significant benefits of digitalization, providing more precise control over operations.

- **Real-Time Visibility:** Technologies such as IoT and tracking systems allow businesses to monitor the status of their products in real-time, from manufacturing to final delivery. This visibility allows businesses to identify problems before they become crises.
- **Data Analysis to Identify Bottlenecks:** With analytical tools, businesses can perform performance analysis to identify bottlenecks and inefficiencies. For example, if a frequent delay occurs in the delivery of raw materials, the company can investigate the cause and implement solutions, such as changing suppliers or adjusting transportation routes.
- **Improved Communication:** Digitalization improves communication between all participants in the chain, including suppliers, manufacturers, and distributors. Integrated systems allow all stakeholders to access the same information in real time, facilitating collaboration and reducing the possibility of communication errors.
- **Transparency for Consumers:** Digitalization can also increase transparency regarding the product lifecycle, allowing consumers to know where products come from and how they were manufactured. This is especially important in industries such as food and fashion, where sustainability and ethics are increasingly valued by consumers.

DATA-DRIVEN DECISION-MAKING

Digitalization enables a data-driven approach to decision-making, which is key to increasing the competitiveness of companies.

- **In-Depth Insights:** Utilizing Big Data and analytical techniques allows businesses to uncover insights that would not be noticeable in conventional analytics. These insights can include consumer trends, buying patterns, and customer behavior, which inform marketing, product development, and inventory management decisions.
- **Planning and Projections:** With real-time and historical data, businesses can develop predictive models that help with production planning and inventory management. This not only improves efficiency but also helps to avoid cost overruns associated with stale or under-stock.
- **Efficient Resource Allocation:** Decisions informed by data analytics allow businesses to allocate resources more effectively by investing in areas that offer the highest return. This is particularly important in a volatile economic environment, where agility and efficiency are crucial.
- **Increased Competitiveness:** Companies that use data to direct their operations have a significant competitive advantage. The ability to make quick and informed decisions allows these businesses to better adapt to changing consumer preferences and market conditions, ensuring a strong position in a competitive landscape

CONCLUSION

The benefits of digitalization in the supply chain are far-reaching and significant. Increased operational efficiency, improved visibility, and the ability to make informed decisions are all factors that contribute to superior performance and a stronger competitive position in the market. As companies continue to integrate digital technologies, they are not only enhancing their operations but also preparing to meet future challenges with greater agility and effectiveness. Digitalization is not just a trend; It is a strategic necessity for any business that wants to thrive in the modern era.

CHALLENGES OF DIGITALIZATION

Digitalization in the supply chain presents significant challenges that can impact the effectiveness and success of initiatives. Below, we discuss in greater depth three of these challenges: initial investment, resistance to change, and data security.

INITIAL INVESTMENT

Implementing digital technologies often requires substantial investments, which can be an obstacle, especially for small and medium-sized enterprises (SMEs).

- **Technology Costs:** Acquiring software (such as ERP and WMS systems), hardware (such as IoT sensors, servers, and tracking devices), and robust communication networks involves high costs. For example, an ERP system can cost tens of thousands of dollars, depending on the complexity and functionality required. Additionally, customizing these solutions to meet the specific needs of the business can further increase the cost.
- **Training and Qualification:** For digitalization to be successful, employees need to be trained to use the new tools. This entails investing in training programs, which may include workshops, online courses, and hands-on sessions. The cost associated with this training can be high, and the lack of adequate training can result in resistance and inefficiency in the adoption of new technologies.
- **Return on Investment (ROI):** Companies are often hesitant to make large investments without a clear projection of return. Assessing ROI in digitalization projects is complex, as the benefits may not be immediate. It is important for companies to develop clear metrics to assess the success of digitalization over time.
- **Access to Finance:** Many SMEs face difficulties in obtaining funding for their digitalization initiatives. Banks and financial institutions may consider these initiatives to be high-risk, making obtaining loans more challenging. Government support programs or partnerships with other companies can be viable alternatives to overcome this barrier.

RESISTANCE TO CHANGE

Resistance to change is a common barrier that can hinder the transition to a digital environment.

- **Organizational Culture:** A company's culture is often rooted in traditional processes. Shifts to a digital environment can be viewed with suspicion, especially if employees don't understand the benefits of new technologies. To address this, it is essential to cultivate a culture of innovation, where change is seen as opportunities for growth.
- **Fear of Unemployment:** Automation can create concerns among employees about the security of their jobs. To mitigate this fear, leadership must communicate that the goal of digitalization is to increase efficiency and competitiveness, not to replace the workforce. Promoting reskilling and skills transfer can also help alleviate these concerns.
- **Lack of Skills:** Resistance can be exacerbated by a lack of digital skills among employees. Often, employees can feel intimidated by new technologies. Mentoring programs and ongoing support can help ease the transition and build confidence in using the new tools.
- **Change Management:** Implementing effective change management is crucial for overcoming resistance. This includes clearly communicating the goals of digitalization, involving employees in the change process, and providing ongoing support. Involving team leaders and internal influencers can facilitate employee buy-in and engagement.

DATA SECURITY

Data security becomes a critical concern as businesses embrace digital technologies.

- **Cyber Threats:** Digitalization exposes businesses to cyber risks, such as ransomware attacks, phishing, and data leaks. These attacks can result in serious financial consequences and reputational damage. It is crucial for businesses to implement robust security measures to protect their sensitive information.
- **Regulatory Compliance:** Companies must ensure compliance with data protection regulations, such as the GDPR in Europe or the LGPD in Brazil. Failure to comply can result in significant fines and damage to the company's image. Having a compliance expert or consultant can help navigate these complexities.

- **Investments in Cybersecurity:** Protecting data requires investments in security technologies such as firewalls, intrusion detection systems, encryption, and employee training in security practices. Businesses should consider taking a layered approach to security, combining different solutions to maximize protection.
- **Resilience and Recovery:** In addition to preventing attacks, businesses need to have incident response plans and recovery strategies in place. This includes performing regular backups and developing a business continuity plan. Security incident simulations can prepare staff to respond effectively to a real attack.

CONCLUSION

The challenges of digitalization in the supply chain are complex and multifaceted. Upfront investment, resistance to change, and data security are all issues that companies must proactively address to ensure a successful transition to a digital environment. With a careful and strategic approach, businesses can not only overcome these challenges but also maximize the benefits of digitalization, becoming more resilient and competitive in an ever-evolving market. Overcoming these challenges is essential to ensure that digitalization is not just a passing trend, but rather a core component of the company's long-term strategy.

FINAL CONSIDERATIONS

Digitalization is profoundly transforming the supply chain, bringing a series of benefits that increase operational efficiency and strengthen the competitiveness of companies. Implementing digital technologies not only optimizes processes but also improves organizations' responsiveness to market demands, allowing them to quickly adapt to changing consumer preferences and economic conditions.

The benefits of digitalization include:

- **Increased Efficiency:** Automating repetitive tasks reduces errors and frees up employees to focus on more strategic activities. This translates into faster production cycles and better use of resources.
- **Real-Time Visibility:** Technologies such as IoT and Big Data provide constant monitoring of operations, allowing businesses to identify and address bottlenecks

before they become significant problems. This visibility also improves collaboration between all links in the chain, from suppliers to customers.

- **Informed Decision-Making:** Data analytics allows businesses to make more accurate predictions about demand and performance, resulting in better decisions about production, inventory, and logistics. This not only increases efficiency but also improves the customer experience.

However, the journey towards digitalization is not without its challenges.

Organizations face significant obstacles that need to be managed effectively:

- **Initial Investment:** Implementing digital technologies requires a considerable financial investment, which can be an obstacle for small and medium-sized businesses. It is critical for organizations to carefully evaluate their financing options and seek support, whether through government grants or strategic partnerships.
- **Resistance to Change:** Organizational culture often opposes the adoption of new technologies. It is crucial for companies to invest in change management programs, promoting open communication about the benefits of digitalization and involving employees in the transition process.
- **Data Security:** As businesses become more digital, information security becomes a central concern. Investing in cybersecurity and robust data protection policies is imperative to ensure the integrity of operations and customer trust.

As organizations move towards a more digital future, the ability to integrate emerging technologies such as IoT, Big Data, artificial intelligence, and blockchain will be vital for continued success in supply chain management. The synergy between these technologies can generate innovative solutions that not only improve efficiency but also create new business opportunities.

Therefore, digitalization should be seen not only as a tool, but as an essential strategy for sustainable growth and innovation. Companies that can navigate the challenges of digitalization and take advantage of its opportunities will be better positioned to thrive in an increasingly competitive and dynamic business environment. This adaptation will not only allow for a more agile operation, but also a proactive positioning in the face of future market demands and consumer expectations. The digital journey is thus a fundamental step towards the future, where resilience and adaptability will be the keys to success.