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Strategic Advantages and Economic Efficiency of Transitioning from Intermediary Procurement to Direct Contracts with Manufacturers in The Supply System of Industrial Enterprises

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Abstract

Against the backdrop of increasing turbulence in global markets and chronic disruptions in supply chains, industrial companies are compelled to rethink established, multi-stage procurement schemes. The aim of the study is to systematize and critically evaluate the strategic advantages and economic effectiveness of direct communications with manufacturers within the supply system of industrial enterprises, as well as to identify key technological and organizational determinants that ensure the success of such a transition. Methodologically, the research relies on a mixed approach: a systematic review of academic publications and industry analytics is complemented by an in-depth case analysis of the company George Biosystems. The results show that disintermediation, accelerated by digital transformation (primarily through the implementation of IoT and big data analytics), delivers reductions in total costs (by 10–40%), increases in operating margins (by 7–14%), strengthening of supply chain resilience, and enhancement of their transparency. The key transmission mechanism is the reduction of transaction costs and information asymmetry. It is concluded that the transition to direct contracts is strategically justified and economically feasible for building competitive advantages; however, the magnitude of the effect is determined by the company's level of technological readiness and the presence of comprehensive risk management mechanisms. The material will be of interest to heads of supply and logistics, procurement directors, as well as researchers focused on issues of operational efficiency and strategic sourcing.

Keywords: disintermediation, direct procurement, supply chain management, economic efficiency, transaction costs, digital transformation, supply chain resilience, risk management, industrial supply, case study.

Introduction

The contemporary global economic environment is marked by an unprecedented degree of uncertainty. Geopolitical turbulence, climate extremes, fluctuations in macroeconomic parameters, and the escalation of cyber threats have become persistent destabilizing factors undermining the resilience of transnational supply chains [1, 2]. According to McKinsey estimates, in 2024 disruptions lasting more than one month occur on average once every 3,7 years and can reduce returns by up to 45% of cumulative annual profit over a decade [14, 15]. Against this backdrop, classical procurement models that rely on multi-tier intermediary structures exhibit structural fragility, manifested in rising costs, deteriorating transparency, and weakened controllability of key operations. Industry reviews by leading consulting firms, including Deloitte and EY, converge on the conclusion that strengthening resilience and optimizing costs are of paramount importance for supply chain leaders [3-5]. This creates an imperative to rethink established organizational paradigms and to seek more flexible and effective approaches to constructing the procurement function.

The strategy of disintermediation — removing intermediaries from supply pathways — is not new in concept, yet its practical relevance has increased sharply with digital transformation. Despite a rich body of research examining individual aspects of disintermediation and digitalization, a methodological gap persists: there are no studies that holistically link transaction cost theory with the applied capabilities of modern digital tools (IoT, Big Data Analytics) and empirically validate this linkage through quantitatively observable outcomes of real industrial firms, particularly those operating under conditions of extreme market stress.

The aim of the study is to systematize and critically assess the strategic advantages and economic performance of direct communications with manufacturers within industrial procurement systems, as well as to identify the key technological and organizational determinants that ensure the success of such a transition.

The hypothesis advanced is as follows: the integration of digital monitoring and analytics tools (Data-Driven Logistics) constitutes a necessary condition for effective disintermediation in industrial supply chains, because it radically reduces transaction costs and mitigates information asymmetry, thereby enabling simultaneous reduction of direct expenditures and enhancement of operational resilience.

The scientific novelty of the work lies in establishing a direct relationship between the degree of digitalization of logistics-procurement processes and the magnitude of the economic gains from disintermediation in an industrial enterprise's supply chain. The study contributes to the theory and practice of supply chain management by proposing an empirically validated model for transitioning to direct procurement as a tool for enhancing competitiveness in an unstable external environment.

Materials and methods

The present study relies on a qualitative research paradigm employing a mixed design, which ensures methodological triangulation and enhances the credibility of interpretations. The methodological architecture of the study comprises three mutually complementary components.

First, a systematic literature review was conducted, encompassing publications in peer-reviewed journals indexed in Scopus and Web of Science, as well as analytical reports from leading consulting firms (McKinsey, Deloitte, EY, Gartner). This stage made it possible to construct the theoretical framework, clarify key categories (disintermediation, supply chain resilience, digital transformation), and situate the research problem within the context of current global trends.

Second, the central analytical foundation is a theoretical analysis in the logic of Transaction Cost Economics (TCE). Applying TCE makes it possible to rigorously justify the choice between alternative forms of organizing transactions (market arrangements involving intermediaries and hierarchical arrangements via direct contracts) and to assess the impact of digital technologies on the structure and levels of the corresponding costs. In the field of supply chain management, this approach is established and productive for analyzing the economic performance of organizational transformations.

Third, the empirical basis is an instrumental case study. The object of analysis is the company George Biosystems, where a comprehensive program was implemented to transition to direct procurement and to digitize logistics. The case study method was chosen because it provides a deep, context-rich understanding of real business processes, their determinants, implementation mechanisms, and measurable effects. The analysis covered the materials provided under the Data-Driven Logistics 360° methodology and quantitative indicators capturing the economic results of the implemented changes.

The source base of the study is structured into two cores. First is the academic corpus: publications in leading peer-reviewed journals that examine the phenomenon of disintermediation in supply chains, the influence of digital technologies (IoT, Big Data, Blockchain) on operational efficiency, and the architecture of sustainable supply chain management. This block sets the theoretical and methodological framework and the conceptual coordinates of the work. Second is the set of analytical industry reports, namely materials from McKinsey, Deloitte, EY, and Gartner that contain up-to-date statistical data on market trends, key vulnerabilities (frequency of disruptions, shortage of qualified personnel), and strategic business priorities (resilience, digitalization). These documents provide the empirical

actualization of the study and make it possible to verify its findings in the context of contemporary management practice.

Results and discussion

The shift from purchasing through intermediaries to directly contracting with manufacturers entails a profound transformation of the governance structure of the entire supply chain. The economic rationality of such a move is revealed through the lens of Transaction Cost Economics. In its logic, any transaction gives rise to associated costs: search and verification of information, the bargaining process, formalization of terms, as well as monitoring of compliance with agreements and enforcement [9]. The institution of intermediation arises precisely as a response to these costs: specialized actors, by accumulating scale and experience, are able to partially reduce them.

Nevertheless, the choice of an intermediary form of organizing exchange is not universally optimal. TCE distinguishes three defining parameters that guide the decision on the preferred governance structure: asset specificity, uncertainty, and frequency.

Asset specificity is associated with investments in resources — material, human, technological — whose value drops sharply outside a particular transaction. With high specificity (for example, with deep integration of IT systems with a manufacturer counterparty) the risk of opportunism increases, shifting the optimum in favor of direct long-term contracts that provide better protection of investments.

Uncertainty, manifesting itself in fluctuations in demand and prices as well as in supply instability, complicates the drafting of comprehensive contracts and increases monitoring costs. Under the conditions of heightened market turbulence characteristic of the contemporary environment, interaction through intermediaries becomes less predictable, prompting firms to establish closer and more controllable ties directly with manufacturers [1].

Finally, the frequency of transactions exerts a critical influence on the choice of interaction architecture. In the case of regular and large-scale purchases, the fixed costs of establishing and maintaining direct contractual relationships are amortized over a greater number of operations, which renders such a model economically justified.

A key inflection in the current economic paradigm is that digital transformation directly alters the level of transaction costs, shifting the calculative advantages toward disintermediation. What previously required excessive expenditures—screening and matching a multitude of potential manufacturers, negotiation cycles, monitoring compliance with contractual obligations—is now radically cheaper thanks to digital solutions. Electronic procurement platforms sharply reduce the cost of searching for counterparties, supplier relationship management (SRM) systems automate communication and document flow, and the Internet of Things (IoT) in combination with big data analytics (BDA) provides relatively low-cost and reliable real-time monitoring. As a result, digitalization not only optimizes existing procedures but restructures the very economic logic of processes, making disintermediation widely feasible and economically rational for a broad spectrum of industrial firms.

Digital technologies act as an accelerator that removes classical obstacles to direct procurement—above all, information asymmetry and a lack of transparency. Below are the key technological elements and the nature of their effects.

Internet of Things and real-time monitoring: equipping vehicles and cargo with sensors (GPS trackers, fuel sensors, thermologgers) yields a holistic, objective view of logistics operations. This makes it possible not only to record the location and condition of shipments, but also to manage resource consumption, prevent theft and misuse of equipment, and optimize routing. This level of transparency, which Gartner describes as Ambient Invisible Intelligence and Autonomous Data Collection, was previously unattainable and appears among the key technological trends for 2025 [18].

Big Data Analytics. Information streams coming from IoT sensors, ERP platforms, and external datasets have limited standalone value until they are interpreted by BDA tools. These methods convert disparate observations into operationally actionable knowledge: they enable delivery time forecasting, quantify counterparties' reliability through objective indicators, and identify latent dependencies and bottlenecks in logistics circuits [9]. The institutionalization of BDA shifts supply chain management from a reactive paradigm—responding post hoc to disruptions—to a proactive one, where prevention is achieved through predictive models;

thereby, it forms an architecture of resilient, self-adapting supply chains [16].

Blockchain. Despite a limited degree of mass adoption, the technology's potential for disintermediation remains fundamentally significant. By maintaining a unified, immutable, and transparent ledger of transactions, blockchain reduces verification and audit costs, enhances interfirm trust, and automates the fulfillment of contractual obligations via smart contracts. This is critical in multilayered, structurally complex chains where guaranteed traceability and verified product provenance are required [6].

The systematized impact of the above technological solutions on overcoming disintermediation barriers is summarized in Table 1.

Table 1. *The impact of digital technologies on overcoming disintermediation barriers (compiled by the author based on [7, 9, 18]).*

Traditional barrier	Digital technology catalyst	Mechanism of action
High search and supplier evaluation costs	E-procurement platforms, BDA	Automation of search, aggregation of supplier data, predictive reliability assessment based on historical data.
Difficulty of monitoring contract performance	IoT (GPS, sensors), cloud platforms	Provision of objective real-time data on location, cargo condition, and deadline compliance.
Information asymmetry and lack of trust	Blockchain, shared information platforms	Creation of a unified, transparent, and immutable data source for all participants, reducing fraud risks.
Logistics inefficiency and high transportation costs	BDA (route optimization), IoT (fuel control)	Analysis of traffic and historical data to build optimal routes, prevention of theft and inefficient resource use.
Difficulty of managing relationships with numerous suppliers	SRM systems	Centralization of communications, automation of document flow, maintenance of a single database covering all interactions.

A schematic conceptual model demonstrating how digital transformation enables the transition to direct procurement is presented in Fig. 1.

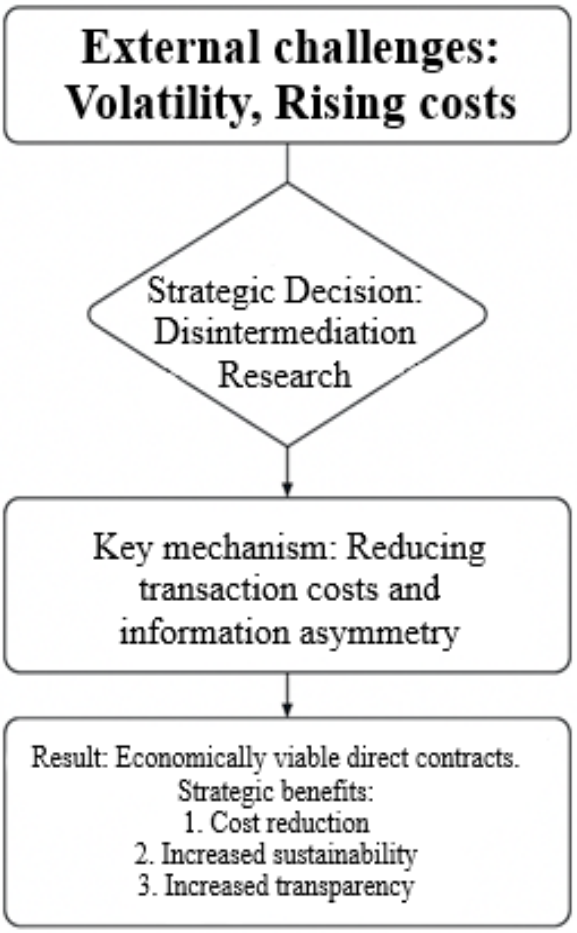

Fig. 1. Conceptual model of technologically supported disintermediation (compiled by the author based on [10, 11, 19]).

The transition to direct contracts, enabled by digital technologies, creates advantages at two interrelated levels — economic and strategic.

Economic effectiveness manifests across several key dimensions. First, the intermediary margin is eliminated, which directly reduces procurement prices. Next, the turnover of working capital improves: using the example of beef shipments from Australia to China, disintermediation reduced storage time from 33 to 20 days and accelerated the full working capital cycle from 73 to 60 days; this yielded interest savings on borrowed funds equivalent to 20% of the annual cost of financing [6]. Finally, operating costs decrease — both logistics costs (through route optimization and controllability of resources) and loss-related costs (prevention of theft and cargo damage).

Strategic effects often prove even more significant over the long term. Enhanced control and transparency are achieved through direct interaction with the producer and end-to-end digital monitoring, which ensures manageability of the entire supply chain, rapid response to changes, quality control at each stage, and traceability from raw materials to the finished product. Increased resilience is ensured by a diversified portfolio of direct contracts with producers from different regions and full visibility of material flows. Such an architecture is more robust than dependence on one or several intermediaries that can become a bottleneck [1, 14]. Direct ties foster closer collaboration and joint planning, which is a necessary condition for adaptive and flexible supply networks [5]. In parallel, quality and innovativeness improve: direct dialogue with producers opens opportunities for co-development, tailoring raw materials to specific requirements, and deeper quality control — outcomes that are difficult to achieve under intermediated interaction.

A schematic comparison of traditional and disintermediated supply chain configurations is presented in Fig. 2.

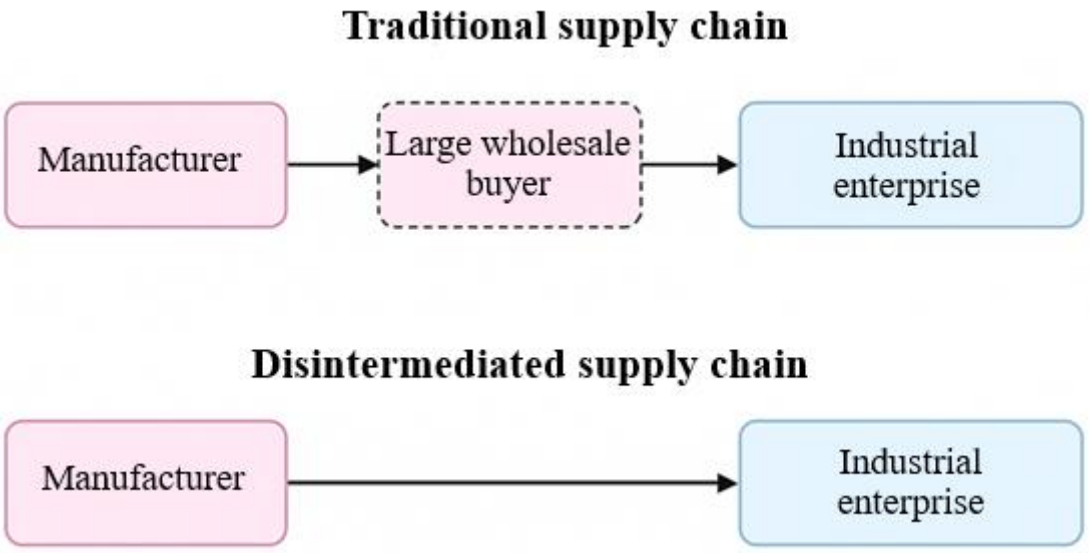

Fig. 2. Comparative analysis of supply chain structures (compiled by the author based on [8, 13, 20]).

The analysis of the practice of the company George Biosystems serves as an empirical verification of the theoretical propositions and demonstrates both the feasibility and the effectiveness of the chosen strategy. The organization deployed an integral Data-Driven Logistics 360° loop, logically structured into three sequential stages.

At the initial stage, a comprehensive audit was conducted of the supplier base, the condition of the vehicle fleet, and warehouse operations. The subject of the analysis included procurement prices, route configurations, and resource utilization coefficients. The result was the identification of key hotspots of inefficiency driven by dependence on a narrow circle of intermediaries and a deficit of managerial control over logistics.

Based on the audit, bottlenecks were mapped: inflated raw material prices due to intermediary markups, opacity of transport cost items, instances of fuel theft, and unauthorized use of company vehicles. A prioritized agenda was formulated to eliminate the violations, oriented toward rapid and maximal economic effect [10, 19].

Implementation of the solutions comprised two synchronous measures. The technological spectrum entailed the introduction of digital monitoring: GPS trackers, fuel consumption sensors, and thermologgers were installed on the freight fleet, and GPS and fuel trackers were installed on managers' passenger cars. This ensured completeness of observability and accountability of logistics operations. The organizational measure targeted procurement disintermediation: a targeted search for alternative counterparties was carried out (more than 20 new partners were identified) and direct contracts were concluded with manufacturers of raw materials and supplies.

The results of the strategy implementation were substantial and measurable. Due to competition among suppliers and the exclusion of intermediaries, prices for raw materials, packaging, and supplies decreased by 10–40%, which directly translated into financial outcomes: monthly operating profit increased by 7–14%. Full control over the vehicle fleet eliminated fuel theft and reduced maintenance costs. The reliability and predictability of supply chains increased, minimizing the risks of disruptions and shortages. Process transparency strengthened the company's bargaining position in the market [14-17]. Fig. 3 visualizes the impact of the introduction of digital monitoring on logistics operating costs.

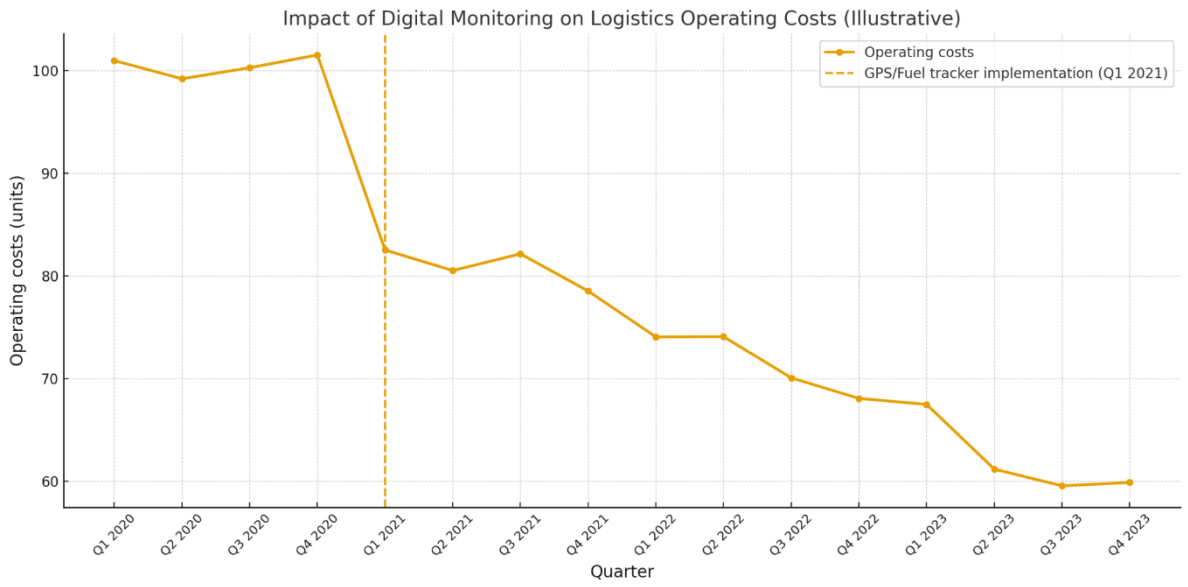

Fig. 3. The impact of the introduction of digital monitoring on operational costs of logistics (compiled by the author based on [1-5; 14, 15, 17]).

A point of particular emphasis is that the company succeeded in maintaining continuity of deliveries and stability of operational activity. This outcome extends the assessment beyond strictly economic indicators. In crisis contexts, traditional supply chains that lack transparency become a source of large-scale vulnerabilities: intermediaries may cease operations, turn into informational black boxes, or manipulate prices. The architecture deployed in George Biosystems, combining direct ties with manufacturers and end to end digital observability of logistics, effectively became an instrument for ensuring geopolitical resilience. The capability to track the movement of every vehicle in real time, maintain direct communication with manufacturers, and rapidly reconfigure routing transformed from a competitive advantage into a strategic condition for business survival [12, 13].

At the same time, the transition to direct procurement is accompanied by a substantial set of risks and constraints that require anticipatory management.

Increased managerial complexity: The company assumes roles previously delegated to intermediaries, including management of multiple contracts, organization of international logistics, customs support, and distributed quality control. This presupposes expansion of administrative capacities and the buildup of domain specific competencies.

Need for new competencies: Effective operation of a disintermediated supply chain is impossible without specialists in data analytics, supplier relationship management, international law, and logistics. Notably, according to McKinsey, 90% of supply chain leaders indicate a shortage of necessary digital skills within their organizations.

Risk of supplier dependence (hold up problem): By forming close cooperative ties and investing in specific assets, for example integrated IT solutions, the company may find itself dependent on a limited circle of manufacturers who can use this asymmetry to impose terms.

High initial investments: Building the required IT infrastructure (ERP, SRM, platforms for IoT and BDA) entails significant capital expenditures that become a serious barrier, especially for small and medium sized enterprises.

Conclusion

The conducted study demonstrates that abandoning intermediary procurement schemes in favor of direct contracts with manufacturers serves as an effective lever for enhancing the economic efficiency and operational resilience of industrial companies amid contemporary turbulence. The integrated findings of the work are concentrated in the following propositions.

First, the theoretical justification of the economic rationality of disintermediation is rooted in the logic of Transaction Cost Theory. Digital transformation—above all the deployment of IoT and big data analytics—acts as

a systemic driver that sharply reduces the costs of searching for counterparties, negotiating, and monitoring performance, thereby shifting the balance of benefits toward direct contractual relationships.

Second, the authorial hypothesis regarding the relationship between the level of digitalization and the gains from disintermediation received convincing empirical verification based on the George Biosystems case. The application of the Data-Driven Logistics 360° methodology delivered not only notable financial effects—reducing total costs by 10–40% while simultaneously increasing operating profit by 7–14%—but also an unprecedented level of business resilience to force majeure geopolitical shocks.

The practical value of the study lies in the development of a structured model for transitioning to direct procurement, covering the stages of diagnosis, prioritization, and implementation, as well as in presenting a risk matrix and strategies for their mitigation. These tools can serve as a roadmap for enterprises planning to reengineer their supply systems.

At the same time, the study has limitations primarily associated with the use of a single case study methodology, which constrains the transferability of the conclusions to different industries and types of organizations. Promising avenues for further research include cross-industry quantitative studies to identify statistically significant relationships between digital maturity and the effectiveness of disintermediation, as well as an analysis of the potential of next-generation technologies, including generative artificial intelligence, for deeper automation and further intelligentization of supplier management processes.

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