

# Reimagining sourcing and procurement leveraging digital transformation for strategic value creation in the global supply chain

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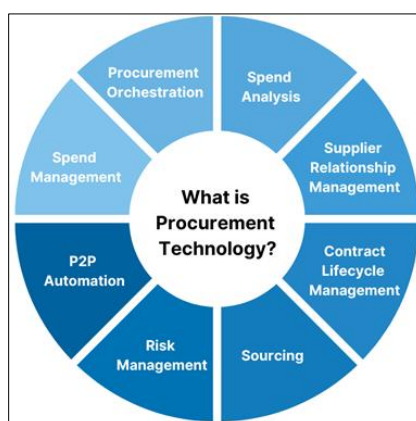
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## Abstract

The relative supply chain environment is rapidly changing due to technological advancement, increasing complexity, and pressure to improve sustainability and supply chain risk. Sourcing and procurement years were recognized as cost-focused processes. However, digital transformation is revolutionizing them. AI, blockchain, IoT, RPA, and cloud options are the technologies that can help organizations move procurement into the realm of a strategic value-creating process. Thus, concerning the focus of this article, it is possible to identify several major digital transformation trends for procurement Increasing operational efficiency, enhancing supplier relationships, managing risks, and achieving sustainable procurement. Using examples of case studies and a comparative analysis of traditional and digital procurement approaches, including observations, this paper illustrates the change in her by digital tools. It also covers issues like organizational resistance, integration issues, and cybersecurity, which are further explained to reduce such problems. At last, this article underscores the management decision-makers focus and the value of digital procurement and sustainable competitive advantage in modern procurement and supply chain management.

**Keywords** Digital transformation; Procurement; Global supply chain; Artificial intelligence (AI); Blockchain; Internet of Things (IoT); Robotic process automation (RPA)

## 1. Introduction



**Figure 1** Procurement Technology

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Especially in today's integrated and highly dynamic global environment, sourcing and procurement activities bear great responsibility for organizational outcomes. Formerly treated as strict cost reduction-oriented activities largely responsible for price negotiations and improving transactional efficiency, today's functions are promoted as strategic tools potentially adding value throughout the supply chain. The promoted change is represented by globalization's growth, customer satisfaction improvement, and the necessity of supply chain adaptation to different risks. While organizations strive to meet these pressures, they have found new possibilities in a modern concept known as digital transformation that has reshaped procurement and created new forms of competitive advantage.

The traditional attitude to procurement is not without its problems. Manually intensive procedures with numerous unconnected structures and reactive decision-making result in multiple issues, such as untimely supplies and a lack of supply chain value addition. Also, the degree of ethics and transparency elevating with sustainability and global environmental, social, and governance (ESG) standards has put unrelieved pressure on the procurement teams. In addition, the recent crisis depicted by COVID-19 and geopolitical tensions has revealed challenges in the current global supply chain networks, demanding flexibility, risk assessment, and strong supplier partnerships.

Digital transformation offers a way to overcome these challenges with a new way of looking at global procurement. AI, blockchain, RPA, and IoT help procurement staffers automate repetitive work, keep abreast of events within supply chains and make informed decisions. For instance, knowledge management can predict demand and the possibility of an interruption, while blockchain offers credibility and efficiency in supplier operations. The use of cloud-based applications creates one focal point for various stakeholders so that silos can be bypassed, hence helping procurement become more integrated and dynamic.

But, the road to digital transformation is not without hiccups. There is a culture to change; new tools have to be implemented along with existing ones, and third organizations have to face cybersecurity threats caused by greater digitization. Despite these challenges, the potential benefits of digital procurement are undeniable benefits encompass better operations, better supplier relations, better risk management, and conformity to sustainability objectives.

This article explores how digital technologies have revolutionized or affected sourcing and procurement. In assessing the observations of the case findings, the analyses of such conclusions, and the subsequent discussions of the traditional and digitally enabled procurement situations, it seeks to provide a conclusive overview of how organizations might enhance their exploitation of Digital Enablers in adding value. The discussion also reveals how firms have been addressing the challenges that often accompany implementation and new trends like autonomous procurement systems, and handed a world that continues to shift toward uncertainty, instability, and globalization, procurement, too, is moving from a support function on the periphery of organizations to the frontline for value creation. DX provides the enablers for this change – the knowledge, frameworks, and technologies – that help organizations design and/or transform supply chains to be resilient, secure, and traceable. From this perspective, this article seeks to provide the knowledge required by industry movers, shakers, procurement specialists, and other stakeholders to harness this new phenomenon and redefine procurement for the future.

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## 2. Digital transformation in procurement an overview

Digital Transformation in Procurement in Sourcing Digital transformation is best described as a fundamental change in how organizations source and manage their suppliers. The fourth one focuses on the transformation of procurement by integrating modern technology and data reliability to enhance the major aspects of procurement. It is not simply about automating what procurement is already doing; it is about fundamentally recasting how supply chain management is done in an organization. Through technology, procurement departments can transform from a low strategic value of a cost-cutting approach to a utility in enhancing innovation and business value.

Traditionally, procurement has been associated with paper-based processes, data-related applications, and weak links with supply chain fluctuations. These limitations frequently caused ineffectiveness, additional decision time, and difficulties entering supplier relations. This model has shifted with the introduction of new technologies where procurement professionals have been provided tools to improve their decision-making processes, support teamwork, and improve organizational performance. Digital transformation touches many aspects of technology, beginning with artificial intelligence (AI), blockchain, robotic process automation (RPA), cloud computing, and the Internet of Things (IoT), which have unique contributions to procurement transformation.

AI and machine learning are a mainstay of current procurement because they facilitate analysis and data processing. Such technologies help procurement teams to plan the suppliers' selection better and to predict disruptions before they happen. For instance, AI-enabled methods can work on existing purchasing data to provide better or more accurate

demand on purchase, which helps do away with excess stock and saves costs. Also, using artificial intelligence in the form of AI chatbots and virtual assistants takes care of daily tasks, including vendor interactions and order placement, thus enabling procurement professionals to work on more value-adding projects.

Another key enabler of procurement’s digital transformation is blockchain, which provides a new level of transparency and trust to supply chains. Blockchain also eliminates the problem of giving different data to different people because it allows for an unalterable record of transactions. This is more notable due to industries where identity and origins are extremely important for consumers, including food, medicine, and elite consumer goods; contract management, along with the minimization of the possibility of disputes, is made easy by blockchain technology as it offers a common access point to all contractual conditions.

Robotic process automation has been realized as a tool with huge potential for improving efficiency in procurement activities. RPA also helps minimize manual operational errors and Enable Shorter Transaction Cycles by automating mostly time-consuming tasks, such as invoicing and vendor registration and entry. This means that time is freed up within the procurement teams’ working practices to focus on tasks of higher value, such as identifying suppliers who should be developed and examining markets. RPA can be built with AI to produce intelligent automation that can adapt to different business environments.

Technology-based procurement solutions are essential to the organization since they help integrate expenditure and cooperation processes. It should also be noted that by adopting these platforms, procurement teams receive real-time visibility of their spending and their suppliers and contract compliance in real-time. They also enhance interaction between internal users and external suppliers to provide a more strategic and innovative procurement model. The dynamics and openness of cloud solutions make them especially important for multinational companies and those that need to develop, implement, and manage multiple intricate supplier networks.

The Internet of Things revolutionizes procurement by offering supply chain information from connected machinery. By connecting IoT sensors to devices to stock, shipment condition, and equipment performance, procurement teams obtain a rich data set to utilize. For example, information acquired from IoT can help forecast future areas of concern in a supply chain to guarantee that some of the problems that hinder the delivery of services shall be well handled.



**Figure 2** A lifecycle flowchart illustrating the key stages of procurement

Nevertheless, the optimistic outlook of such applications fundamentally relies on integrating every facet with careful endeavors into the organizational goals. Digital often refers to embedding these technologies into the already

established frameworks. Organizations must have quality data systems that support the right information to move across various systems and employees. In addition, procurement teams need to upgrade themselves with skills specifically for embracing digital tools, including data analysis and management of risks supplier management, among others.

Digital transformation also now touches on more general sustainability and ethical sourcing topics. As the name goes, digital tools help track real-time factors by providing visibility towards environmental and social performance. For instance, blockchain can analyze the origin of certain raw materials to ensure they are sourced ethically. AI can plan the shipping of these raw materials to decrease carbon footprint. They are more relevant than ever as companies undergo tremendous pressure from regulators, customers, and shareholders to embrace ESG metrics.

However, the shift to digital procurement is not smooth sailing. There is always some resistance from people when change is needed, as most will resist any new change that affects their productivity using a new technology, for instance. Data integration can also be challenging, especially if the company is decentralized or has outdated infrastructure. Moreover, the thus rising digitalization phenomena pose threats in the form of hacking attacks to spill over organizations' data; therefore, organizations have to employ advanced security measures to meet such exigencies.

However, there are great transformative opportunities for procurement through digital transformation, as highlighted below. Organizations adopting digital tools are well placed globally in the ever-complicated and evolving environment. In any case, by reducing costs, increasing the speed of collaboration, and incorporating sustainability, digital procurement becomes the key to providing ILED businesses with more flexibility, robustness, and the ability to generate more value. As technology advances, procurement will again be seen as playing a wider range of enabling functions, which is fundamental to organizational success.

### 3. Impact and observation

This paper explores that purchasing and supply chain management has been heavily impacted by digital transformation, to the extent that some of the key activities that used to be done have been altered in their performance and function. Services have also benefited from procuring technology, and different operations have benefited from enhanced efficiency, risk management, sustainability, and strategic decision-making. This section examines the various effects of digital transformation and brings out observations from real-life digital transformation projects.

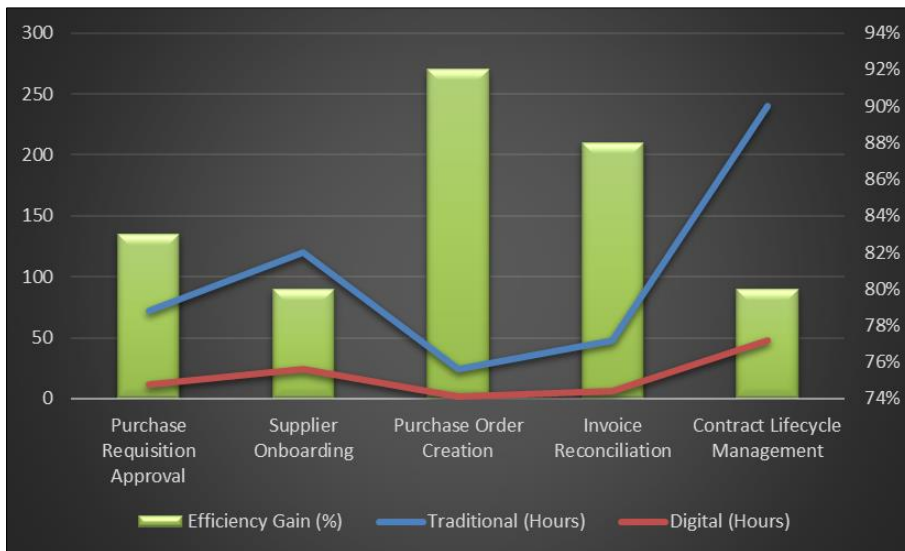


Figure 3 Efficiency Gains in Procurement Processes

#### 3.1. Impact on Operational Efficiency

Another area where the benefits of digital transformation are felt is enhancing operational effectiveness. Some of the multiple procurement processes that were slow undertakings in the past and largely involved manual interference are now being completed with automation and data analysis. For instance, robotic process automation (RPA) automates mundane processes like data entry, invoice processing, and purchase order generation, reducing cycle time and

operational costs. Handle volume transactions at an organizational level with little assistance from human labor to allow focus on business value-added activities.

Artificial intelligence (AI) and machine learning also increase productivity due to the advanced features of AI in predicting analytics. The procurement teams can estimate demand patterns more effectively, thus minimizing overstocking or stockouts. Real-time analytics help in the dynamic management of procurement strategies to allow resource utilization to be at its best. For example, they can use data mining to predict the best time to sign contracts or order goods to minimize possible costs.

### 3.2. Impact on Supplier Relationships

Digital transformation is driving the improvement of organizational relationships between buyers and suppliers. Blockchain is a major tool for building trusting relations and reducing adversities in supplier relations. By creating a duplicated and tamper-proof database of transactions, blockchain guarantees all the participants to receive only accurate data. This capability is more useful in industries such as the pharmaceutical industry, such as supply chain management.

Social collaboration technologies instituted through the cloud have made it easier for suppliers to connect with their B2B clients with real-time information and data. Such platforms also enable collaboration since it is mutual where suppliers and buyers can combine efforts to develop new products and or processes. In assessing the observations of the case findings, the analyses of such conclusions, and the subsequent discussions of the traditional and digitally enabled procurement situations, it seeks to provide a conclusive overview of how organizations might enhance their exploitation of Digital Enablers in adding value. Today's predictive analytics and machine learning models are helping organizations establish potential issues and threats and prevent their prevalence. For instance, when analyzing performance metrics within the supply chain, AI can signal early warnings of disruptions such as delivery delays or quality of service. Such an approach to risk management promotes the continuity of the supply chain operation and limits its financial impact.

IoT sensors are also critical in reducing risks associated with shipments and inventory by offering live data. Information-gathering devices can monitor the status of products during shipping and inform relevant parties when the temperature is too high or low, or the product has been damaged in the shipping process. This level of visibility means that problems are corrected on the spot and quality is improved so that waste is minimized.

### 3.3. Impact on Sustainability and ESG Compliance

**Table 1** Sustainability Metrics Tracking Table

Sustainability Metric	Traditional Tracking	Digital Tracking	Improvement
Carbon Footprint Measurement	Estimated values based on reports	Real-time tracking using IoT sensors	Accurate monitoring with 95% precision
Ethical Sourcing Compliance	Manual supplier audits	Blockchain-based verification	100% transparency across supply chains
Waste Reduction	Periodic waste audits	AI-powered waste analysis tools	30% reduction in waste generation
Water Usage Monitoring	Manual reporting	IoT-enabled water flow tracking	Real-time data with 85% accuracy
Energy Efficiency	Spreadsheet-based tracking	Smart metering and AI analysis	25% reduction in energy consumption
Supplier ESG Score Assessment	Qualitative surveys	Automated scoring via big data	Comprehensive and consistent evaluations
Sustainable Material Sourcing	Limited to supplier disclosures	Blockchain traceability	End-to-end material tracking capability
Recycling Rate	Annual reports	Continuous monitoring via IoT	20% improvement in recycling efficiency

Modernization has positively correlated with procurement sus, trainability, and ESG strategies. There is an increase in transparency in supply chains where applications like blockchain & IoT assist in establishing the ethical origins of materials and checking on carbon footprint. For example, blockchain marks that raw materials obtained for production were sourced from compliant labor suppliers, while IoT gadgets identify power usage and emissions across the supply chain.

Therefore, analytics, with the help of artificial intelligence, enhance logistics and transportation efficiency and decrease fuel burn rate and emissions. Also, many digital platforms are designed to make the ESG metrics reporting process easier, meet legal obligations, and increase the level of disclosure. The organizations that tap into these technologies are cutting their environmental footprints and creating brand influence and customer trust.

### **3.4. Key Observations**

These results indicate that digital transformation in procurement does not have identical effects between different industries/provinces. This suggests that organizations in industries that call for compliance and control implement digital tools with greater passion, especially those operating in sensitive sectors like the healthcare and aerospace industries. However, industries where compliance is less concerned may be slow to adopt despite the advantages of digital procurement being identifiable across sectors.

The second main conclusion is that organizational culture strongly influences digital business transformation. A positive correlation of results is established between corporations that encourage innovations and employee training activities. Thus, clerical workers' negative attitude to change resulting from misunderstanding or apprehension of job loss can become an obstacle. These worries, therefore, must buttressed by communication and upskilling efforts that aim to get away from the digital transition-averse culture.

The next internal factors likely to impact digital transformation depend on the size and scale of an organization. In many respects, large multinationals, wealthy and possessing vast organizational capacity, can often afford to introduce new technologies whilst successfully incorporating them into processes. SMEs can also experience financial and technical barriers while implementing strategies and solutions, and cloud-based approaches and modularity have been thus narrowed significantly.

### **3.5. Case Study Insights**

Such success stories help explain how digital procurement efficiently changes supply. For instance, a large international retailer used AI-based analysis to improve its choice of suppliers. Through effective past data analysis and answering all questions about the market, the company achieved the optimum result of decreasing procurement costs by 15% and increasing the suppliers' quality indicators. In another instance, a major pharmaceutical company used blockchain in its supply chain to improve track and trace capability, meet various regulatory rules, and reduce the chance of fake drugs being sold.

In another case, a manufacturing firm employed IoT sensors to check the state of raw materials in transit. Reducing the spoilage rate through this initiative caused 25 percent thriftiness, cutting costs while increasing sustainability. These case studies suggest the effectiveness of the various digital tools that could be used in the different fields to produce tangible value.

### **3.6. Challenges and Limitations**

However, digital procurement is faced with the following challenges. Data integration is a challenge whose tendency increases with the complexity of an organization's IT architecture, especially when it has several systems inherited from the pre-internet era. The third threat that affects procurement is cybersecurity risks since the high levels of digitization increase the chances of procurement data being hacked.

A third drawback comes from the magnitude required to apply tools, particularly the costs, which organizations do not have large reserves of cash for. However, this is based on data decisions and places robust data-literate protocols at the heart of enhancing accuracy and credibility. Such challenges are meeting the need for a coherent strategy to continue growing investments in technologies and innovations, reducing risks, and ensuring an organization's readiness for the changes that may be needed again.

### 3.7. Conclusion of Observations

Of course, digital disruption has been well received by procurement insofar as the potential optimization of processes and the creation of new, better competencies. Listening to early users is informative, and one surmises that the advantages unmistakably swamp the difficulties. However, it is clear that only if more encompassing strategies are pursued in the implementation projects. Foreseeing the potential for future development in procurement is rather a perspective because technological growth is unavoidable. This creates a premise for invention, which supplies extra potential for earning value and enhancing supply chain resilience globally.

Digital transformation is not merely an issue of installing new technological tools and systems into a company; it is a fundamental transformative process with the ambition of re-positioning procurement within the newly emerging existing business environment. By adopting this new change, organizations will stand better in the new competitive world economy. The observations and current effects extracted from the research are the guidelines for achieving strategic and optimum digital procurement.

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## 4. Results and discussion

Digital transformation outcomes in procurement demonstrate a drastic change in how organizations economically engage within the world's supply chain system. Integrating digital tools and technologies has given tangible and realistic improvement to performance and ways to gain efficiency, cut costs, lessen risks, and match the engagement and virtual implementation of the Web resources and fluids in the business's long-term vision and mission. However, this one includes challenges organizations face regarding developments in digital procurement. This section integrates particular concepts from case studies, their consequences, and associated themes associated with broader procurement patterns.

The results have shown that organizations adopting digital technologies have benefitted from improved organizational efficiency. For instance, firms that adopted RPA solutions for automation notice a drastic cut in working hours that would ordinarily take to complete monotonous functions such as generating purchase orders, accounting reconciliation of invoices, or registering vendors. Most of these activities can be easily automated, and the times freed can be allocated for more important activities such as supplier management and market analysis. In one example, one large multinational manufacturing firm could slash its procurement cycle time by 30%, enhancing its capabilities to meet market needs and fluctuations. These improvements impact cost reductions and increase competitiveness among the economy's goods-producing industries.

Another important outcome associated with digital transformation is enhancing decision-making functions, which is another important outcome produced by digital transformation. Telecommunication companies have introduced innovation through AI and machine learning, allowing procurement professionals to make informed decisions based on huge volumes of data. Examples include predictive analytics, which helps the organization make better forecasts that lead to ideal stock control and reduce spoilage. It is especially useful in environments with characteristic demand swings, such as retail and consumer products. In addition, tools enhanced by artificial intelligence help measure suppliers' performance, and, therefore, the procurement process is aligned with organizational goals.

The use of technology has also improved risk management in a very big way. The application of predictive analytics and IoT-based monitoring helps an organization to give them insight into what is going on in the supply chain and when there is a likelihood of an incident of disruption. For example, IoT sensors can be used to track the state and quality of goods during the transportation process so that perishable products remain fresh during the transportation process. Of the companies that adopted IoT, one pharmaceutical company used it to monitor the temperature and humidity of its products during transportation and cut spoilage levels by 20%. Reducing risks means that there will be no interruption in the operations of supply chain organizations, saving them from loss.

It has been noteworthy that digital transformation plays a role in delivering organizational value regarding sustainability and compliance with ESG standards. Blockchain technology is still a strong tool for ensuring the supply chain provides legitimate material sources and transparency. One example of blockchain application was described in a fashion retailer, who applied blockchain to track the origin of cotton supply with adherence to some fair labor practices and environmental responsibility. Likewise, AI optimization tools have enabled organizations to reduce emissions by automating the shortest path to travel and energy use in business technology processes, such as transportation. Notably, these activities meet the demands of various legislation and contribute to establishing improved brand identity and faithful clientele.

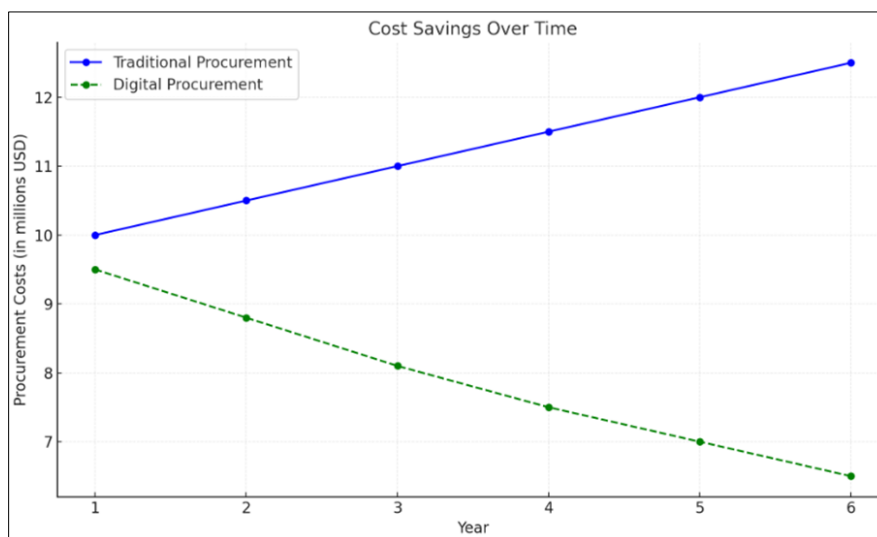
Nevertheless, the observed results are optimistic, which points to the fact that there are still obstacles to digital transformation. Hence, integration with new digital apps is another problem with the information system. Most organizations, particularly those with large and intricate supply chain systems, cannot get integrated data, which is essential to the success of the businesses. System upgrades must be done systematically to overcome this challenge, with the best systems interoperability and scalability practices in mind. Further, organizations should spend money on effective instrumentation to ensure the security of procurement data from hacker attacks. The unfolding digital supply chain environment opens up new risks that, once leveraged, can cause significant problems.

Another barrier to digital transformation is cultural resistance since most people resist change out of their comfort zone. Some may be against automation technologies because they feel it will replace most procurement teams or complicate the process. To address this type of resistance, change management considerations focus on providing the 'why' of using tools and offering training to increase the 'confidence' of users. In most successful implementations, there has been customer involvement and commitment to the objectives of the transformation.

The discussion of these results focuses on the over-estimated importance of a phased and adaptive approach to change. Those organizations that got positive results as their returns also frequently use pilot projects to verify the efficiency and effectiveness of particular technologies. These pilots allow organizations to capture the tough lessons and optimize their digital tool usage plans before broad adoption across the enterprise. For example, one worldwide logistics firm tested an AI demand forecasting system in one region and then spread it across its distribution. These two TR strategies were able to employ a phased approach that reduced interruptions while at the same time enhancing the returns on investment.

When analyzing the results of efforts on digitalization in different industries, some peculiarities can be distinguished. High-tech sectors, such as the aerospace and healthcare industries, will likely adopt digital tools more quickly because they are a strict must under high-risk legal rules and regulations. On the other hand, less demanding industries, like small-scale retail businesses, may implement these technologies slowly because of financial naivety or perceived technical depth. Nevertheless, the advantages of digital procurement of goods and services apply to any company, which points to the fact that even a company with limited resources can create much value by focusing on the technologies that would be valuable in its particular case.

Therefore, the broader lessons learned about digital transformation in procurement do not belong to individual companies only. Digital tools are redesigning the international supply chain environment by encouraging transparency, cooperation, and effectiveness. By implementing information technologies, suppliers and buyers can form new and enhanced strategic supplier-buyer relationships that focus on exchanging value and knowledge. For example, cloud collaboration tools and platforms allow suppliers and buyers to share the demand and supply data and manufacturing timelines, improving coordination and certainty in the use of the resources. Moving towards collaborative procurement strategies will bring positive changes to the providers and all the link players within the supply chain network, leading to a more robust business environment.



**Figure 4** Graph comparing the cost savings achieved by organizations before and after implementing digital procurement tools



From here on, the prospect of digital procurement might be affected by the following factors Robotized procurement solutions based on AI and machine learning are the future of advanced digital procurement strategies. They can even include capabilities for deciding on sources, negotiating contracts, and handling supplier relations independently, thus increasing efficiency and reducing error rates. Moreover, continuous improvements in the blockchain and IoT will likely improve supply chain accountability by fulfilling safety, traceability, and responsibility for growing sustainability and ethical purchasing needs.

The discussion concludes that digital transformation is not just an upgrade of technology but a competitive necessity for organizations that want to survive a challenging global environment. It can be seen that by adopting the use of technology and, at the same time, solving the challenges associated with the use of technology, the procurement function can open new avenues of creating capabilities of value offering to the organization and thus can carve a place for itself as a strategic asset to the organization. A review of what has been accomplished these days gives us an outline of how future progress should look and shows that, as of the present, the strategy for digital procurement transformation should be complex and flexible.

#### **4.1. Model comparison**

Integrating digital technologies in procurement has given rise to two distinct operation models This framework distinguishes traditional and digitally enabled procurement. These models include differences in the process, tools, and results and represent the development of procurement activities regarding technological and market growth. This paper compares the two models' characteristics, advantages, and disadvantages concerning digital technologies' role in transformation.

A traditional state of procurement works in a conventional and tactical approach in which many processes are tedious and mostly done by hand. Procurement teams use simple tools like Word documents, spreadsheets, and e-mail for sourcing, supplier, and contract management. Many decisions are made after the fact and influenced by past events and managers' opinions, which can prove very costly. For example, the absence of real-time supplier metrics involving their performance and inventory again results in overpurchase of stock or stockouts that are detrimental to cost and flexibility. It also results in slanted and programmed system arrangement and usage that restricts the fluidity of inter- and intra-organizational process interaction with external partners.

Digital procurement, on the other hand, uses technology tools like Artificial intelligence, Blockchain, Robotic process automation, and cloud amongst others. This model is based on large quantities of data, real-time information processing, and automated processing, allowing procurement teams to operate more effectively and efficiently. The sensing AI in handling analytics can help predict customer demand, choose a supplier, and look for opportunities to cut costs, making procurement even more valuable. Blockchain technology offers accountability and reliance by indexing all the performable and signed transactions and contracts simultaneously available to those who can view them. These capabilities allow organizations to improve supplier relations, risks, and sustainability goals.

The efficiency of the two models is a key characteristic that deserves comparison. Traditional buying is always slower and less accurate as it includes one or more intermediate links. Routine transactions such as creating purchase orders, reconciling invoices, and entering data are time-consuming activities that may hither focus on core business activities. Specifically, in digitally enabled procurement, these tasks are carried out through RPA, thus shortening cycle times and easing human effort toward higher-value work. For instance, an organization implementing RPA for invoice processing data said it cut processing time in half, freeing up its procurement department to work on supplier development and contract management.

They also differ in the levels of visibility queue\_exists is not available at all in any of the binary versions of the models. Conventional supply chains have restricted insight into supply chain performance since the data is siloed in various applications and structures. Such an environment hampers supplier evaluation, inventory tracking, or the identification of potential disruption. Digitally enabled procurement helps overcome this limitation because it consolidates information from multiple sources into a single interface, and that information is up to date regarding the supply chain. For example, IoT devices such as sensors and logistics conditions/parameters may track shipments. AI analytic tools allow for early indications of risk to a supply chain and immediate intervention.

Collaboration within the procurement process also differs in implementation between the two models. This limits traditional procurement and characterizes siloing both internally and externally. Inadequate integrated effort can result

in conflict of interest, overlapping work, and foundering of the two. Engaging procurement in digital strategies ensures that through a cloud-based workforce management platform that helps various stakeholders exchange information, set goals and timing, and synchronize their deals. These platforms allow collaborative decision-making and creativity because suppliers and buyers can develop strategies and create solutions together.

Digital procurement also has a greater advantage over conventional practices in risk management. In the traditional risk management model, plans are generally reactive, that is, targeted at managing disruptions after they have happened. Risk profiling is not often done by these supply chain tools, making it hard to assess future risks and safeguard against them. The other advantage of digitally enabled procurement is that it allows risk management through predictive analytics, IoT monitoring, and blockchain to avoid escalations. For instance, an automotive manufacturer using predictive analytics in procurement is lauded for a serious decrease in disruptions in supply chains, thus laundering more continuum.

Sustainability and compliance are rapidly gaining relevance in procurement as organizations are pressured to meet environmental, social, and governance (ESG) objectives. Traditional procurement still does not meet these demands since the approach lacks visibility and traceability features. Digitally enabled procurement, on the other hand, offers the enablers that need to track and report on sustainability KPIs. For instance, in the application of the blockchain system, every change is recorded, and the origin of every material is verified as coming from a legal source. Transport logistics can be improved by using AI to minimize emissions, while firms can report environmental performance metrics in the form of ESG scores through cloud reporting.

However, as with any procurement strategy enabled by and integrated with digital technology, it is not without problems. Especially when people switch from offline to online, investing in instruments, various tools, and personnel training is necessary. One challenge that organizations must overcome is culture change since employees accustomed to manual and rigid work may not easily accept changes brought about by information systems. Further, integrating IT and digital tools with conventional systems can be a problem and take considerable time. Therefore, it involves a lot of planning. Managing risks is a big issue, and digitization in the field of procurement brings about the probability of cybersecurity threats to acquisition-related data.

The advantages of digitally enabled procurement outweigh its disadvantages in the long run. Business organizations that have embraced this model speak of increased efficiency, lower costs, and increased strategic value. For instance, a multinational retailer that adopted AI in demand forecasting was able to cut down unnecessary inventory costs by 20%, and a pharmaceutical company that adopted blockchain technology was guaranteed zero non-compliance with regulation.

**Table 2** Traditional vs. Digital Procurement

Feature	Traditional Procurement	Digitally Enabled Procurement
Process Automation	Low	High
Data Integration	Siloed	Unified
Risk Management	Reactive	Predictive
Decision-Making	Judgment-Based	Data-Driven

## 5. Conclusion

Procurement digitalization entails a major transformation factor in organizations' procurement solutions to enhance sourcing strategies, supplier management, and supply chain. The advancement of technologies like AI, blockchain, RPA, and IoT has resulted in changes that transform procurement into an improved process in terms of efficiency, visibility, risks, and sustainability. While dealing with all these risks and uncertainties ensnarling the global supply chain, digital technologies are the only viable way to preserve business competitiveness and sustainability.

Reflected between the current and digitally enabled procurement showcases the extent of benefits that digital transformation entails. The first two models' decision-making is unsuccessful due to their traditional practices of procurement, which include direct purchases, negotiated purchases, and competitive bidding, and are marked by communicative, manual, and disintegrated data flows. These models' absence of real-time information, teamwork, and foresight causes poor performance, higher costs, and inefficient improvement. In contrast, digitally enabled

procurement utilizes data analysis, technology, and short-term visibility to improve processes and outcomes while minimizing costs. Demand forecasting and risk management help organizations reduce the likelihood of supply chain disruptions. In contrast, advanced technologies help organizations make better supply chain vendor choices and optimize their value from those partnerships.

Another important component of contemporary procurement is risk management, which is promoted through the efficient use of new technologies. Such applications as demand forecasting and disruption risk mitigation, the real-time assessment of supply chain conditions, and blockchain for transaction authenticity enable the creation of more effective and trustworthy supply chains. This effective model of risk management not only reduces disturbances but also keeps the business on high alert regarding changes in the market.

Legal compliance and sustainability have emerged as critical factors within global supply chains, and technology supplies significant support here. By adopting blockchain and IoT, various organizations can attest to the origin of multiple materials and monitor their entry onto the market, as well as emissions comparable to audits and compliance with ESG standards. With increasing stringency of sustainable standards, digital is embraced. It can help these business organizations meet sustainable standards, enabling them to create a better corporate image and a strong customer loyalty base.

However, as we have seen, so many benefits come with shifting to a digitally enabled procurement model, and the journey is not a walk in the park. Some challenges organizations face include data integration, cybersecurity risks, and cultural resistance. The arrival of digital tools is a prospect calling for considerable material and personnel expenses. Moreover, changes will likely span the value chain, so organizations must be ready to overwork and train procurement teams to take advantage of new technologies.

Last, developing the procurement profession only in the context of evolving technologies is possible. The increasing spread of novel technologies will always continue to occur, which means that procurement of technologies will continue to be an unceasing process, as the paragraphs above suggest, that will enable new developments in various procurement aspects of technologies, leading to potential increment in procurement values added, cost control and advantages. Companies and businesses that have embarked on digital business transformation today are improving customer operations and preparing for future competition in the complex and competitive global environment. Some of the findings of this work encourage the notion that the transition to a digitally enabled procurement model is more than just a technology change but a business imperative that shall determine organizations' success and sustainability in future years.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

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