УДК 658.8:658.83 **JEL Classification M31, M10, L62**

Kostiantyn Danko
ORCID: https://orcid.org/0000-0003-0251-7508
Ph.D., marketing team leader
Zaporizhzhia Machine-Building Design Bureau Progress Joint Stock Company
named after Academician O.H. Ivchenko
Oleksandr Zozulov
ORCID https://orcid.org/0000-0001-7087-2080
Candidate of Economic Sciences, Professor
Professor of the Department of Industrial Marketing
National Technical University of Ukraine
"Igor Sikorsky Kyiv Polytechnic Institute"
Nadiia Iazvinska
ORCID: https://orcid.org/0000-0001-7158-1701
Candidate of Economic Sciences, Associate Professor,
Associate Professor of the Department of Industrial Marketing
National Technical University of Ukraine
"Igor Sikorsky Kyiv Polytechnic Institute"
(Ukraine)

STRATEGIC ALTERNATIVES FOR AIRCRAFT ENGINE MANUFACTURERS: A COMPARATIVE MARKETING ANALYSIS

*Ukraine's aircraft engine manufacturers operate under unprecedented wartime pressure and vola*tile global markets. This study explores strategic marketing alternatives for Ukrainian aircraft engine manufacturers using industrial marketing approaches. It identifies key challenges faced by high-tech enterprises during wartime and shows that success depends on three factors: leveraging core competencies through strategic partnerships, implementing managerial decentralization, and divesting non-core assets. The research proposes a decision-making matrix for selecting restructuring models and offers practical recommendations for building resilient, competitive marketing strategies in conditions of uncertainty and transformation.

Keywords: industrial marketing, marketing of high-tech enterprises, marketing management, marketing strategy, strategic partnership.

DOI: 10.15276/mdt.10.2.2026.1

Statement of the problem in general form and it's connection with important scientific or practical tasks. In the current conditions of the aviation industry's development, Ukrainian aircraft engine manufacturers face a number of systemic problems, the most acute of which are: insufficient funding for research and development, loss of traditional markets, limited access to the latest technologies and materials, and growing competition from transnational corporations.

These challenges significantly complicate the maintenance of technological capacity and international competitiveness of Ukrainian developers and manufacturers of aircraft engines. At the same time, preserving technological potential, ensuring the export of high-tech products, and integrating into global value chains are critically important tasks for both individual enterprises and the Ukrainian economy as a whole.

In this context, attracting foreign investment is a necessary condition for the stabilization and development of the industry, as it is investment resources that can compensate for the lack of domestic financing, promote the modernization of production, the introduction of innovations, and entry into new markets. Moreover, strategic foreign investors can become conduits for technology transfer and a source of management expertise, which together increase the industry's adaptability to changes in the global market.

In these conditions, strategic partnership emerges as one of the most promising tools for improving the investment attractiveness of enterprises in the aircraft engine manufacturing industry in Ukraine. Its key feature is the ability to achieve synergy between participants by combining resources, competencies, and market opportunities in order to reduce the investment burden, increase innovation capacity, and ensure access to new markets and new sources of investment. The strategic partnership model in the format of Risk Sharing Partnership (RSP) and Risk and Revenue Sharing Partnership (RRSP) is particularly relevant, as it allows not only to distribute costs and risks between the parties, but also to form a joint long-term value proposition for the global aviation market.

From a scientific point of view, the study of strategic partnerships in aircraft engine manufacturing is closely linked to the issues of industrial marketing, strategic management, innovative development, and international cooperation. At the same time, from a practical point of view, this topic has direct practical significance for the formation of effective strategies for entering foreign markets, restructuring the business models of Ukrainian aircraft manufacturers, and forming their competitive advantages in the context of the transformation of the global aviation sector. That is why researching the potential of strategic partnerships as a tool for attracting investment is timely and important in both theoretical and practical terms.

Analysis of the latest research and publications, which initiated the solution of this problem and on which the author relies. The impact of strategic partnerships on innovation and sustainable development of enterprises is studied by authors such as Maksymova [1], Eweje G., Sajjad A., Nath S. [2]. Wittenborg et al. [3] conducted a systematic study of the role of partnership networks in the exchange of knowledge and innovation in aerospace engineering. Wang and Ma [4] substantiated the importance of public-private partnerships as a tool for achieving sustainable development goals. The important role of forming partnerships capable of ensuring sustainable development and competitiveness in Europe is noted in [5]. Renard in [6] critically assesses the European Union's approach to forming strategic partnerships, pointing to excessive declarativeness and a lack of deep interaction in many of them. The author argues that the current geopolitical situation — in particular, the intensification of competition between major powers, the war in Ukraine, and growing economic interdependence — requires a reformatting of the EU's approaches to strategic cooperation. Instead of “partnerships on paper,” he proposes moving toward truly functional, mutually beneficial, and purposeful alliances based on common interests, trust, and specific projects.

In addition, the topic of strategic partnership was explored in works [2, 4, 7, 8]. The topic of strategic partnership in the defense industry became particularly relevant with the adoption on June 19, 2025, by the Verkhovna Rada of Ukraine of draft law No. 7508 on “improving the mechanism for attracting private investment using the mechanism of public-private partnership”, which expands opportunities for Ukraine's post-war recovery and the

development of the defense-industrial complex by expanding opportunities for attracting investment and forming strategic partnerships.

Highlighting the previously unresolved parts of the general problem to which the article is devoted. Despite substantial research on strategic partnerships and their role in innovation and sustainable development, several critical gaps remain in understanding their application within the aircraft engine manufacturing sector, particularly in transitional and post-conflict contexts. While existing studies [1-5] provide valuable insights into partnership mechanisms and knowledge exchange networks, they predominantly focus on established markets in stable geopolitical environments and do not adequately address the specificities of emerging defense-industrial ecosystems.

Furthermore, although Renard [6] critiques the superficiality of many strategic alliances and calls for functional, mutually beneficial partnerships, there is insufficient empirical guidance on how aircraft engine manufacturers in developing markets can practically implement such partnerships while navigating disrupted supply chains, limited investment capital, and geopolitical instability. The recent legislative developments in Ukraine, while creating new opportunities for public-private partnerships, have not yet been analyzed through the lens of marketing strategy formulation for high-tech enterprises.

Most critically, existing literature lacks comparative analysis of alternative strategic partnership models specifically tailored to the aircraft engine manufacturing industry in contexts characterized by simultaneous challenges of post-war reconstruction, business decentralization, and integration into global value chains. This study addresses these gaps by examining how Ukrainian aircraft engine manufacturers can leverage various partnership forms to enhance their competitive positioning and investment attractiveness in volatile market conditions.

Formulation of the purpose of the article (statement of the problem). The purpose of the study is to conduct a comparative analysis of forms of strategic partnership as alternatives for the development of enterprises in the aircraft engine manufacturing industry in Ukraine in order to develop recommendations for creating effective marketing strategies for high-tech enterprises in the aircraft engine manufacturing industry in the context of business decentralization, growing competition, and disruption of global supply chains.

Research objectives:

− to analyze approaches to the formation of marketing strategies in the high-tech sector, focusing on the effective use of key competencies of companies in strategic partnerships;

− to investigate the role of management decentralization and the sale of non-core assets in increasing the investment attractiveness of companies;

− perform a comparative analysis of forms of strategic partnership as alternatives for the development of enterprises in the aircraft engine manufacturing industry of Ukraine;

− offer practical recommendations for the formation of effective marketing strategies for aircraft engine manufacturing enterprises in Ukraine in conditions of instability and transformation of global markets.

Research methods. To achieve the research objectives, the method of analysis and synthesis of approaches to the formation of marketing strategies for high-tech enterprises and forms of strategic partnership was used. The case study method was used to thoroughly examine specific examples of restructuring and marketing strategies of high-tech aircraft engine manufacturing companies (Honeywell, General Electric Aerospace, Rolls-Royce). The forecasting method was used to model scenarios for the further development of marketing strategies, taking into account global trends.

Statement of the main material of the research with full justification of the scientific results obtained. There are a number of approaches to forming marketing strategies in the high-tech sector of aircraft engine manufacturing [9–11]. Let us consider the main ones in more detail: content marketing, digital transformation, improving the level of maintenance, repair and Overhaul (MRO), developing key competencies, business restructuring, and strategic partnerships.

Focusing on digital content and technology branding (or content marketing) for companies in Ukraine's aircraft engine manufacturing industry, which involves publishing blogs, white papers, and webinars to build trust in the brand and highlight its technological advantage, cannot be fully implemented in wartime due to security restrictions caused by military risks. Therefore, the implementation of this promising approach must be postponed until after the war.

Focusing on digital transformation as a strategic direction in the aviation technology sector has good prospects and meets today's requirements. The role of digital media interaction, in particular data visualization and analytics, is constantly growing: VR/AR is used for engine presentations, CRM for managing relationships with OEM customers, and AI analytics for market forecasting and price optimization [12]. All of these tools require significant investment in recruitment and training, software and equipment purchases. The difficult economic situation in which Ukrainian aircraft engine manufacturers find themselves complicates the rapid and effective implementation of this approach.

Customer retention through improved maintenance, repair, and overhaul (MRO) and digital services as an approach to shaping the marketing strategy of an aircraft engine manufacturer is quite effective and in line with current industry trends. The emphasis on after-sales service and digital twins as part of the marketing offer, which increases the engine's life cycle and customer loyalty, the transformation from an engine developer and manufacturer to a provider of a comprehensive solution (engine and digital services) also requires significant external investment and considerable time to recruit and train appropriate personnel and reorganize the company's business processes, which is quite difficult to implement under martial law.

Given the limited resources, the processes of transformation of the global economy and international trade, which are increasingly affecting aviation companies, as well as the strategic marketing prerequisites for their development [13], this study focuses on a combination of approaches aimed at developing key competencies, business restructuring, and strategic partnerships as the basis for marketing strategy.

The theoretical framework that ensures the development of key competencies is the Resource-Based View (RBV). According to RBV, key competencies are an extremely valuable and rare resource that is difficult for competitors to replicate. Therefore, the development of key competencies is the practical implementation of a marketing strategy based on RBV.

RBV emphasizes the company's internal resources and capabilities as the main drivers of competitive advantage [14], without focusing exclusively on external market conditions. RBV assumes that the company's unique marketing capabilities, resources, and competencies are critical to achieving higher productivity and sustainable competitive advantage. Only a combination of the unique marketing capabilities, resources, and competencies of several companies, formed within the framework of a strategic partnership, can provide a more sustainable competitive advantage.

In order to ensure the sustainable development of the internal resources of Ukrainian aircraft engine manufacturing companies in conditions of war, high economic uncertainty and risks, and to implement innovative competitive projects, it is necessary to attract foreign

ISSN 2522-9087 (Print)
ISSN 2523-434X (Online)

investment. Preference is definitely given to external investments for a number of reasons, the main ones being the company's limited free capital and restricted access to state investments.

When it comes to high-tech solutions, such as aviation gas turbine engines, the public sector requires long-term trust building. Even extensive experience, compliance with international safety standards, participation in exhibitions, white papers, and scientific and educational events do not guarantee compliance with the criteria for state funding. Despite the expected stability of government orders, a B2G-oriented approach in the case of aircraft engine manufacturing carries a number of risks. First, government orders depend on government programs, political course, and budget. A change in power or geopolitical situation can completely stop or revise project funding. As practice has shown, in conditions of war or active combat operations, preference is given to ready-made solutions rather than promising developments, even those that are ready for serial production. In most cases, the financing of the design, testing, and prototyping stages falls on the company's budget. It is for these reasons that, for the successful implementation of sustainable development of the enterprise, preference is given to attracting external investments.

When planning the company's development in such conditions, in addition to attracting external investment, emphasis should be placed on measures such as reducing the financial burden and distributing risks, attracting new technologies and increasing competitiveness in the international market, sustainable development and job preservation, and strengthening the country's defense capabilities. Effective implementation of these measures for high-tech enterprises, including those in the aircraft engine manufacturing industry, is only possible through the development of strategic partnerships — a tool that allows for risk sharing, attracting the necessary investments, gaining access to modern technologies and materials, and strengthening positions in the international market, which is particularly relevant in the context of martial law.

The approach to forming a marketing strategy, whose main tools are the company's focus on alliances, cooperation, and strategic partnerships, has proven its effectiveness in combination with business restructuring measures [15-19] (see below for details). Within this approach, inter-company integration, strategic alliances, joint ventures, and R&D contractual partnerships are used to compete in capital-intensive chains. Key competencies are formed through the combination of know-how, infrastructure, and markets (RBV in action). Effective supply chain partnerships at Rolls-Royce, MTU, and Airbus serve as examples: integration of vertical links in marketing discourse, emphasis on a shared brand of competence.

Thus, the key factors for the successful implementation of modern marketing strategies by Ukrainian aircraft engine manufacturers are the formation of investment attractiveness, the development of partnership models, state support for transformation processes, and the provision of effective legal means and mechanisms for attracting investment to enterprises in the industry. Let us take a closer look at the experience of structural transformations of world-renowned companies in the aircraft engine manufacturing industry that led to their growth.

Business restructuring trends in the high-tech aircraft engine manufacturing sector.

By analyzing the structural changes that have taken place in high-tech international aircraft engine manufacturing companies, we can get a realistic picture of the trends over the next ten years that have led to their growth.

In February 2025, Honeywell CEO Vimal Kapoor made an official statement [15] announcing that, due to “unprecedented demand” in the commercial and defense aerospace sectors, Honeywell had decided to spin off this division into a separate public company. As a result of this decision, Honeywell will split up in 2025-2026 and three separate companies will be formed — for the production of advanced materials, automation, and the aerospace industry.

ISSN 2522-9087 (Print)
ISSN 2523-434X (Online)

According to the CEO, the purpose of this split is to ensure optimal conditions for the implementation of individual growth strategies and to create better conditions for the company's shareholders and customers [15].

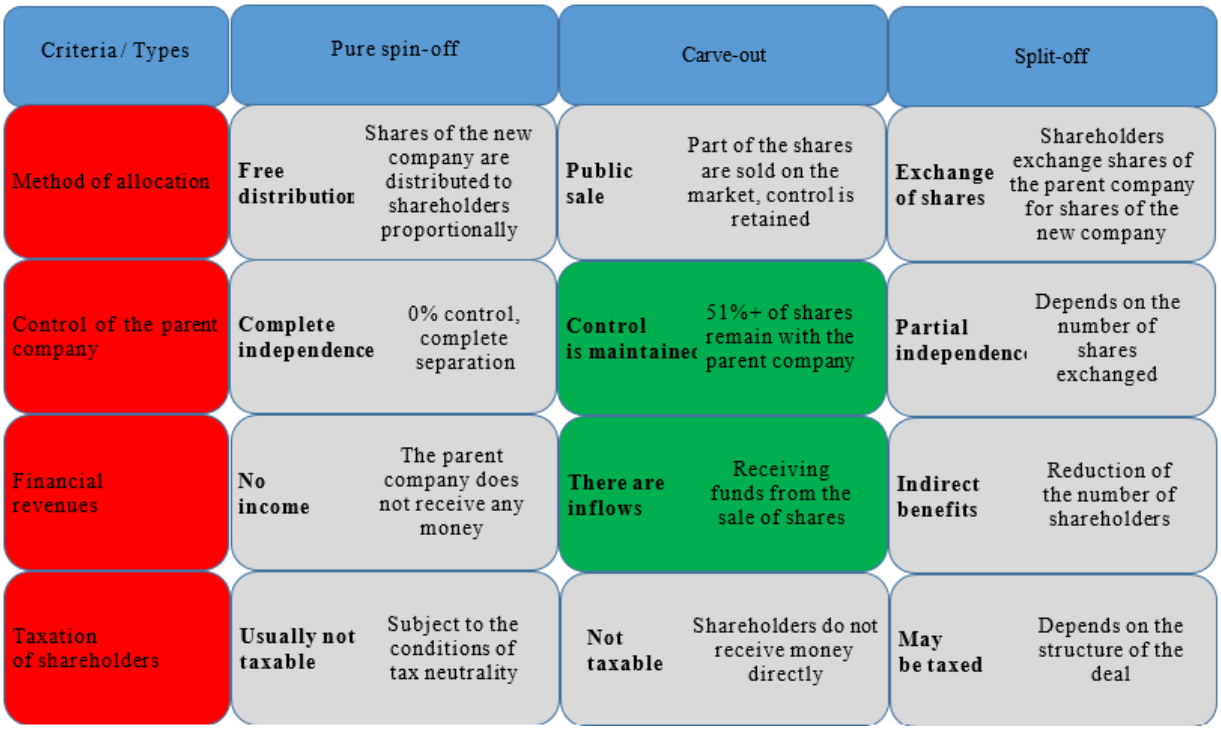
Honeywell's aerospace division, which will soon become a separate company called Honeywell Aerospace, earned $15 billion in 2024 [15] and currently specializes in manufacturing a wide range of aviation products, such as engines, avionics, cockpits, and navigation systems. To generate additional shareholder value, the company plans to expand its portfolio through the acquisition of additional strategic assets.

The decision to split Honeywell had been in the works for a long time. Among the factors that may have been decisive was pressure from investor Elliott Investment Management [15], which, according to The Wall Street Journal, called for the split as early as 2024. The company's management believes that "the increased focus, alignment, and strategic flexibility provided by this split will enable Honeywell to realize opportunities for operational improvement and value enhancement" [15]. This decision by Honeywell's management fits naturally into the trend of restructuring international aerospace corporations through spin-offs, or segmental business divisions, which has been observed for several years in a row. A spin-off is a process whereby a parent company separates part of its business or a division into an independent company. The parent company creates a new legal entity and transfers assets, employees, and operations of a specific business line to it. The shareholders of the parent company usually receive shares in the new company in proportion to their shares. The types of such companies and the selection matrix are shown in Table 1 and Figure 1. A special form of company separation is a spin-out, which is the creation of an independent company by employees.

Table 1 - Types of spin-off companies*

Criterion	Types	Characteristics
By method of allocation:	Pure spin-off	- The parent company distributes shares in the new company to its shareholders free of charge - The most common type, shareholders receive shares in proportion to their shares
	Carve-out	- The parent company sells part of the shares of the new company on the public market - Retains controlling stake in new company
	Split-off	- Shareholders exchange their shares in the parent company for shares in the new company - The number of shareholders in the parent company is decreasing
	Tracking stock	- Separate shares without actual division
	Equity carve-out	- Temporary sale with subsequent repurchase
By size of the allocated part	Full spin-off	- The entire division or business area is spin-off
	Partial spin-off	- Only part of the division's assets are being spin-off
By strategic goal	Protective spin-off	- Spin-off problematic or loss-making divisions
	Growth spin-off	- Spin-off of promising areas for better development
	Focus spin-off	- Focus on core business
By tax consequences	Tax neutral	- No taxation for shareholders
	Taxable	- Shareholders pay taxes on the benefits received

*Source: compiled by the authors.



*The most attractive types are in green

Figure 1 – Matrix for selecting the most appropriate type of spin-off company. Source: constructed by the authors

The move toward decentralization began in November 2018, when United Technologies Corporation (UTC) announced the tax-free spin-off of its Otis and Carrier businesses into new independent public companies called Otis Worldwide Corp and Carrier Global Corp. In April 2020, UTC, renamed Raytheon Technologies, completed the tax-free spin-off of Otis Worldwide Corp and Carrier Global Corp [16]. In 2023, the corporation changed its name from Raytheon Technologies to RTX Corporation. RTX Corporation currently operates through three companies — Collins Aerospace, Pratt & Whitney, and Raytheon —which work together to meet the needs of international partners in the aerospace and defense industries. The purpose of the split was to enable each business to focus on its core competencies and make them more attractive to investors.

Next, the restructuring through a spin-off baton was passed to General Electric (GE). On November 9, 2021, GE announced plans to create three public companies focused on the growing aviation, healthcare, and energy sectors. On July 18, 2022, GE announced the brand names of the future companies: GE HealthCare for GE's medical business, GE Vernova for GE's energy portfolio, including renewable energy, power, digital and energy financial services, and GE Aerospace for GE's aviation business. It was planned that all three companies would continue to benefit from GE's legacy and global brand, valued at nearly $20 billion at the time [17]. November 30, 2022 – General Electric announced that its board of directors had approved the previously announced spin-off of its healthcare business, GE Healthcare Holding LLC (“GE HealthCare”). January 4, 2023 – GE announced that it had completed the separation of its healthcare business, establishing GE HealthCare Technologies Inc. (“GE HealthCare”). April 2, 2024 – GE Aerospace announced the official launch of an independent public company, following the completion of the separation of GE Vernova. GE Aerospace trades on the New

York Stock Exchange (NYSE) under the ticker symbol “GE.” GE Aerospace Chairman and CEO Lawrence Culp Jr. said, “With the successful launch of three independent public companies now complete, today marks the historic final step in GE's multi-year transformation” [18].

Rolls-Royce Holdings plc did not conduct a direct spin-off, but in recent years has been selling or divesting non-core assets to focus exclusively on aircraft engines, including civil aviation, defense, and energy. In 2022, it sold its subsidiary Bergen Engines [19] and discussed selling its Power Systems division. These measures were aimed at improving financial stability after the crisis caused by the COVID-19 pandemic and allowed the company to focus on its core business – aircraft engines.

Thus, there is a clear trend toward the formation of highly specialized spin-off companies in aircraft engine manufacturing. The past seven years have shown a clear trend among international aerospace corporations toward restructuring through the strategic division of business into separate public companies focused on narrow areas of activity. This process often takes the form of spin-offs or other types of demergers (a demerger is the process of splitting one company into two or more independent companies; the main types of demergers are spin-offs, split-offs, carve-outs, and complete divisions) and is particularly important for aircraft engine manufacturing companies, where high-tech developments require maximum management focus and financial transparency. The matrix for selecting the type of demerger for an aerospace company is shown in Figure 2.

Selection criteria	Pure spin-off	Split-off	Carve-out	Complete elimination
The parent company's need for capital	Not satisfactory No income	Partially reduces costs	Fully satisfies revenue	One-time Distribution of assets
Retaining control over assets	Complete loss of 0% control	Partial loss depends on exchange	Full preservation Controlling stake	Total loss Liquidation
Tax efficiency	Best Tax neutral	Good Possibly neutral	Average Income tax	Worst Full taxation
Complexity of implementation	Average Standard procedure	High Complex calculations	Highest IRO + adjustment	Critical Complete dissolution
Speed of execution	Fast 6-12 months	Moderate 8-15 months	Moderate 12-24 months	Average 9-18 months
Shareholder satisfaction	High get everything free	Good Choice is available	Average Dilution of shares	Good Maximizing value
Dependence on market conditions	Low does not depend on IPO	Lowest Internal operation	High Depends on IPO	Average asset market

*Red is the least attractive option; gray is the average option; orange is an acceptable option with advantages; green is the best option for this criterion.

Figure 2 – Matrix for selecting the most appropriate type of demerger for the company
Source: constructed by the authors

ISSN 2522-9087 (Print)
ISSN 2523-434X (Online)

The key objectives of such transformations are to increase investment attractiveness through clear specialization, improve operational efficiency, and create conditions for the targeted strategic development of each business area.

An example of a spin-off company specializing in a specific family of engines is CFM International, established in 1974 by GE Aviation and Snecma specifically to develop and manufacture the CFM56 turbofan engine. This was not just a partnership, but a separately created company (albeit without a formal division, but with its own brand, balance sheet, and strategic autonomy). Subsequently, CFM International also became the developer of the LEAP family, a new generation of engines for narrow-body aircraft (Airbus A320neo, Boeing 737 MAX). Experience has shown the effectiveness of this solution, which has made it possible to isolate the investment, production, and engineering risks of a specific product, provide customers (airlines) with a clear brand and service channel, and optimize the life cycle management of a specific engine.

As a result, the CFM56 engine has become one of the most popular turbofan engines for the narrow-body aircraft market. According to [20], as of 2021, CFM International had a 44% share of this engine market, with the CFM56 family accounting for 85% of that share (the rest being LEAP engines).

CFM International can be considered a classic example of a “product spin-off” because, although legally it is a joint venture, strategically it was a separation of the company's product asset (the engine) into a separate business structure. GE and Snecma did not simply cooperate, but created a brand, support structure, and business model exclusively for one product – the CFM56.

A similar practice applies to IAE (International Aero Engines), a company created to promote the V2500 engine (Airbus A320) between Pratt & Whitney, MTU, Rolls-Royce, and Japanese companies.

International Aero Engines (IAE) is a striking example of an aircraft engine family being spun off into a separate business structure created for a specific product. This case is therefore worth analyzing in detail.

IAE, a strategic spin-off of the V2500 engine, was founded in 1983 with the aim of jointly developing and promoting the V2500 engine as a competitor to the CFM56. The consortium members were Pratt & Whitney, the main integrator; MTU Aero Engines, responsible for the compressor module and turbine; Japanese Aero Engine Corporation (JAEC) – responsible for the low-pressure turbine and financing, Rolls-Royce – initial partner (withdrew in 2012), and FIAT Avio / Alfa Romeo Avio – minor participation in the early stages (later discontinued).

Over time, Rolls-Royce transferred its stake to Pratt & Whitney, and today IAE is effectively controlled mainly by Pratt & Whitney and MTU.

The V2500 engine is successfully used on Airbus A320ceo, McDonnell Douglas MD-90, and Embraer KC-390 airliners. Its competitor is the CFM56. As of the 2020s, there are more than 7,000 engines installed [21] according to MTU [22], and in 2023, 5,300 engines were in operation.

The goals of creating IAE were to combine the intellectual property and technologies of several companies that could not compete with CFM on their own. In addition, compelling arguments include the desire to share the financial risks of research and development and to optimize production and service through a modular engine design (distribution of production among partners). It was also possible to create a single engine brand, regardless of the nationality of the manufacturer.

The operating model was that each partner produced “its own” module, which was then integrated under the leadership of P&W. IAE operated as a “separate business unit” with its own sales, marketing, customer support, and service structure. Profits and expenses were shared in proportion to each company's contribution.

As a result, the V2500 engine captured about 50 percent of the market share among narrow-body aircraft [22], providing worthy competition to the CFM56 in Europe, Asia, and the Middle East. IAE brought significant profits and technological expertise to its participants and paved the way for future programs, including GTF (Geared Turbofan), in which the same companies participated.

Thus, IAE is an example of a product-centric spin-off, where the entire business model was tailored to a single product — the V2500 — with global support, a separate brand, and a clearly structured risk and profit sharing model.

The analysis allows us to conclude that in the world of aircraft engine manufacturing, where innovation, the pace of change, and safety requirements are constantly increasing, highly specialized companies demonstrate high adaptability and market efficiency.

Restructuring through separation combined with strategic partnerships is not only a response to external challenges, but also a tool for strategically strengthening positions in the high-tech sector. This trend is expected to continue in the coming years, shaping the new architecture of the global aircraft engine market.

From a marketing and strategy perspective, IAE is a brand that has successfully positioned itself separately from its parent companies. This has avoided internal competition between participants (for example, P&W and Rolls-Royce had separate products but did not compete in the A320 segment). The IAE model set a template for similar future alliances in engine manufacturing.

These conclusions are also supported by the experience of innovative engineering breakthroughs and successful strategic approaches implemented by high-tech companies in the last century. Since its inception, the international aircraft engine market has faced various challenges related to environmental impact, national, regional, and international economic crises, and shocks to the national interests of individual countries, such as armed conflicts, geopolitical upheavals, or trade wars. These shocks affect how societies prioritize innovation in a particular industry. Thus, the World Intellectual Property Organization's 2022 Report [23] emphasizes the effectiveness of mission-oriented policies in crisis situations. The uniqueness of the current situation in the aircraft engine market lies in the fact that we are facing several challenges at once: environmental challenges, the consequences of the COVID-19 pandemic, the economic crisis, trade wars, and, in Ukraine, a full-scale war. In such conditions, business managers have no room for error. In order to choose truly effective strategies, existing experience of successfully overcoming critical situations and current realities (economic, political, legislative, etc.) must be taken into account.

The examples considered once again emphasize the role of investment in the development of high-tech enterprises in the aircraft engine manufacturing industry and the importance of restructuring through product-oriented division as an effective tool for strategically strengthening companies' positions. Therefore, it is worth exploring in more detail the mechanisms of spinning off, separating, selling, or restructuring parts of the business (divestiture or divestment) that are potentially attractive to international aerospace companies.

Comparative analysis of strategic partnership models.

Given the uncertain conditions in which Ukrainian aircraft engine manufacturers are forced to operate, it is worth paying attention to the RSP (Risk-sharing partnership) model and its further development – RRSP (Risk and Revenue Sharing Partnership) [24]. RSP is a form

ISSN 2522-9087 (Print)
ISSN 2523-434X (Online)

of strategic partnership that is particularly common in the aviation industry, where several companies (partners) jointly finance, develop, manufacture, and support complex high-tech products. Participants not only share the benefits, but also share the financial, technological, and commercial risks. This model is already being successfully used by Ukrainian aircraft engine manufacturers in relation to suppliers of units and control systems. The RRSP model implements not only RSP, but also includes revenue sharing – the definition of revenue sharing focuses on the distribution of revenues according to an agreed formula. RRSP is a model of deeper integration: partners share both risks and revenues, which motivates both sides to work for the success of the business.

Experience shows that RRSP can be implemented either without establishing a separate business structure (e.g., through a license agreement) or by establishing a separate business structure through divestiture (see Figure 3). The advantage of the latter approach is that it ensures greater transparency and investment attractiveness of the project through legal and financial separation, a clear structure of responsibility and management, easier access to external financing, expanded opportunities for tax optimization, flexibility of market entry strategy, high transparency of intellectual property protection and performance results (financial and operational indicators reflect the real effect of RRSP).

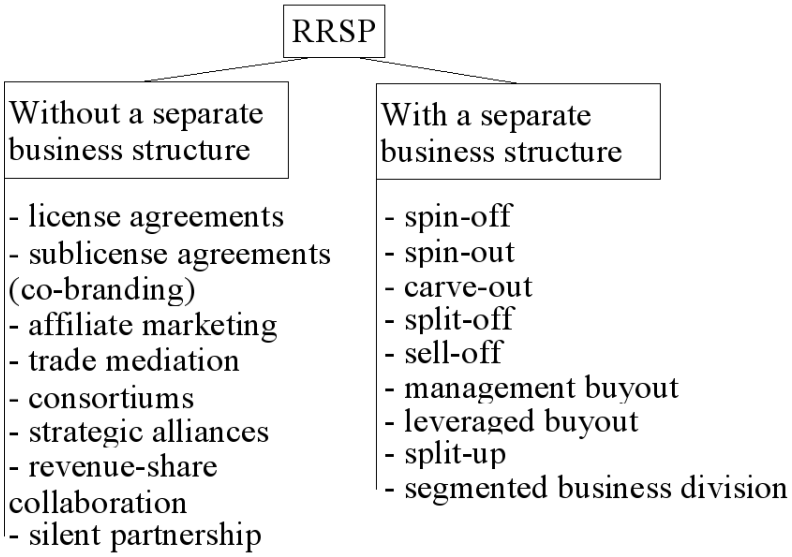


Figure 3 – Types of RRSP strategic partnership forms

The RRSP and divestiture model proposed by the authors as applied to aircraft engine manufacturing companies is shown in Figure 4.

ISSN 2522-9087 (Print)
ISSN 2523-434X (Online)

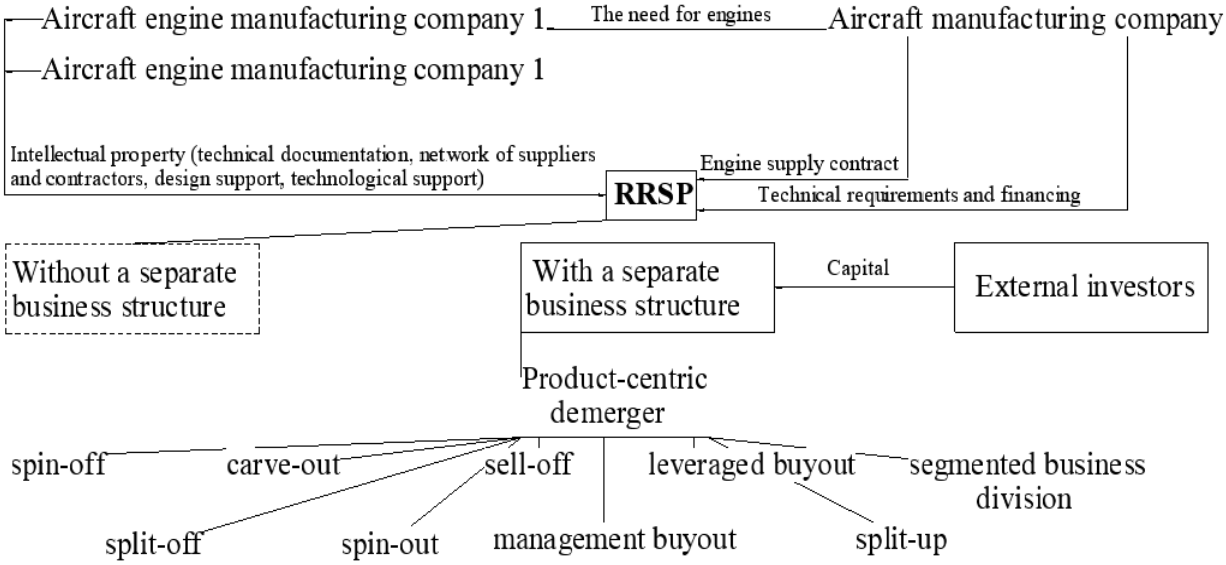


Figure 4 – RRSP model and divestment in aircraft engine manufacturing

As shown in Figure 2, within the framework of this work, we will highlight nine basic mechanisms for forming a product-centric demerger: spin-off (separation), spin-out (separation), carve-out (cutting out), split-off (separation with exchange), sell-off (sale of assets), management buyout (MBO), leveraged buyout (LBO), split-up (complete separation), and segmented business separation.

An important issue for companies is the choice between alternative options for corporate restructuring, as this decision affects the profitability of restructuring and, in the case of aerospace companies, also affects national defense capabilities, technological security, and the preservation of scientific potential.

Therefore, let us analyze each of the above divestiture models, their strengths and weaknesses for an aircraft engine manufacturer in Table 2.

Table 2 — Key characteristics of divestment models

Divestment model	Advantages	Disadvantages
Spin-off. Corporate restructuring in which the parent company distributes shares in a new independent company among its existing shareholders in proportion to their ownership stake. Once the process is complete, two separate public companies are formed with the same ownership structure but different management. According to research [25], spin-offs often create additional value for shareholders, as they allow both companies to focus on their core competencies.	Preserving the technological specialization of separate divisions while increasing their managerial autonomy; The ability to attract targeted investments in specific promising engine developments; Increasing the transparency of financial indicators for individual areas of activity; Maintaining control of strategic technologies within Ukrainian ownership.	Risk of disrupting the technological integrity of the aircraft engine manufacturing production cycle; Possible loss of economies of scale in procurement and management; Increased administrative costs for creating parallel management structures; Complexity of distributing intellectual property rights for engine manufacturing technologies.

Continuation of Table 2

Spin-out. The process of creating an independent company through the transfer of technology or assets from the parent organization. Unlike a spin-off, the parent company may retain a certain stake in the newly created company, but not a controlling stake. According to Chesbro and Rosenblum (2002) [26], spin-outs are often used to commercialize technologies that do not fit the parent company's current business strategy.	Separation of innovative developments (such as engines for unmanned aerial vehicles) into more flexible structures; Attracting external investment without losing complete control over technologies; Creating a start-up culture for new developments while maintaining the basic technological platform; The ability to use new business models (e.g., leasing engines instead of selling them).	Possible outflow of key engineering personnel and know-how from the parent company; Conflict of interest in the distribution of orders between the parent company and the separate division; Complexity of managing joint R&D projects; Risk of disclosure of critical technologies to external investors.
Carve-out. Partial separation of a business unit through an initial public offering (IPO), where the parent company usually retains a controlling stake. As noted by Gasienica, K., & Ström, A. (2024) [27], a carve-out allows the parent company to monetize part of the value of the unit while retaining strategic control.	Raising capital through an IPO of part of the business (e.g., civil engine manufacturing); Retaining strategic control over key areas; Increasing capitalization and transparency for potential investors; Flexibility in maintaining synergy between divisions through a controlling stake.	The need to comply with stock market requirements and disclose information; The risk of hostile takeover of minority shares by competitors; Complex legal structure of relationships and transfer pricing; Regulatory restrictions for enterprises of strategic importance.
Split-off. A process whereby shareholders of the parent company are offered to exchange their shares for shares in a subsidiary. Unlike a spin-off, shareholders must choose which company they want to remain with. According to research by Gaughan, P.A. (2018) [28], split-offs are often used when management wants to change the shareholder base between two companies.	The ability to identify areas with different market prospects (military vs. civilian engines); Natural segmentation of the investor base according to interest in different areas; Clear distribution of responsibilities and resources between business units; Optimization of capital structure for different types of production.	The complexity of fairly determining share exchange ratios; The risk of insufficient business capitalization; The loss of technological synergy between different areas of engine production; Legal challenges in the distribution of contracts and obligations.
Sell-off. A strategic form of corporate divestiture in which a company sells a subsidiary, business unit, or significant set of assets to an outside buyer for cash, securities, or a combination of both. The company completely divests itself of ownership of the divested unit and receives direct financial proceeds. Often used to increase the focus of the core business [29], reduce debt burden, or free up capital for strategic investments in other areas. Properly structured sell-offs can lead to significant share price increases for both the selling company and the buyer [30].	Rapid attraction of significant capital for the development of priority areas; Opportunity to sell non-core assets (social infrastructure, auxiliary production facilities); Optimization of production capacities for current market needs; Reduction of debt burden and improvement of financial stability.	Risk of losing strategically important technologies of national significance; Possible disruption of production chains if the wrong assets are selected for sale; Social tension due to possible staff reductions; Regulatory restrictions due to the strategic status of the aviation industry enterprise.

Continuation of Table 2

Management buyout (MBO)**.** A transaction in which the existing management team purchases a business unit or company from the parent corporation. According to the work of B Hammer, S Mettner, D Schweizer, N Wünsche (2023) [31], MBO creates powerful incentives for managers who become owners, which often leads to increased operational efficiency.	Preservation of industry expertise and understanding of production specifics; High motivation of management as business owners; Preservation of corporate culture and relationships in the industry; Ability to make flexible decisions without the bureaucratic procedures of state-owned enterprises.	Limited financial capacity of management to acquire a high-tech enterprise; Potential conflict of interest in structuring the deal; Difficulty in attracting large-scale investments without state guarantees; Risk of losing state control over strategic technologies.
Leveraged buyout (LBO). The acquisition of a company or business unit with significant use of borrowed funds, where the assets of the target company often serve as collateral for obtaining financing. Research [31] shows that LBOs can create value through financial leverage, tax shields, and improved operational management.	The ability to raise significant capital for production modernization; Improved financial discipline due to the need to service debt; Potential improvement in operational efficiency under the pressure of debt obligations; Attracting professional investors with restructuring experience.	Significant debt burden posing a risk to strategic enterprises; Risk of prioritizing short-term financial results over long-term R&D projects; Restrictions on capital investments due to the need to service debt; Regulatory restrictions for defense-related enterprises.
Split-up. Corporate restructuring in which the parent company is divided into several independent companies and ceases to exist. A split-up allows different business areas to be completely separated, which can maximize their market value.	Clear distribution of assets between different areas of engine manufacturing; Possibility of creating highly specialized world-class companies; Increased investment attractiveness of individual business units; Optimization of corporate governance for specific markets.	Loss of Ukraine's only center of excellence in aircraft engine manufacturing; Risk of duplication of infrastructure and R&D costs; Possible weakening of position in the global market due to loss of brand; Increased administrative and legal costs of the separation process.
Segmented business division. Strategic restructuring in which a company divides its operations into separate business units based on market, product, or geography criteria. Segmented division allows for more efficient resource allocation and implementation of specialized strategies for each segment, increasing overall competitiveness.	A balanced combination of centralization of strategic functions and autonomy of operational units; Preservation of a single technological core while differentiating market strategies; Clear tracking of financial indicators by area of activity; Flexibility in the redistribution of resources between promising projects.	The complexity of building an effective matrix management structure; The risk of internal competition between segments for resources; The need to transform corporate culture; Increased costs of coordinating segment activities.

After analyzing divestiture models, their advantages and disadvantages, we can conclude that, from the point of view of attracting investment and retaining (partial) control over technologies, the most favorable and promising direction for Ukrainian aircraft engine manufacturers to develop non-core innovative areas is currently the spin-out model. The RRSP spin-out model will allow Ukrainian aircraft engine manufacturers to effectively commercialize innovative technologies that do not fit the company's core business strategy, while retaining partial control over them. This approach will help attract outside investment, as the new

ISSN 2522-9087 (Print)
ISSN 2523-434X (Online)

companies can operate independently, adapting their business models to market conditions, which will make them more attractive to investors. So:

1) For Ukrainian aircraft engine manufacturers, the creation of an RRSP based on the spin-out model is a promising direction for development, combining effective commercialization of innovations, attraction of investments, and preservation of strategic control over key technologies.

2) The key factors influencing the forms and types of divestment in Ukraine's aircraft engine manufacturing industry are:

– geopolitical – martial law, sanctions against Russia, and national security;

– regulatory – legislation on strategic assets, control of foreign investment, antitrust regulation;

– technological – unique developments in the field of aircraft and helicopter engines, patents, R&D potential;

– financial – need for capital, profitability, investment attractiveness

strategic – strategic importance of mechanical engineering for maintaining the country's defense capabilities.

Thus, we have a correlation between strategic marketing (which deals with analyzing the marketing environment, ensuring the company's competitiveness, determining the competitive position of the division in the market and the direction of its strategic development), the core competencies of the company (key processes and/or functions of the enterprise that ensure its competitiveness), organizational structures, in particular the need for divestitures (spin-offs, spin-outs, split-offs, carve-outs, complete separation), which is shown in Figure 5.

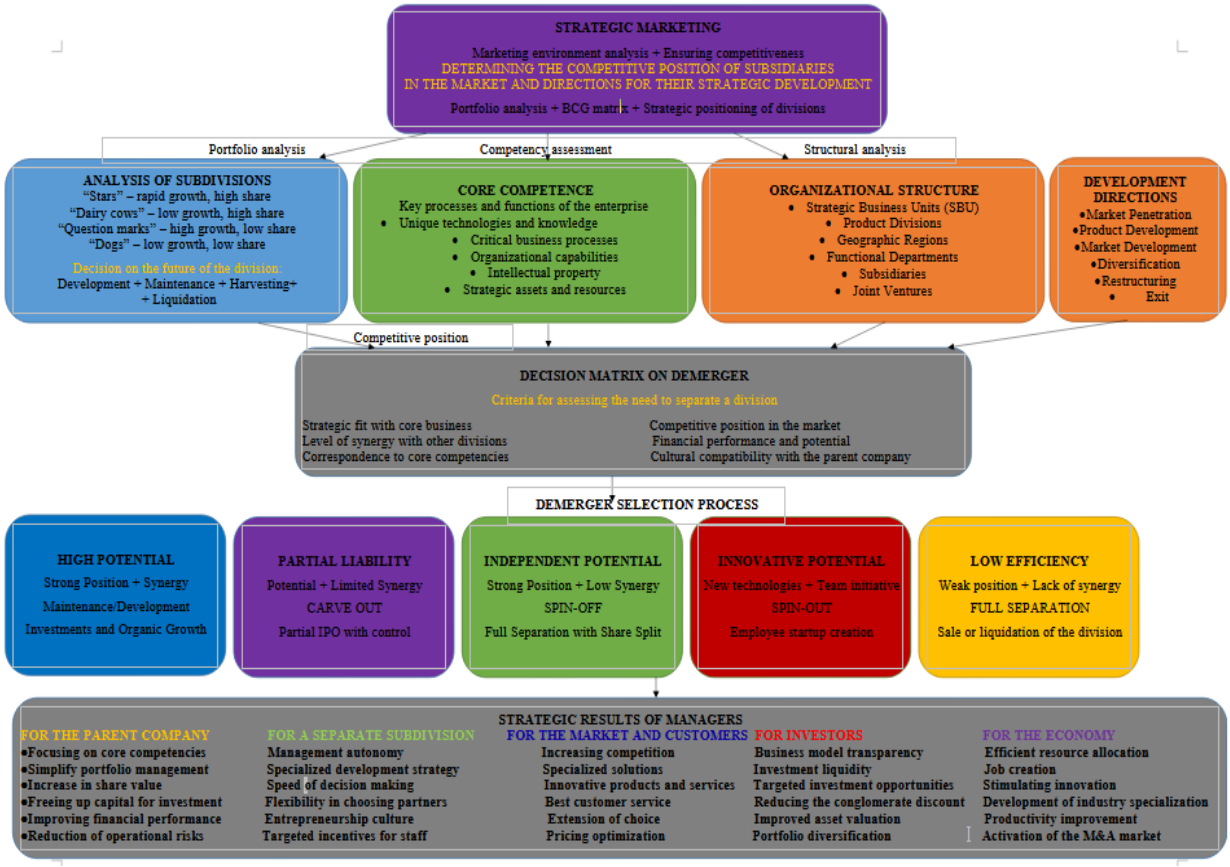


Figure 5 – Relationship between strategic marketing and demarginalization

Practical recommendations for developing effective marketing strategies for Ukrainian aircraft engine manufacturers in the context of global market instability and transformation. To solve the problems mentioned in the introduction, Ukrainian aircraft engine manufacturers should focus on developing and implementing effective marketing strategies aimed at attracting investment. Practical recommendations for developing such marketing strategies are provided below.

1. As a basic approach to forming a marketing strategy for a company in wartime, preference should be given to a combined approach that combines the development of key competencies of companies in strategic partnerships and business restructuring.

2. The key tool and theoretical basis for developing a company's key competencies should be the Resource-Based View (RBV), which focuses on the company's internal resources and capabilities as the main drivers of competitive advantage.

3. The active development of the company's strategic partnership should be implemented with a view to risk sharing, attracting the necessary investments, accessing modern technologies and materials, and strengthening its position in the international market.

4. Enterprises and management companies should develop effective mechanisms for the legal support of the processes of strategic division of the business into separate public companies and the creation of joint ventures (including with foreign legal entities) with a focus on narrow areas of activity, which will allow them to concentrate on their key competencies and make them more attractive to investors.

5. In the current environment, product-centric demerger in the form of spin-out development is the most promising solution for management decentralization in terms of attracting investment and retaining (albeit partial) control over technologies.

Applying these practical recommendations in the formation of marketing strategies and product-centric spin-offs will help high-tech aircraft engine manufacturers effectively adapt to the changing market environment, maintaining competitiveness and ensuring sustainable development.

Conclusions from this research and prospects for further developments in this area. In this paper, the authors analyze trends and examples of successful strategic transformations of global leaders in aircraft engine manufacturing, including flexible approaches to marketing strategy development, management decentralization, and strategic partnerships. Most of these measures are aimed at increasing the investment attractiveness of companies and attracting additional investments, which is extremely important for Ukrainian aircraft engine manufacturers under the current conditions. The practical recommendations developed are proposed for immediate implementation by target companies.

Further research will include an analysis of the dynamics of foreign trade indicators, investments, and R&D expenditures in order to identify dependencies and effective tools for implementation by Ukrainian aircraft engine manufacturers.

1. Максимова І. Стратегічне партнерство у проєктах сталого розвитку в умовах цифрової трансформації та змін клімату // Економіка та суспільство. 2025. № 72. URL: https://economyandsociety.in.ua/index.php/journal/article/view/5740 (дата звернення: 25.10.2025).
2. Eweje G., Sajjad A., Nath S., Kobayashi K. Multi-stakeholder partnerships: A catalyst to achieve sustainable development goals // Marketing Intelligence & Planning. 2021. Vol. 39, Issue 2. P. 186–212. DOI: https://doi.org/10.1108/mip-04-2020-0135
3. Wittenborg T. et al. Knowledge-Based Aerospace Engineering — A Systematic Literature Review // ArXiv. 2025. DOI: https://doi.org/10.48550/arXiv.2505.10142

4. Wang N., Ma M. Public–private partnership as a tool for sustainable development – What literatures say? // Sustainable Development. 2021. Vol. 29, Issue 1. P. 243–258. DOI: https://doi.org/10.1002/sd.2127
5. Twinning the green and digital transitions in the new geopolitical context: Strategic Foresight Report 2022. Luxembourg: EU Publications Office, 2022.
6. Renard T. Treachery of strategies: A call for true EU strategic partnerships. Brussels: Egmont Paper, 2022. 52 p.
7. Xie Y., Zhao Y., Chen Y., Allen C. Green construction supply chain management: Integrating governmental intervention and public–private partnerships through ecological modernisation // Journal of Cleaner Production. 2022. Vol. 331. P. 129986. DOI: https://doi.org/10.1016/j.jclepro.2021.129986
8. Mukhuty S., Upadhyay A., Rothwell H. Strategic sustainable development of Industry 4.0 through the lens of social responsibility: The role of human resource practices // Business Strategy and the Environment. 2022. Vol. 31, Issue 5. P. 2068–2081. DOI: https://doi.org/10.1002/bse.3008
9. Ocheretyanyi B., Dzhur O. Space X marketing strategies taking into account current market trends // Journal of Rocket-Space Technology. 2024. Vol. 33, Issue 4–28. P. 219–226. DOI: https://doi.org/10.15421/452444
10. Кодак Ю. С. Управління міжнародною рекламною діяльністю в умо-вах глобалізації на прикладі ПАТ «Мотор Січ». 2022.
11. Овдієнко В. В. Інноваційні чинники підвищення конкурентоспромож-ності авіаційної галузі в умовах глобальних трансформацій. 2021.
12. Tran T. H., Jiang Y., Williams L. Applications of Mixed Reality for Smart Aviation Industry: Opportunities and Challenges // Modern Development and Challenges in Virtual Reality. IntechOpen, 2023. DOI: http://dx.doi.org/10.5772/intechopen.108798
13. Зозульов О. В., Язвінська Н. В., Данько К. А. Стратегічні маркетин-гові передумови розвитку підприємств авіабудівної галузі: ринкові тенденції та виклики // Int'l Legal Communication. 2021. № 1. С. 186.
14. Lubis N. W. Resource Based View (RBV) in Improving Company Strategic Capacity // Research Horizon. 2022. Vol. 2, No. 6. P. 587–596. DOI: https://doi.org/10.54518/rh.2.6.2022.587-596
15. Honeywell to divide business into three parts, separating aerospace unit / Valerie Insinna. URL: https://breakingdefense.com/2025/02/honeywell-to-divide-business-into-three-parts-separating-aerospace-unit/ (дата звернення: 23.11.2025).
16. Raytheon Technologies, Otis and Carrier Begin Regular Way Trading / Joe Cornell. URL: https://www.forbes.com/sites/joecornell/2020/04/06/raytheon-technologies-otis-and-carrier-begin-regular-way-trading/ (дата звернення: 23.11.2025).
17. GE Unveils Brand Names for Three Planned Future Public Companies. URL: https://www.gevernova.com/news/press-releases/ge-unveils-brand-names-for-three-planned-future-public-companies (дата звернення: 23.11.2025).
18. GE Aerospace Launches as Independent, Investment-Grade Public Company Following Completion of GE Vernova Spin-Off. URL: https://www.ge.com/news/press-releases/ge-aerospace-launches-as-independent-investment-grade-public-company-following (дата звернення: 23.11.2025).
19. Rolls-Royce completes sale of Bergen Engines. URL: https://www.rolls-royce.com/media/press-releases/2022/04-01-2022-rr-completes-sale-of-bergen-engines.aspx (дата звернення: 25.11.2025).
20. CFM56 Aftermarket Expected To Be Robust Post-Pandemic / James Pozzi. URL: https://aviationweek.com/mro/aircraft-propulsion/cfm56-aftermarket-expected-be-robust-post-pandemic (дата звернення: 25.11.2025).
21. V2500® – The engine of choice. URL: https://links.prattwhitney.com/i-a-e/pdf/V2500_Product_Card_060716.pdf (дата звернення: 25.11.2025).
22. 40 years and no end in sight: The V2500 engine celebrates its anniversary / Thorsten Rienth. URL: https://aeroreport.de/en/aviation/forty-years-and-no-end-in-sight-the-v2500-engine-celebrates-its-anniversary (дата звернення: 28.11.2025).
23. World Intellectual Property Report 2022: The direction of innovation. Geneva: WIPO, 2022.

24. Wagner S., Baur S. Risk sharing partnership (RSP) in aerospace: the RSP 2.0 model // Supply Chain Management. 2015. Vol. 15, No. 3. P. 7–13. URL: https://www.researchgate.net/publication/390953606_Risk_Sharing_Partnership_RSP_in_Aerospace_The_RSP_20_Model (дата звернення: 28.11.2025).
25. Bergh D. D., Johnson R. A., Dewitt R.-L. Restructuring through spin-off or sell-off: transforming information asymmetries into financial gain // Strategic Management Journal. 2007. Vol. 29, Issue 2. P. 133–148. DOI: https://doi.org/10.1002/smj.652
26. Chesbrough H., Rosenbloom R. S. The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin‐off companies // Industrial and Corporate Change. 2002. Vol. 11, No. 3. P. 529–555.
27. Gasienica K., Ström A. Sell-Off, Spin-Off, Carve-Out: Brand Identity Changes for the Corporate Mother Brand and the Divested Brand. 2024. URL: http://lup.lub.lu.se/student-papers/record/9169219 (дата звернення: 28.11.2025).
28. Gaughan P. A. Mergers, Acquisitions, and Corporate Restructurings. John Wiley & Sons, 2018.
29. Brauer M. What have we acquired and what should we acquire in divestiture research? A review and research agenda // Journal of Management. 2006. Vol. 32, No. 6. P. 751–785.
30. Chen C. J., Yu C. M. J. Do sell-off market returns benefit all shareholders? // Managerial and Decision Economics. 2023. Vol. 44, Issue 3. P. 1504–1520.
31. Hammer B., Mettner S., Schweizer D., Wünsche N. Management buyouts in times of economic policy uncertainty // Finance Research Letters. 2023. Vol. 52. P. 103499. DOI: https://doi.org/10.1016/j.frl.2022.103499

К.А. Данько, *кандидат технічних наук, керівник групи маркетингу, Акціонерне товариство «Запорізьке машинобудівне конструкторське бюро «Прогрес» імені академіка О.Г. Івченка» (Україна)*

О.В. Зозульов, *кандидат економічних наук, професор, професор кафедри промислового маркетингу Національного технічного університету України «Київський політехнічних інститут імені Ігоря Сікорського» (Україна)*

Н.В. Язвінська, *кандидат економічних наук, доцент, доцент кафедри промислового маркетингу Національного технічного університету України «Київський політехнічних інститут імені Ігоря Сікорського» (Україна)*

Стратегічні альтернативи для виробників авіаційних двигунів: порівняльний маркетинговий аналіз.

Українські виробники авіаційних двигунів працюють в умовах безпрецедентного тиску війни та нестабільності світових ринків. У цьому дослідженні розглядаються стратегічні маркетингові альтернативи для українських виробників авіаційних двигунів з використанням підходів промислового маркетингу. У ньому визначено основні виклики, з якими стикаються високотехнологічні підприємства в умовах війни, та показано, що успіх залежить від трьох факторів: використання основних компетенцій через стратегічні партнерства, впровадження управлінської децентралізації та відчуження неосновних активів. Дослідження пропонує матрицю прийняття рішень для вибору моделей реструктуризації та надає практичні рекомендації щодо побудови стійких, конкурентоспроможних маркетингових стратегій в умовах невизначеності та трансформації.

Ключові слова: промисловий маркетинг, маркетинг високотехнологічних підприємств, управління маркетингом, маркетингова стратегія, стратегічне партнерство.

Received: 5 February 2026
Accepted: 15 March 2026
Published: 16 April 2026