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THE ECONOMIC LOGIC OF MARKETING AUTOMATION PROCESSES

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ЕКОНОМІЧНА ЛОГІКА ПРОЦЕСІВ АВТОМАТИЗАЦІЇ МАРКЕТИНГУ

The article examines marketing automation as an economic process developing under conditions of digital transformation, data-intensive competition, and the growing role of algorithmic coordination in market interaction. It argues that marketing automation should be understood not as a set of separate digital tools, but as a coherent sequence of interrelated managerial and economic decisions. Special attention is given to machine-mediated consumer interactions (M2C) and machine-to-machine (M2M) configurations, in which value creation increasingly depends on organised data flows, system integration, machine-readable offers, and real-time response. In such conditions, automation affects not only the technical execution of marketing activities, but also the logic of coordination between analytical, strategic, and operational levels of decision-making. The purpose of the article is to explain the economic logic of marketing automation processes and to systematise their key elements within a unified sequence. The study proceeds from the assumption that the current literature often considers automation either as a digital toolset or as part of broader AI-enabled marketing practices, while insufficiently explaining its internal structure as an integrated economic process. In response to this gap, the article proposes a conceptual approach that connects the main stages of automation within a single cyclical model. The main scientific result is the proposed conceptual scheme that combines situational analysis, competitiveness factors, the analytical core of automation, strategic selection of functions, project development with evaluation of economic effect, implementation, parameterisation, and monitoring. These stages are interpreted as parts of a closed cycle in which each subsequent stage depends on the previous one and, at the same time, generates information for further adjustment. The study shows that marketing automation begins with analytical diagnosis rather than technology selection, that algorithms perform an operational role within the analytical block, and that evaluation of economic effect serves as prior project justification. Monitoring, in turn, is interpreted as a feedback mechanism that restores the connection between automation results and renewed market analysis. The practical significance of the results lies in the

possibility of using the proposed logic as a guide for managerial choice in designing and assessing automation initiatives. The proposed approach may be useful for identifying where automation is economically justified, how its scope should be determined, and how implementation decisions should be linked with expected organisational and market effects.

У статті розглянуто маркетингову автоматизацію як економічний процес, що розвивається в умовах цифрової трансформації, посилення конкуренції на основі даних і зростання ролі алгоритмічної координації в ринковій взаємодії. Обґрунтовано, що маркетингову автоматизацію доцільно розуміти не як сукупність окремих цифрових інструментів, а як цілісну послідовність взаємопов'язаних управлінських та економічних рішень. Особливу увагу приділено конфігураціям взаємодії типу «машина — споживач» (M2C) та «машина — машина» (M2M), у межах яких створення цінності дедалі більше залежить від організації потоків даних, інтеграції систем, подання пропозицій у машиночитаному форматі та реагування в реальному часі. За таких умов автоматизація впливає не лише на технічне виконання маркетингових дій, а й на саму логіку координації між аналітичним, стратегічним та операційним рівнями прийняття рішень. Метою статті є пояснення економічної логіки процесів маркетингової автоматизації та систематизація їх ключових елементів у межах єдиної послідовності. Дослідження виходить із того, що сучасна наукова література найчастіше розглядає автоматизацію або як набір цифрових інструментів, або як складову ширших AI-орієнтованих маркетингових практик, проте недостатньо пояснює її внутрішню структуру як цілісного економічного процесу. У відповідь на цю прогалину в статті запропоновано концептуальний підхід, який поєднує основні етапи автоматизації в межах єдиної циклічної моделі. Основним науковим результатом є запропонована концептуальна схема, що поєднує ситуаційний аналіз, фактори конкурентоспроможності, аналітичне ядро автоматизації, стратегічний

вибір функцій, розроблення проєкту з оцінкою економічного ефекту, імплементацію, параметризацію та моніторинг. Ці етапи інтерпретовано як складові замкненого циклу, в якому кожний наступний етап спирається на попередній і водночас формує інформаційну основу для подальшого коригування. У дослідженні показано, що маркетингова автоматизація починається з аналітичної діагностики, а не з вибору технології; алгоритми виконують операційну роль в аналітичному блоці; а оцінка економічного ефекту слугує попереднім обґрунтуванням проєкту. Моніторинг, своєю чергою, інтерпретується як механізм зворотного зв'язку, що відновлює зв'язок між результатами автоматизації та повторним аналізом ринкових умов. Практичне значення отриманих результатів полягає в можливості використання запропонованої логіки як орієнтира для управлінського вибору під час проєктування та оцінювання ініціатив у сфері автоматизації. Запропонований підхід може бути корисним для визначення того, де автоматизація є економічно доцільною, яким має бути її масштаб і яким чином рішення щодо впровадження мають бути пов'язані з очікуваними організаційними та ринковими ефектами.

Keywords: *marketing automation, machine-to-machine marketing, digital market transformation, AI.*

Ключові слова: *Автоматизація маркетингу, маркетинг на ринку M2M (міжмашинної взаємодії); цифрова трансформація ринку, штучний інтелект.*

General description of the problem and its connection with important scientific and practical tasks. Ongoing digital transformation is fundamentally altering the operation of modern economies, generating new market configurations and redefining the logic of interaction among economic actors. At the present stage of this transformation, one of the clearest *frontiers of change* is *marketing automation* (MA). It increasingly functions not as an auxiliary technical

instrument, but as a mechanism through which firms process market information, coordinate decisions, personalise interactions, and adapt their behaviour to complex, data-intensive, and rapidly changing competitive environments [2].

This transformation can be observed across both consumer-oriented and inter-organisational settings. At the same time, it becomes especially visible where market interaction is mediated by digital platforms, connected systems, algorithmic decision rules, and integrated data infrastructures [1]. In this respect, machine-mediated consumer interactions (M2C) and machine-to-machine (M2M) market configurations are particularly relevant, because they make clear that value creation increasingly depends not only on communication and persuasion, but also on the ability to organise data flows, ensure machine-readable product and service characteristics, integrate analytical and operational systems, and respond to market changes in real time. Under such conditions, the *central issue* is not the growing diffusion of marketing automation technologies as such, but the insufficient understanding of their *internal logic*. In practical terms, firms need to determine which marketing functions should be automated, how automation should be configured, what implementation model should be selected, and by which indicators its effectiveness should be assessed. In theoretical terms, this requires a coherent explanation of the sequence and interrelation of the principal elements that form marketing automation as a unified economic process. Existing studies already addresses AI-assisted decision-making, automation-enabled personalisation, customer engagement, and the organisational implications of advanced digital systems, yet these insights are often fragmented and do not fully explain marketing automation as an integrated economic logic [9].

Accordingly, this problem is directly connected with important scientific and practical tasks. From a scientific perspective, it requires a clearer conceptualisation of *marketing transformation* under conditions of automation, datafication, and increasingly machine-mediated exchange. From a practical perspective, it requires a structured basis for justifying automation choices, selecting relevant functions and implementation architectures, and evaluating their effects in relation to competitiveness and value creation. In this context, the study of the economic logic

of marketing automation processes has both theoretical importance and practical value.

Analysis of recent studies and publications that provide the foundation for addressing this problem and on which the author relies. Recent studies show that research on marketing automation is developing along several closely related directions. One group of works interprets automation as part of the broader shift towards data-driven marketing decision-making, where analytics, predictive models, and algorithmic support increasingly influence segmentation, targeting, personalisation, and resource allocation [3].

A second line of research emphasises that marketing automation is not limited to operational efficiency, but increasingly affects the logic of managerial judgement itself. Recent work in this area connects automation with heuristics, AI support, and changing patterns of marketing decision-making, suggesting that automated systems do not simply replace marketing choices but restructure how such choices are formed and justified [4]. At the same time, newer studies in digital marketing show that AI-enabled automation is becoming central to real-time personalisation, campaign optimisation, sentiment analysis, and customer engagement across digital channels [1].

A third direction, especially relevant for the present article, extends this discussion beyond conventional consumer-facing digital marketing towards connected and system-mediated environments. Recent systematic research on the integration of AI and IoT in marketing indicates that automation is increasingly embedded in broader technological architectures, where marketing actions depend on interconnected data ecosystems rather than on isolated promotional tools alone [6]. Taken together, these studies provide an important foundation for addressing the problem under consideration, since they confirm the growing strategic significance of marketing automation, its connection with decision-making, and its dependence on complex digital infrastructures. At the same time, they leave open the question of how these elements can be explained within a single economic logic, which makes further conceptual clarification necessary.

Identification of previously unresolved aspects of the overall problem to which the article is devoted. Despite the growing body of recent research, several important aspects of the problem remain unresolved. Existing studies most often examine marketing automation either as a digital toolset or as part of AI-enabled marketing, rather than interpret it as a unified *economic process* with its own internal structure and sequence [3] [4].

In particular, insufficient attention has been paid to the interrelation between the main stages of automation, including market analysis, the selection of functions for automation, implementation choices, monitoring, and the assessment of economic effect [2]. As a result, marketing automation is still more often described through separate instruments and outcomes than through a coherent logic of economically grounded decisions.

A further unresolved aspect concerns the impact of increasingly data-intensive, platform-mediated, and partially machine-driven environments on the logic of marketing activity itself. This is especially relevant in M2C and M2M configurations, where automation reflects not only operational optimisation, but also deeper changes in value creation and coordination [6].

Accordingly, this article addresses the lack of an integrated conceptual explanation of the *economic logic of marketing automation processes*, with particular attention to the systematisation of its key elements and their role within a unified analytical and managerial sequence.

Formulation of the purpose of the article (statement of the problem). The purpose of this article is to develop a conceptual explanation of the economic logic of marketing automation processes and to systematise their key elements within a unified analytical sequence. In accordance with this purpose, the article seeks to clarify the role of market analysis, the selection of marketing functions for automation, implementation decisions, monitoring, and the evaluation of economic effect in the general logic of marketing automation. The problem addressed by the article lies in the absence of an integrated understanding of how these elements are interconnected as parts of a coherent economic and managerial process under

contemporary conditions of digital, data-intensive, and increasingly machine-mediated market interaction.

Statement of the main material of the research with full justification of the scientific results obtained. The starting point of this study is the recognition that marketing automation should be analysed not as a separate tool, but as a structured economic process embedded in a broader system of digital market coordination. This view becomes especially important under conditions of expanding IoT infrastructures, large-scale connected-device ecosystems, and the growing role of algorithmic decision-making in business processes [5]. IoT-based environments increasingly generate value through connected operations, analytics, and inter-system coordination rather than through isolated technical functions alone. At the same time, the spread of autonomous software agents and machine-mediated exchange indicates that market interaction is gradually becoming more data-driven, programmable, and less dependent on direct human intervention in every operational step. [7]

From this perspective, the main scientific result of the article is the proposed interpretation of marketing automation as a logically ordered sequence of interrelated stages. These stages connect market analysis, the identification of competitiveness factors, analytical modelling, strategic selection of automated marketing functions, project design with evaluation of economic effect, implementation choices, system parameterisation, and monitoring. Marketing automation is conceptualised here as a closed *economic cycle* in which each subsequent stage depends on the previous one and, in turn, creates the informational basis for further adjustment.

At the first stage, the process begins with *situational analysis*. Its task is to identify the conditions under which automation is economically justified. This includes the assessment of market environment factors and internal environment factors. The first group covers the dynamics of demand, intensity of competition, technological change, regulatory constraints, and the role of data and digital channels in a given market. The second group includes the firm's own technological readiness, data quality, integration capacity, organisational

competences, and financial constraints. In economic terms, this stage reduces uncertainty and prevents the implementation of automation as a purely imitative or fashionable decision. The practical meaning of this stage is that automation should not begin with software procurement, but with the diagnosis of where exactly coordination costs, response delays, information asymmetries, or scale effects create a real need for automation.

On this basis, the study distinguishes a second analytical block, centred on *market competitiveness factors*. Here the purpose is not merely to describe the environment, but to determine which factors actually shape competitive position and therefore should be translated into automated marketing logic. In this paper, these factors are grouped into internal and external dimensions. Internal competitiveness factors include, for example, the quality of customer data, integration of procurement and sales information, consistency of digital touchpoints, and the ability to generate machine-readable product or service characteristics. External factors include the pace of market change, competitive pressure, platform dependence, interoperability requirements, and the presence of machine-mediated demand. This distinction is important because automation creates value only when it is tied to specific sources of competitiveness rather than to an abstract idea of digitalisation. Research on IoT business models also supports the view that connected business systems increasingly require coordinated value design across multiple actors rather than isolated firm-level digitisation [7].

The next stage is the core block of *marketing automation* itself. It includes analytics, procurement–sales interaction, models, algorithms, effects, and the M2C and M2M configurations. Its role is to transform raw market and operational information into structured decision rules. Analytics occupies the central place because it links market signals with managerial response. The inclusion of procurement and sales in one analytical contour is deliberate. In many real markets, especially industrial and connected-product contexts, marketing effectiveness increasingly depends on the coordination of supply-side and demand-side data. Automation therefore should not be limited to promotional communication only. It should also incorporate the informational connection

between what the firm can offer, under what conditions, and how this offer is recognised, selected, and served in the market.

Within this same block, *algorithms* are instruments for classification, scoring, prediction, segmentation, prioritisation, triggering, and adaptive response. Their output can influence lead selection, pricing recommendations, campaign timing, customer routing, stock-sensitive messaging, or service prompts. In other words, algorithms do not determine why automation is needed; they determine how a previously justified logic is executed.

After the analytical core, the process moves to the *strategic block*. Here the enterprise selects the marketing functions to be automated and defines the framework of the marketing automation strategy. This stage is crucial because not every marketing function should be automated to the same degree. The choice depends on economic relevance, repeatability, data availability, implementation cost, and expected effect. The strategic stage performs a selective role: it determines the boundaries of automation and prevents the economically inefficient extension of automated logic to areas where its contribution is marginal.

The main elements of the proposed economic logic of marketing automation processes can be summarised as follows (Table 1).

Table 1. Structural characteristics of the economic logic of marketing automation processes.

Stage	Core content	Managerial purpose	Output	Economic meaning
Analytical basis	Situational analysis; market environment factors; internal environment factors	To determine whether automation is economically justified	Initial analytical basis for automation decisions	Reduces uncertainty and links automation to actual market conditions
Competitiveness factors	Internal and external market competitiveness factors	To identify which sources of competitiveness should be embedded in automation logic	Structured set of automation-relevant competitiveness drivers	Connects automation with competitive advantage rather than with generic digitalisation

Continuation of table 1.

Stage	Core content	Managerial purpose	Output	Economic meaning
Marketing automation core	Analytics; procurement–sales interaction; models; algorithms; effects; M2C and M2M configurations	To transform data into repeatable decision rules and coordinated response mechanisms	Functional architecture of automated marketing action	Converts dispersed information into scalable and timely market coordination
Strategy block	Selection of marketing functions; selection of MA strategy framework	To determine what should be automated and to what extent	Strategic configuration of marketing automation	Aligns automation scope with business priorities and resource constraints
Project block	Development of marketing automation system; evaluation of expected economic effect	To justify the project before implementation	Project concept with ex ante economic rationale	Links automation design with feasibility, expected return, and risk
Implementation principles	Insource / outsource choice; hosting model; SaaS / IaaS / PaaS alternatives	To choose the organisational and technological model of deployment	Implementation architecture	Shapes cost structure, flexibility, dependence, and control
Physical implementation	Organisational, legal, and informational mechanisms	To ensure operational functioning of the system	Working institutional and process support	Makes the automation system practically operable and compliant
System parameterisation	Metrics; indicators	To define measurable operating parameters	Parameter system for evaluation and adjustment	Makes the system controllable and comparable over time
Monitoring	Marketing environment monitoring; metrics tracking	To detect change and support adaptation	Feedback information for correction	Closes the loop and enables continuous improvement

Source: author's own work

The next stage after the MA strategy development is the *project block*. It includes the development of the marketing automation system and the evaluation

of expected economic effect. In the present model, this evaluation is explicitly *ex ante* and serves as prior economic justification, not as a final *ex post* performance assessment. Before implementation, the company must estimate expected effects in terms of improved conversion, reduced transaction costs, lower coordination losses, faster response, better retention, more efficient use of data, or improved matching between supply and demand. In this sense, the project block translates strategy into an investable design.

The *implementation principles* block follows logically from the project block. Once the system concept is economically justified, the firm must determine how it will be deployed. The central questions here are whether implementation should be insourced or outsourced, where the solution will be hosted, and which infrastructure model is appropriate. Each option implies a different balance between flexibility, control, speed of deployment, vendor dependence, cybersecurity exposure, and long-term cost structure.

The next stage is *physical implementation*, as the creation of organisational, legal, and informational mechanisms that allow the system to function in practice. A marketing automation system does not become effective solely because a platform has been installed. It requires defined responsibilities, data governance rules, compliance procedures, integration routines, and channels for internal coordination. This stage is especially significant in connected environments, where interoperability, security, and data rights become part of the practical viability of the system. Research on machine economies likewise underlines that autonomous or semi-autonomous exchange depends not only on technical capability, but also on the governance conditions that make such exchange trustworthy and operationally stable [5].

After implementation, the system enters the *parameterisation stage*. Here the enterprise defines the metrics and indicators through which the automation system will be assessed and adjusted. This stage has a methodological importance because it converts a general automation architecture into a measurable management system. Metrics may include campaign response rates, lead progression speed,

acquisition cost, retention indicators, churn probability, trigger accuracy, stock-message consistency, processing latency, or service-level indicators. The key point is that metrics should reflect the economic logic identified at the beginning of the process.

Finally, the process is closed by *monitoring*. This block includes the observation of both the marketing environment and the system's own metrics. Its role is to generate feedback for correction. Monitoring is therefore not an auxiliary stage but a constitutive element of the entire economic logic. Market conditions, customer behaviour, data quality, platform rules, and competitive configurations change continuously. A system that is not monitored gradually loses relevance, even if its initial design was correct. Consequently, the proposed model should be interpreted as a cyclical structure rather than a linear one. Monitoring returns the process to situational analysis and competitiveness assessment, thereby forming a continuous loop of adaptation.

On this basis, the resulting logic of the process can be visualised as an integrated scheme of interdependent stages.

The scientific value of the proposed approach lies in the fact that it systematises marketing automation as an *integrated economic process* and clarifies the place of its central elements. In particular, the study substantiates three points. First, marketing automation begins with analytical diagnosis, not with technology selection. Second, algorithms are an internal mechanism of the analytical block, while evaluation of economic effect belongs to the ex-ante project stage. Third, the logic of automation should be treated as cyclical, because monitoring reopens the analytical process and makes adaptation possible. This interpretation allows marketing automation to be studied not simply as a technological phenomenon, but as a structured form of market coordination under conditions of digital and increasingly machine-mediated exchange.

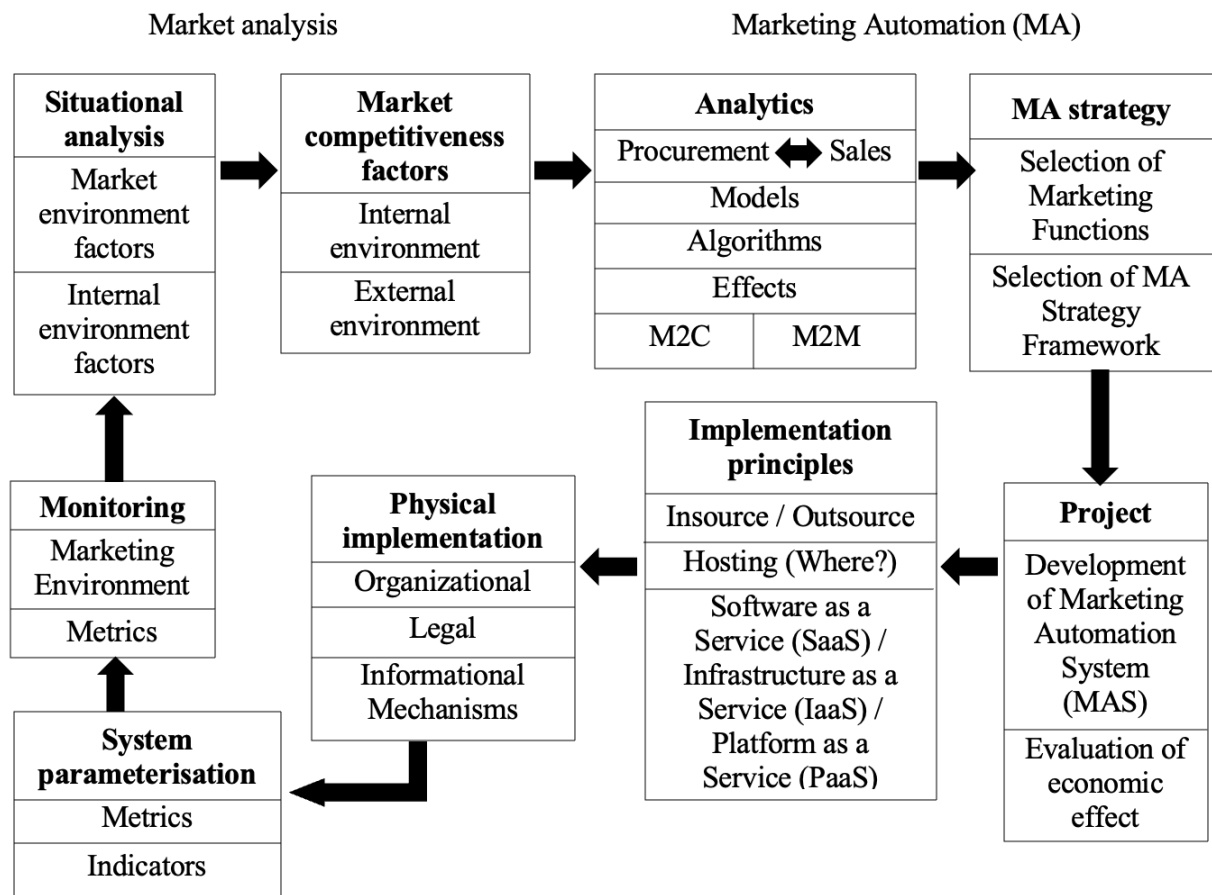


Figure 1. The Economic Logic of Marketing Automation Processes

Source: author's own work

Conclusions from this research and prospects for further developments in this area.

The study argues that marketing automation should be interpreted as a *coherent managerial and economic process* rather than as a set of isolated technical solutions. The proposed approach shows that automation acquires practical and strategic meaning only when it is connected with prior diagnosis of market conditions, justified selection of functions, an appropriate implementation model, and a measurable logic of control. In this sense, the article clarifies not only which elements form the automation process, but also how they are linked within a single managerial and economic framework. The proposed single conceptual scheme brings together stages that are often considered separately, explains them as parts of one continuous process and shows that algorithms should be treated as an

operating mechanism within the analytical contour, whereas the assessment of economic effect in the present model performs the role of prior project justification. Monitoring, in turn, is interpreted as a source of corrective feedback rather than as a merely final procedure.

The practical significance of the results lies in the possibility of using the proposed logic as a guide for managerial choice. It may support firms in determining where automation is appropriate, how broad its scope should be, how its architecture should be organised, and on what basis its expected usefulness should be assessed before deployment. This is especially important in environments where coordination increasingly depends on data exchange, platform infrastructures, connected systems, and partially autonomous interactions.

At the same time, the article opens the discussion. Further research may develop in several directions. One is empirical testing of the proposed model in different sectors in order to reveal how its structure changes across industrial, service, and consumer contexts. Another is the development of more precise approaches to the prior economic assessment of automation initiatives. A separate and increasingly important direction concerns the transformation of exchange processes under the growing role of AI agents, connected devices, and other non-human participants in market interaction.

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