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Business Model Transformation of Construction Companies: From Contract-Based Execution to a Developer–Entrepreneurial Paradigm

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ABSTRACT

The global economic instability of 2024–2025 intensified the structural constraints of the construction sector and triggered a pronounced erosion of profitability within the classical contracting model. Key drivers include rising costs of construction resources, an escalating shortage of qualified personnel, and tighter regulatory requirements, which collectively narrow the margin space available under traditional contracting arrangements. Under these conditions, the research focus shifts to the regular and increasingly observable transition of construction organizations toward a developer–entrepreneurial operating logic, interpreted as a mechanism not merely of short-term adaptation but of sustained expansion over a longer horizon.

The purpose of the study is concentrated on the theoretical substantiation and construction of a business-process transformation model in which the production–contracting contour is coupled with investment-oriented asset management and with digital transformation instruments consistent with the Industry 4.0 agenda. The methodological foundation includes a systematic review of the financial statements of transnational construction groups, a comparison of profitability levels across key market segments, and an analysis of practice-oriented cases from industry leaders, including Vinci and Skanska.

The results indicate that institutionalizing development functions and managing the asset within a full life-cycle logic generates a synergy effect and increases the controllability of risk, which in a number of configurations supports growth in net profit from an approximate 5% to 15%. The overall set of conclusions supports the hypothesis that entrepreneurial orientation, combined with high digital maturity, constitutes a decisive condition of competitiveness within the current economic configuration. The material has applied relevance for executive and managerial tiers of construction holdings, the investment and analytical community, and representatives of public authorities involved in planning and advancing infrastructure programs.

Keywords: business model, development, entrepreneurial paradigm, construction contracting, profitability, digital transformation, BIM technologies, investment strategy, asset life cycle, strategic adaptation.

INTRODUCTION

By 2025 the construction industry entered a zone of accelerated structural reconfiguration, where an outwardly favorable market environment coexists with weakening financial outcomes among classical contractors. With the global construction market estimated at USD 11.39 trillion by the end of 2024 and projected to expand to USD 16.11 trillion by 2030, a paradox becomes visible: scaling the overall volume of work does not translate into comparable growth in the profitability of traditional contracting, while margins continue to exhibit a stagnation-like character [1]. The macroeconomic landscape of 2024–2025 suggests that the "engineering–procurement–construction" (EPC) model, in its "pure" form, is essentially exhausting its adaptive capacity under resource-price volatility and the simultaneous global reconfiguration of supply chains. Against this backdrop, Deloitte's assessments appear symptomatic: by mid-2025, real value added in the industry increased by only 1% year over year, while gross output declined by 0.6%, indicating not so much a cyclical slowdown as a manifestation of constraints embedded in prevailing operational architectures [2].

The relevance of the problem is determined by a practical need to identify new contours of financial resilience for construction businesses. In 2025 the effective tariff rate for construction goods reached a 40-year maximum at 25–30%, while steel and aluminum prices in certain regions rose by as much as 50% under the influence of trade disputes and heightened geopolitical tension [2]. As a result, contracting organizations bound by fixed-price agreements find themselves in a position where inflationary impulses directly convert into a deterioration of project economics, reinforcing a tendency toward performance defaults: the abandonment activity indicator in August 2025 increased by 88.2% [2].

A substantive research gap is expressed in the insufficient elaboration of mechanisms enabling a shift from operational management of construction processes toward entrepreneurial management of investment assets. A substantial share of publications concentrates either on the technological contour (BIM, AI) or on the financial instruments of development, while the holistic transformation of the business model as a unified object of analysis remains comparatively underdescribed. Within this logic, the **aim** of the study consists in substantiating the shift of construction companies from the role of executor to a developer–entrepreneur paradigm and in forming the conceptual foundations of such a transition.

Scientific novelty is associated with substantiating an "engine of business-model innovation," in which an organization's dynamic capabilities are coupled with digital platforms that enable the extraction of additional value throughout the entire life cycle of a construction asset.

The author's hypothesis is formulated as the assumption that combining the functions of client–developer and general contractor within a single entrepreneurial structure, supported by Industry 4.0 technologies, makes it possible to simultaneously reduce vulnerability to rising costs and to form stable rent-like income flows.

Materials and Methods

The methodological framework of the study is built in a logic of interdisciplinary integration, combining strategic management instruments, the Dynamic Capabilities concept, and the Resource-Based View approach [3]. This composition makes it possible to interpret competitive advantages as derivatives of the configuration of resources and competencies while also capturing mechanisms of their renewal under technological and market discontinuities.

To achieve the stated objectives, a set of mutually complementary research procedures was applied. Within a systematic literature review, an analysis was conducted of highly cited publications from Scopus and Web of Science corpora for 2020–2025, enabling identification of key constraints on digital transformation and typical trajectories of business-model evolution in construction [4, 5]. The comparative-analytical contour was implemented through comparing financial indicators (gross and net profit margins, as well as asset turnover) across different industry segments—from private residential construction to capital-intensive infrastructure—making it possible to

establish differences in sources of value added and risk profiles [6, 7].

Empirical validation of the conceptual propositions was ensured via the case study method: an in-depth analysis was conducted of the practices of transnational companies Vinci (France), Skanska (Sweden), and Strabag (Austria), on the basis of which stable patterns of vertical integration and diversification of revenue streams were reconstructed [9]. Additionally, content analysis of industry analytics was employed, including reports from consulting leaders (Deloitte, McKinsey, PwC) and specialized indices, including the Dodge Construction Index, which allowed the formation of a statistical basis for 2024 and 2025 and the alignment of corporate strategies with market macrodynamics [12].

The source base is structured according to a data typology. The first group includes academic articles and conference materials (Scopus/WoS), providing theoretical density and methodological rigor for the conclusions. The second group is represented by financial statements and annual reports of public companies for 2024, opening access to verifiable market metrics and to performance dynamics. The third group includes analytical reports by international institutions, particularly the World Economic Forum, reflecting macro-trends and institutional shifts within the industry [14]. In selecting literature and data, priority was shifted toward sources from the last three years, which increases the relevance of the empirical base and reduces the risk of extrapolating outdated regularities.

Results and Discussion

The examination of transformation processes in the construction industry over recent years has made it possible to identify a stable relationship between business-model adaptability and firms' financial performance. A contracting configuration that is reduced primarily to executing prescribed volumes of work encounters a pronounced "scissors effect": unit costs accelerate upward, while the ability to pass cost escalation through to the client price remains institutionally and contractually constrained. The consequence is a compression of the margin corridor and heightened sensitivity to any inflationary impulses affecting resource inputs and labor costs.

In 2025 the construction sector operates under a regime of elevated uncertainty, which is reflected both in investors' behavioral strategies and in the dynamics of leading indicators. The Dodge Construction Index, traditionally treated as a leading signal for nonresidential construction, exhibited weakening in the second half of 2025, which is interpreted as an increase in investor caution, a softening of investment demand, and a rising selectivity across projects [12, 13]. Under such conditions, low-margin contracting organizations fall into a zone of increased vulnerability: even moderate fluctuations in the prices of materials, logistics, and financing translate into a disproportionate deterioration of financial metrics, while fixed-price contractual constraints amplify the risk that projects lose economic feasibility.

A comparison of profitability indicators and other key financial ratios, presented in Table 1, forms an empirical basis for the conclusion that increasing business-model flexibility and embedding value-management mechanisms across the asset life cycle are critically important conditions for maintaining stable profitability under current market conditions.

Table 1. Comparative profitability of construction market segments in 2024–2025 (compiled by the author based on [7]).

Market segment	Gross margin (%)	Net margin (%)	Key profit factor
General contracting (GC)	12.0–16.0	5.0–6.0	Scale and volume
Specialized works	15.0–25.0	6.9–8.5	Unique skills

Infrastructure projects	12.0–18.0	7.2–8.3	Long-term public contracts
Residential development	18.0–25.0	8.0–11.0	Direct sale of value
Integrated developer–entrepreneur	22.0–28.0	10.0–15.0	Life-cycle management

The data presented in Table 1 indicate that a shift from a narrowly contracting logic toward an integrated entrepreneurial configuration provides not only an expansion of gross profit but also an increase in the resilience of the final financial result. The effect is achieved through the rationalization of general and administrative (G&A) costs and, importantly, through incorporating asset ownership at the operations stage as a source of additional value. As a result, the possibility emerges of reaching a net margin at the level of 10–15%, which empirically supports the proposition that an entrepreneurial paradigm functions as a mechanism for forming a "safety cushion" in the event of phase-like cooling of the market [8].

At the same time, short-term imbalances do not negate a favorable long-term vector: fundamental demand drivers— infrastructure renewal, urbanization processes, and the scaling of technological construction systems— continue to support the sector's growth potential. In this context, the technological factor takes on the character of a structural amplifier, since digital platforms for project and asset management, together with Industry 4.0 instruments, increase cost transparency, improve risk controllability, and allow a transition from one-off project revenues to more stable streams anchored in the asset life cycle. The dynamics of the aggregate volume of the global construction market, visualized in Fig. 1, illustrate this trend and provide a macroeconomic basis for interpreting current changes not as a temporary reaction to crisis conditions, but as a transition toward a different model of value extraction.

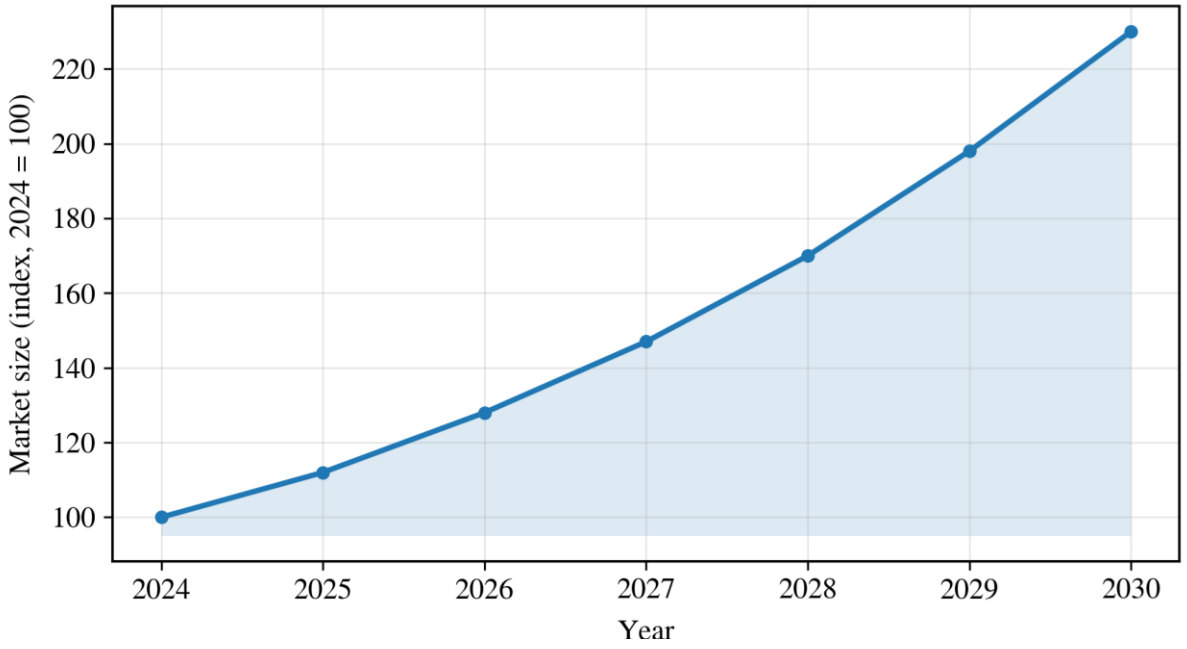

Fig.1. Line graph of market growth forecast (complied by the author based on [9, 12, 14]).

The forecast trajectory of the global construction market through 2030, presented in Fig. 1, captures the sector's sustained long-term growth while simultaneously underscoring the qualitative heterogeneity in how created value is distributed across participants in the chain [1]. In 2025, a key catalyst of this dynamic is digitalization, which

is gradually shifting from a supportive tool into a system-forming factor of competitive positioning. In this regard, the conclusion of the BST Global study is indicative: 77% of executives view artificial intelligence as a source of business-model transformation—namely, as a driver not of isolated improvements but of a reassembly of the principles of governance, monetization, and risk control [17].

At the same time, the practical realization of this potential cannot be reduced to deploying individual software products or automating fragmented operations. Digital transformation in construction is institutional in nature and requires a re-marking of the managerial vertical: a redistribution of authority and accountability, the introduction of data-governance contours, a redesign of KPIs toward life-cycle metrics, and the creation of mechanisms of cross-functional coordination among development, production, finance, and operations. In other words, the technological factor becomes outcome-bearing only when it is supported by changes in organizational architecture and managerial procedures that ensure the conversion of data into managerial decisions and economic effect.

The author's concept of such a restructuring, presented in Fig. 2, logically frames a shift from a "vertical of execution" to a "vertical of value creation," where digital platforms and analytical instruments function not as an external superstructure but as decision-making infrastructure, ensuring the integration of the project contour with investment-oriented asset management across all stages of the asset life cycle.

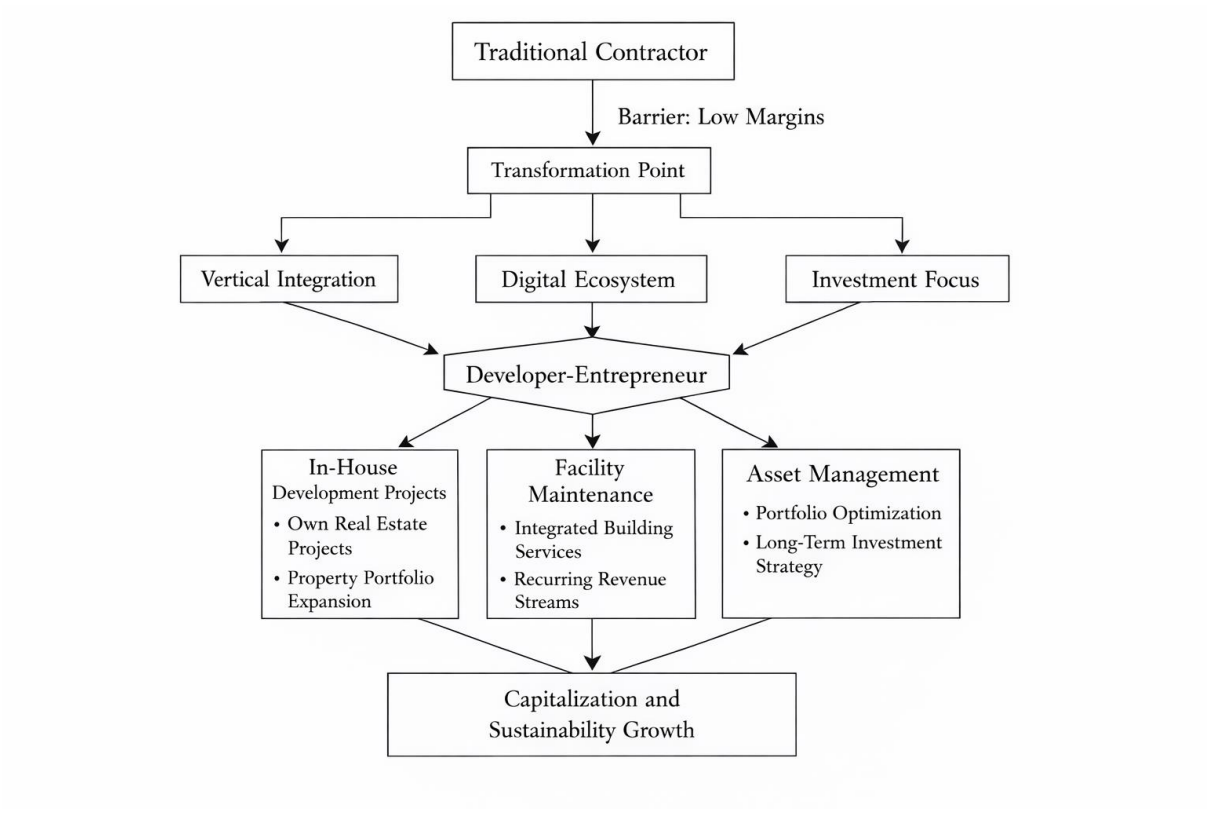

Fig. 2. Logical framework for transforming the construction business model (author's development).

By 2025, the implementation of Digital Twins increasingly takes on the character of a de facto industry standard, as it enables a shift from local optimization of construction production toward end-to-end value management across the entire asset life cycle. The technological value of this instrument manifests in two ways. At the construction stage, the digital twin increases the precision of logistics decisions and improves the synchronization of material, equipment, and labor flows, reducing losses driven by operational asynchrony. After commissioning, it forms an information base for predictive maintenance, making it possible to detect deviations in the performance of

engineering systems in advance and to minimize unplanned downtime. In this way, the digital twin functions not merely as an element of "digitalization," but as a structural component of an entrepreneurial model, because it supports the formation of stable post-project revenues and strengthens control over operational risks [18, 19].

At the same time, transformational change is not realized instantaneously and requires passing through successive stages of increasing organizational complexity. The evolution reflects a transition from fragmented management of individual functions to integrated decision-making contours, where data, processes, and accountability are linked into a single managerial architecture. Based on a synthesis of practices across 380 construction SMEs and large holdings, a maturity-level classification is substantiated and presented in Table 2, capturing regular stages in the development of competencies, tools, and coordination mechanisms required for the sustainable adoption of digital solutions and the subsequent extraction of additional value [20].

Table 2. Matrix of growth stages and the evolution of construction business (compiled by the author based on [16, 20, 21]).

Stage	Model type	Operational focus	Financial priority
Stage 1	Start-up contracting	Survival, pursuit of any contract	Cash flow
Stage 2	Stable contracting	Process systematization, IT baseline	Margin retention
Stage 3	Professional general contracting	Market diversification, tendering	Revenue growth
Stage 4	Project developer	Risk management, pre-project stage	Return on investment (ROI)
Stage 5	Integrated holding	Contracting–development synergy	Enterprise value (EV)
Stage 6+	Ecosystem player	Data and life-cycle management	Resilience and ESG indices

Reaching the fifth and sixth stages of maturity presupposes the purposeful formation of "dynamic capabilities," understood as an institutionalized capacity for accelerated resource reallocation and reconfiguration of operational contours in response to external shocks and shifts in market conditions [23, 24]. In 2025, the practical expression of this quality becomes readiness for rapid scaling of modular construction and prefabrication within a DfMA logic, enabling reductions in project calendar timelines in the range of 20–50% through node standardization, process parallelization, and a reduced share of site-based uncertainties [18].

Empirical analysis of the strategies of market leaders further confirms the effectiveness of an entrepreneurial paradigm as a means of stabilizing cash flow and expanding sources of value creation. The Vinci Group relies on a bifurcated "Concessions + Contracting" configuration, in which the construction and energy contours generate operational flow over the short and medium term, while

the concessions portfolio (airports, motorways) functions as a generator of stable long-term rent, providing the resource base for reinvestment and technological renewal [27]. In 2023–2024, Vinci's emphasis on investments in photovoltaic projects (target guideline—2 GW by the end of 2023) conceptually shifts the company's positioning from that of a purely construction executor toward that of an energy operator—i.e., toward a model where the operational phase becomes an independent source of added value [28].

A similar logic is visible in Skanska's income architecture. For 2024, revenue amounted to SEK 177.2 billion; however, the differentiation of performance by segments is of principal significance: the construction division demonstrated a margin of approximately 3.5%, while the Project Development direction delivered a substantially higher Return on Capital Employed, maintaining investment attractiveness even against the backdrop of stagnation in certain Scandinavian markets [10]. Integration across the value-creation chain in this case performs not a declarative but an economically measurable function, allowing procurement control to be strengthened through scale and improving the manageability of the project contour through direct administration of assets and projects in the United States, where the order backlog reached a historic maximum [22, 30].

In 2024, Strabag demonstrated the resilience of its financial structure, keeping the equity ratio above 30%, reflecting the firm's ability to preserve a buffer of strength amid high volatility in costs and demand [11]. The strategic vector for 2025 concentrates on digitalizing operational processes and on environmental transformation within an ESG logic, which increases competitiveness in European public procurement, where sustainable development requirements are steadily tightening and increasingly function as an admissibility filter for contracts [11]. A comparison of the performance of these leaders, aggregated in Table 3, provides a basis for concluding that entrepreneurial integration—via concessions, development, and managed operations—constitutes not an alternative to traditional contracting business, but its superstructure, fundamentally changing the income profile and resilience to cyclical downturns.

Table 3. Key performance indicators (KPIs) of global leaders for 2024 (compiled by the author based on [10]).

Company	Total revenue (bn)	Operating margin in contracting (%)	Share of international business	Strategic focus 2025
Vinci	€68.8 (approx.)	4.0–5.5	55%	Concessions and Energy
Skanska	SEK 177.2	3.5–3.7	66%	Development and the U.S.
Strabag	€17.4	5.0–6.1	70%	Digitalization and ESG

The reorientation of construction companies toward an entrepreneurial paradigm in 2025, despite its economic attractiveness, is accompanied by a set of constraints capable of neutralizing the expected effect when institutional readiness is insufficient. The key barriers are not isolated, but systemic in nature, forming an interlinked risk contour in which personnel, financial, and trade–logistics factors mutually reinforce one another.

One of the most severe constraints is the labor shortage. For 2025, the exit of approximately 9 million experienced workers from the industry is projected at a global scale [32]. The most sensitive gap is forming in segments that determine an asset's technological complexity and operational reliability: electrical installation, HVAC systems, and IT competencies in construction. Shortages in these personnel categories lead to a sustained increase in labor costs; and wage growth of around 4% per year, under a low margin corridor typical of contracting activity, becomes a critical factor of pressure on financial results [7]. An additional risk lies in the fact that an entrepreneurial

model requires not only headcount but qualitatively different competencies—asset management, digital engineering, data, and life-cycle expertise—which intensifies competition for scarce talent.

The second block of constraints is associated with the cost of capital. Elevated central-bank interest rates at the beginning of 2025 increase the price of debt financing, thereby worsening the economics of large development initiatives and lowering potential internal rates of return (IRR) [15]. Unlike the contracting model, where the financial cycle is often shorter and working capital plays a major role, the entrepreneurial configuration presupposes long-term resource lock-in within a project, making sensitivity to the interest rate materially higher. As a result, tightening monetary conditions can shift projects from the category of investment-acceptable into a zone of borderline efficiency, requiring strengthened risk management and a more precise calibration of capital structure.

The third risk group is driven by tariff and trade constraints and by dependence on imported materials and equipment. When the import component is substantial, companies become vulnerable to the introduction of duties, quotas, and other restrictive measures, which converts price volatility into direct losses in cost and delivery timelines. As an adaptive response, the diffusion of the nearshoring strategy intensifies—relocating production and supply contours closer to end markets—thereby reducing regulatory and logistics exposure and increasing the predictability of supply chains [25, 26].

The combined action of these factors forms a multi-contour risk model in which a shortage of qualified personnel raises costs and delays, expensive capital compresses the investment corridor of returns, and tariff shocks disrupt the stability of resource provisioning. The interaction of these influences, visualized in Fig. 3, provides a framework for interpreting the entrepreneurial model not as a universal solution, but as a strategy requiring developed mechanisms of organizational adaptation, financial resilience, and supply-chain controllability.

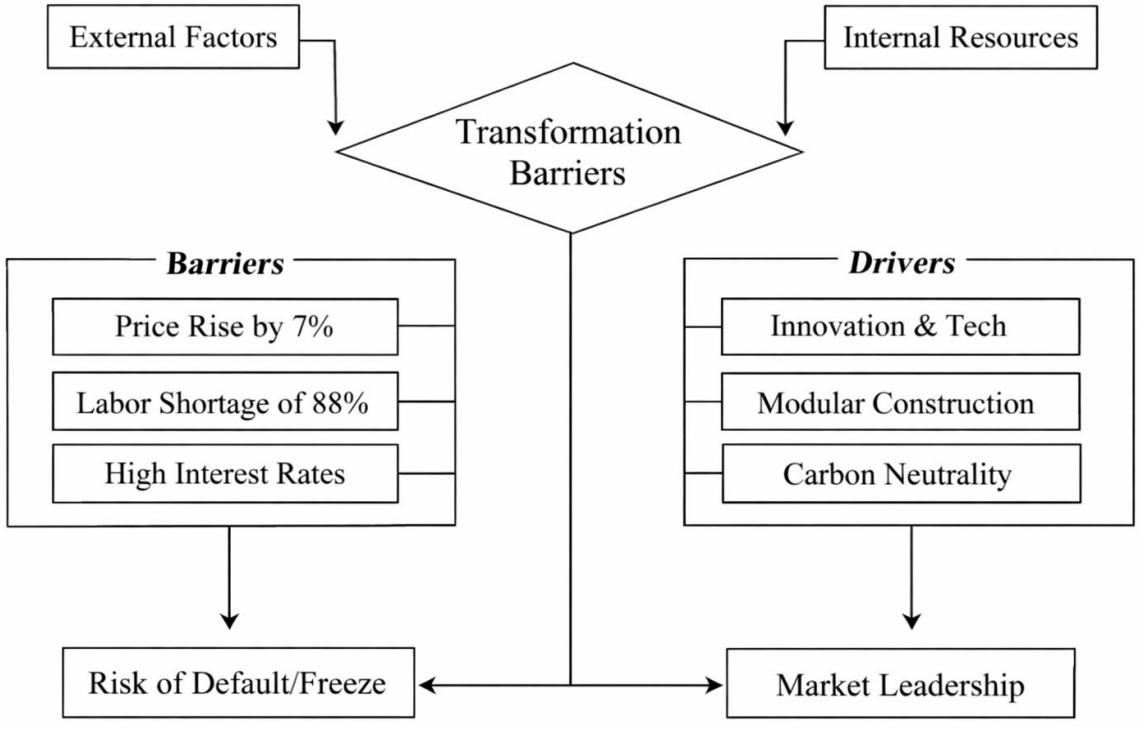

Fig. 3. System of factors influencing business-model transformation (compiled by the author based on [2]).

The analysis presented makes it possible to interpret "entrepreneurial orientation" (Entrepreneurial Orientation, EO) not as a behavioral attitude of a management team, but as a reproducible strategic resource that enables an organization to systematically extract additional value under conditions of high volatility. Empirical and theoretical works published in 2024–2025 indicate that EO functions as a key mechanism through which business model innovation is converted into measurable corporate performance; moreover, the impact of innovative change on performance is indirect and is realized through the degree to which EO is expressed [36, 37]. Accordingly, the transformation task should be treated not in the plane of "implementing tools," but as building an institutional capability for entrepreneurial renewal—one that is embedded in processes, metrics, and the architecture of decision-making.

As practical directions for the transition, three interrelated measures can be distinguished. First, the formation of an "innovation engine" is advisable as a standing organizational contour oriented toward generating, selecting, and scaling initiatives capable of altering the logic of value extraction. In implementation terms, this may take the form of an internal R&D unit, a corporate accelerator, or a hybrid platform for interaction with start-ups—of the Leonard type within the Vinci Group—allowing external technological solutions to be converted into a managed innovation portfolio [28, 29]. In this case, what is decisive is not nominal institutionalization, but the presence of procedures for investment screening, piloting, integration into the production contour, and subsequent replication [34, 35].

Second, a critical condition is the prioritization of data as the basic infrastructure of management. The transition from scattered spreadsheets and local datasets to unified cloud platforms for project management and construction information (e.g., Procore, Autodesk BIM 360) delivers not only increased transparency, but also a reduction in the transaction costs of coordination. The most indicative effect appears in reducing the number of requests for information (RFIs) by approximately 30%, which directly affects schedules, rework volumes, and the manageability of contractual risks [26]. Within this logic, data are treated as an asset, while digital platforms act as a mechanism for capitalizing that asset through the reduction of uncertainty and the acceleration of managerial cycles.

Third, a strategically significant orientation is management of the full asset life cycle. Incorporating 6D BIM (the operations-oriented BIM dimension) into the value proposition makes it possible to shift the focus from one-time project delivery toward the construction of long-term service relationships, where value creation continues after the asset is commissioned. Such a configuration transforms the deal from "construction as a product" into "operations as a service," opening the possibility of multi-year contracts for asset management, maintenance, and optimization of resource consumption, which is consistent with an entrepreneurial model of forming stable income streams [31, 33].

In 2025, "Adaptive Reuse" (the adaptive re-use of buildings) acquires the status of one of the most economically and institutionally grounded directions of development. Converting underutilized office space into residential assets and logistics hubs becomes an instrument for accelerated value extraction by leveraging already created capital, reducing demolition costs, and shortening the investment-and-construction cycle. This model allows a faster approach to break-even because a significant share of infrastructural and urban-planning constraints is already "embedded" in the existing asset, while part of permitting and engineering solutions can be adapted without passing through the full design contour typical of greenfield construction [26].

At the same time, adaptive conversion generates a pronounced environmental effect: preserving primary structural elements and reusing materials reduces volumes of construction waste and the associated carbon burden, improving alignment with ESG criteria and strengthening project competitiveness when engaging institutional investors and the public sector. As a result, Adaptive Reuse becomes not a situational response to excess office stock, but an element of an entrepreneurial paradigm in which asset management and functional reconfiguration are treated as an independent source of rent-like income, while simultaneously reducing the carbon footprint and the time costs of reaching payback [26].

Conclusion

The transformation of construction companies' business

models from contract-based execution to a developer–entrepreneurial paradigm should be interpreted not as a situational reaction to the economic disturbances of 2024–2025, but as a regular stage in the industry's evolution within the contour of the fourth and fifth industrial revolutions. Within the present study, the declared set of tasks has been addressed in a consistent manner: the necessity of the transition has been substantiated, financial and operational parameters have been analyzed, stages of organizational maturity have been identified, and the practices of global market leaders have been synthesized.

The results obtained allow several generalizations to be formulated that capture stable regularities of the ongoing structural shift. First, improvements in financial efficiency are most clearly observed among companies integrating development functions: in such configurations, a net margin on the order of 12–15% is attainable, compared with an approximate 5% for "pure" contractors, thereby creating an internal resource for investment in innovation and increasing resilience to inflationary and resource shocks. Second, technological synergy increasingly takes on a systemic character: digitalization in the forms of BIM, AI, and digital twins ceases to be treated as an optional enhancement and instead becomes an infrastructural backbone of the entrepreneurial model, ensuring controllability of cost and risk across the full asset life cycle. Third, the strategic adaptation of leaders (Vinci, Skanska) confirms the effectiveness of revenue diversification, in which stable operating cash flows from infrastructure operation are combined with higher-margin development initiatives, thereby creating a balance between short-term liquidity and long-term, rent-like resilience.

The practical significance of the study is determined by the applied character of the proposed growth-stage matrix, which enables self-diagnosis and the formation of a roadmap for transitioning to an entrepreneurial model while accounting for labor-market constraints and price volatility. In this way, the framework provides not only a basis for goal-setting, but also for the controlled design of transformation, minimizing the risk of losing operational stability during the transition period.

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