

# MARKETING IN THE DATA-DRIVEN ERA: ANALYTICAL TOOLS AND DEVELOPMENT PERSPECTIVES

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**Abstract.** *The purpose* of this article is to explore the role of analytical tools in modern marketing and to assess their influence on decision-making, competitiveness, and consumer engagement in the context of the data-driven era. In particular, the study seeks to classify the main categories of analytical methods, determine the principles of their effective application, and identify the advantages and limitations of using analytics in practice. Special attention is given to the growing relevance of data-driven marketing strategies in conditions of digital transformation, the rapid development of big data technologies, and the increasing importance of artificial intelligence in shaping consumer behavior. *Methodology.* The research is based on a qualitative analytical approach that combines a comprehensive review of secondary sources, academic literature, industry reports, and practical case studies. A comparative analysis of several widely used analytical tools was carried out, including Google Analytics, Serpstat, KISSmetrics, and SurveyMonkey. These instruments were evaluated in terms of their functions, usability, advantages, and shortcomings. The study also applied a problem-oriented perspective, focusing on how analytics contributes to solving concrete business challenges, such as audience segmentation, campaign optimization, cost reduction, and ROI improvement. *The results* confirm that marketing analytics has evolved into a central strategic function rather than a supplementary activity. Its application enables companies to segment audiences with greater precision, optimize marketing investments, enhance personalization, and forecast consumer demand at both micro and macro levels. At the same time, the study highlights key risks, including misuse of statistical data, reliance on vanity metrics that do not reflect business outcomes, and ethical challenges related to privacy and transparency. The findings further emphasize the future potential of predictive and prescriptive models, as well as AI-driven tools, which are expected to transform marketing analytics into an even more powerful driver of competitiveness. *Practical implications.* The study formulates several recommendations for enterprises seeking to enhance their marketing performance through analytics. These include: developing integrated systems that connect CRM, ERP, and advertising platforms for end-to-end evaluation; investing in automation and advanced digital tools to ensure timely insights; prioritizing staff training to develop both technical and interpretive competences; applying analytics to consumer-centric strategies, with a strong focus on personalization; adhering to ethical standards of data use to preserve trust and ensure compliance with legal frameworks such as GDPR. Collectively, these measures allow companies not only to evaluate past performance but also to engage in proactive forecasting and innovation. The originality of this article lies in its integrated perspective that combines theoretical foundations with practical recommendations and comparative analysis of specific analytical tools. Unlike studies that treat analytics as an auxiliary technique, this research demonstrates its central role as a strategic instrument of modern marketing management. By linking micro-level insights into consumer behavior with macro-level market forecasting, the paper offers a holistic framework for understanding the impact of marketing analytics. The value of the study is reflected in its practical relevance for both small and large enterprises, providing them with clear guidelines on how to implement analytics effectively and sustainably in the data-driven era.

**Keywords:** marketing, analytics, analytical methods, digitalization, transformation, economics.

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## 1. Introduction

In the era of digital transformation, marketing is no longer limited to creative communication or persuasive advertising. Today, marketing decisions are largely shaped by data – its collection, interpretation, and strategic application. This process is known as *marketing analytics*, which integrates statistical methods, digital technologies, and business intelligence tools to transform raw data into actionable insights.

In today's rapidly developing digital technologies, growing competition and dynamic consumer demand, marketing is no longer just an art of intuition and experience. Instead, it increasingly relies on scientific approaches and evidence-based data. At the heart of this transformation are analytical methods – a set of tools that allow you to transform large volumes of unstructured information into practical management decisions. A modern marketer must not only think creatively, but also have the skills to work with analytics in order to create effective campaigns, adequately respond to market changes and predict consumer behavior. Marketing has become a flexible strategic management tool that integrates various approaches to studying the consumer, positioning goods and services, optimizing pricing policy and building effective communication with the target audience. Analytical methods play a significant role in this process, ensuring the systematic collection, analysis, generalization and interpretation of data for making informed marketing decisions. Analytics in marketing allows you to respond accurately and timely to changing market conditions, track trends and consumer preferences, identify the company's strengths and weaknesses, and predict future results.

Marketing has evolved into a flexible tool of strategic management that integrates diverse approaches to consumer research, product and service positioning, pricing optimization, and effective communication with target audiences. Analytical methods play a crucial role in this process by ensuring the systematic collection, processing, synthesis, and interpretation of data to support informed marketing decisions. The use of analytics in marketing enables timely and accurate responses to changing market conditions, facilitates the monitoring of trends and consumer preferences, helps identify organizational strengths and weaknesses, and supports the forecasting of future outcomes. In the

21st century, marketing has become increasingly dependent on digital technologies and large data sets (Big Data), which underscores the importance of advanced analytical skills and tools (Johnson, Sihi, Muzellec, 2021).

The aim of this study is to investigate the role of analytical tools in modern marketing within the data-driven era, with a particular focus on their impact on decision-making, competitiveness, and consumer engagement, as well as on identifying future development perspectives for marketing analytics in a rapidly changing digital environment. To achieve this aim, the research addresses several key objectives: to review the evolution of marketing analytics and define its conceptual foundations in the context of the data-driven economy; to classify and analyze existing analytical tools (descriptive, diagnostic, predictive, prescriptive) and evaluate their applications in marketing; to assess how data-driven tools influence audience segmentation, personalization, and customer journey optimization; to examine the contribution of marketing analytics to ROI improvement, strategic decision-making, and competitiveness of companies; to identify potential risks and ethical challenges of applying analytical methods in practice; to explore future perspectives related to artificial intelligence, machine learning, and big data integration; and finally, to develop practical recommendations for businesses and marketing professionals on the effective implementation of analytical tools in the data-driven era (Vesterinen, Colleagues, 2025).

## 2. Key Principles of Proper Analytics in Marketing

Marketing analytics opens entirely new horizons – from the microscopic analysis of individual customer interactions to macro-level forecasting of demand on national and global markets. In the context of digital transformation and the automation of marketing processes, the role of data and corresponding analytical methods is constantly increasing. This trend underscores the relevance of studying analytical approaches as an integral element of modern marketing activity.

Analytical methods in marketing represent a set of systematized approaches to the collection, processing, analysis, and interpretation of marketing information with the purpose of

supporting well-grounded managerial decision-making. These methods are equally applicable to strategic planning – such as long-term market positioning and investment decisions – and to tactical adjustments of marketing campaigns in response to immediate changes in consumer behavior or competitor actions.

The central purpose of these methods is to ensure that marketing decisions are based on empirical data rather than intuition or assumptions. By replacing guesswork with evidence-based insights, analytics helps organizations not only increase efficiency but also strengthen adaptability, enhance competitiveness, and develop more personalized relationships with customers in an increasingly dynamic and data-driven marketplace. The fundamental principles of effective marketing analytics are presented in Figure 1.

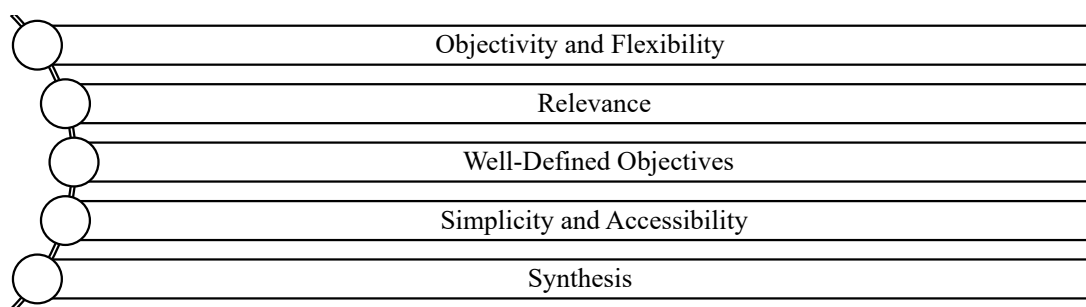
The primary requirement of effective marketing analytics is objectivity. This means identifying and examining the data that directly affect the problem at hand, while avoiding the influence of personal biases. Insights should never be derived from the subjective opinions of an analyst, a manager, or even external stakeholders who lack empirical evidence. Flexible analysis also requires looking at the same dataset from multiple perspectives, testing different hypotheses, and allowing the data to challenge prior assumptions. In this regard, objectivity and flexibility act as safeguards against distorted conclusions that can harm decision-making rather than support it.

Analytics should never be conducted "for the sake of analytics". Companies often fall into the trap of initiating research because competitors are doing so, because they heard it recommended at a seminar, or simply because it appears to be standard practice. However, true marketing analytics must be problem-

driven: it should aim to address specific business needs. If a company cannot clearly articulate where the «pain point» lies or communicate this issue to the analyst or agency, the analysis will not provide meaningful solutions. For example, conducting a complex evaluation of advertising channels is pointless if there is no ability to track the customer journey end-to-end. Without cross-channel, or "end-to-end", analytics, decision-makers will lack the necessary context to interpret the performance of individual marketing activities.

The effectiveness of marketing analytics is directly proportional to the clarity of the research question. Vague demands such as "we want all metrics to increase simultaneously" are bound to fail because they do not provide analysts with a measurable target. On the other hand, a task like "we want to reduce marketing expenses with minimal negative impact on sales" is much more actionable. In such cases, an analyst can identify inefficient channels, outdated audience segments, and areas where current campaigns can be optimized. Thus, the formulation of precise and measurable objectives is essential for generating insights that are both practical and relevant.

Finally, marketing analytics should not be treated as an esoteric practice accessible only to technical specialists. The results of analysis must be understandable even to individuals without advanced digital literacy. A properly designed report should communicate insights clearly, using concise explanations, visualizations, and straightforward recommendations. This distinguishes genuine analytics from the overwhelming reports often delivered by agencies – hundreds of pages filled with obscure graphs, charts, and technical jargon that provide little real value to decision-makers (Rehman, Colleagues, 2024; Petrescu, Krishen, 2024).



**Figure 1. The fundamental principles of effective marketing analytics**

Source: *Big Data in Marketing, Marketing Analytics in 2024 Conferences* (Rehman, Colleagues, 2024; Petrescu, Krishen, 2024)

In summary, smart marketing analytics is built on four pillars: objectivity, relevance, precision, and simplicity. Together, these principles ensure that analytics is not reduced to a ritualistic practice but becomes a genuine management tool that supports growth and innovation. A company that follows these principles can transform raw data into strategic knowledge, minimize risks, and improve competitiveness in both digital and offline markets.

### 3. Must-Have Tools for Marketing Analytics

While any analytical tool can be endlessly customized – integrating complex systems, adding API connections, and importing vast amounts of data – this level of sophistication is usually relevant only for large enterprises and retailers managing hundreds of thousands of products. In most other cases, businesses can achieve significant results with a standard toolkit that includes essential features. Below are some of the most widely used and effective tools for marketing analytics, each providing distinct advantages for businesses of different scales. Table 1 presents a comparative analysis of the main tools for effective marketing research (Nan, Yuping, Kongjue, 2024; Gupta, Colleagues, 2021).

This comparison demonstrates that each tool occupies a distinct niche in marketing analytics. Google Analytics provides a universal baseline for web performance tracking, Serpstat is essential for SEO/SEM analysis, KISSmetrics offers deep behavioral and funnel insights, while SurveyMonkey

delivers primary data directly from consumers. Their combined use provides businesses with a comprehensive analytical ecosystem – from digital traffic evaluation to consumer sentiment measurement.

After summarizing the information regarding the key advantages and limitations of marketing analytics instruments, we consider it appropriate to provide a detailed description of each of these elements separately (Nan, Yuping, Kongjue, 2024; Gupta, Colleagues, 2021).

1. Google Analytics remains one of the fundamental platforms for tracking and analyzing digital performance. Its dashboard consolidates all statistics and KPIs in one place, using widgets and visualizations that simplify perception and reduce the need to switch between windows, tabs, or documents:

- UTM tags make it possible to track not only advertising channels but also specific groups, segments, and even individual ads. By appending tags to URLs, marketers can determine how many conversions were generated by a particular campaign, banner, or keyword.
- Automated reports allow users to configure periodic email updates with chosen metrics, ensuring that decision-makers receive timely insights without manually running reports.
- Intelligence Events notify users in real time about anomalies or issues with campaigns, such as when a specific ad group stops performing. This prevents losses that might otherwise be discovered only weeks later.

Table 1

#### Comparative analysis of the main tools for effective marketing research

| Tool             | Key Functions                                                                                  | Advantages                                                                                    | Limitations                                                                                |
|------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Google Analytics | Website traffic monitoring<br>UTM tracking<br>Automated reports<br>Intelligence Events         | Free and widely accessible<br>Strong visualization dashboard<br>Real-time notifications       | Limited for advanced funnel analytics<br>Requires integration for end-to-end tracking      |
| Serpstat         | Domain analysis<br>Keyword and semantic research<br>Competitor tracking<br>Position monitoring | Comprehensive SEO/SEM analysis<br>Identifies competitive gaps<br>Supports traffic diagnostics | Focused mainly on SEO/SEM<br>Subscription-based for advanced features                      |
| KISSmetrics      | Custom event tracking<br>Sales funnel analytics<br>User-level behavioral data                  | Deep customer journey insights<br>Strong funnel visualization<br>Enables precise segmentation | More complex to set up<br>Costly for small businesses                                      |
| SurveyMonkey     | Professional survey creation<br>Adaptive question flow<br>Advanced filtering                   | Direct access to customer opinions<br>Customizable survey design<br>Rich segmentation options | Data depends on willingness to respond<br>Limited integration with broader analytics tools |

2. Serpstat is a powerful SEO and SEM analytics platform that provides both domain-level and keyword-level insights:

- Domain analysis generates comprehensive reports on a website's performance, competitor activity, and contextual advertising.
- Semantic analysis helps identify high-performing keywords used by competitors, expand the existing semantic core of a website, and discover new opportunities for ranking.
- Position monitoring delivers timely updates on search visibility and keyword rankings, enabling businesses to diagnose traffic drops and monitor brand-related search queries.

3. KISSmetrics offers a more advanced perspective on customer behavior and the sales funnel:

- Custom events can be defined to track specific user actions that may not be easily measurable in other analytics tools.
- Sales funnel analytics provide detailed data for each stage of the funnel, allowing marketers to segment users and implement targeted actions, such as sending tutorial emails, requesting reviews, or offering premium upgrades.
- Personal-level data enables businesses to monitor detailed customer journeys – for example, identifying when a user first attended a webinar, how many purchases they have made since 2015, and their most recent interaction with a promotional email.

4. SurveyMonkey specializes in collecting customer insights through professional surveys.

- Custom survey design allows the integration of brand elements such as logos and themes, ensuring the survey aligns with corporate identity.
- Adaptive scenarios enable dynamic question flow depending on user responses. For example, if a respondent indicates they do not read the corporate blog, follow-up questions can shift to understanding what type of content would engage them.
- Advanced filtering helps segment results by age, location, source, or other criteria, enabling quick and targeted analysis of audience groups.

Together, these tools – Google Analytics, Serpstat, KISSmetrics, and SurveyMonkey – form a robust foundation for marketing analytics. They allow businesses to move beyond intuition and embrace evidence-based decision-making. From tracking website traffic and evaluating SEO performance to analyzing customer journeys and collecting direct feedback, these instruments

provide both micro- and macro-level insights. For small and medium-sized businesses, the "standard toolkit" ensures efficiency without excessive complexity, while for large enterprises, these tools can be expanded with APIs and advanced integrations (Wong, 2023).

#### 4. Conclusions

The results of this study clearly demonstrate that analytical tools are no longer optional add-ons but essential components of marketing activity in contemporary enterprises. They provide the foundation for understanding consumer behavior, optimizing resource allocation, and enhancing the effectiveness of marketing campaigns. Proper use of analytics allows companies to move beyond intuition, applying evidence-based methods to evaluate past performance, detect inefficiencies, and anticipate future market trends. In this sense, analytics functions as a strategic compass that guides decision-makers toward sustainable growth and competitiveness. Enterprises that integrate analytical instruments effectively are able to increase the return on marketing investments, develop consumer-centric approaches, and respond more flexibly to market dynamics.

At the same time, the research highlights that the effectiveness of marketing analytics depends on the way it is implemented. To enhance the role of analytics, enterprises should prioritize several key directions. First, they must integrate systems and data sources into unified analytical platforms, enabling cross-channel and end-to-end evaluation of customer journeys. Second, it is crucial to invest in advanced digital tools and automation technologies – from web analytics dashboards to AI-driven predictive models – which provide deeper insights and faster decision-making. Third, enterprises need to focus on staff training and competence development, ensuring that marketing specialists are not only creative strategists but also skilled data interpreters. Fourth, analytics should be applied to personalization and consumer-centric strategies, enabling companies to tailor communication, products, and services to the needs of specific customer segments. Finally, businesses must adhere to the principle of ethical data use, ensuring transparency, compliance with international standards such as GDPR, and the building of long-term trust with customers.

Based on these considerations, several practical recommendations can be formulated for enterprises seeking to improve their marketing effectiveness through analytics. First, they should begin with a clear definition of analytical objectives, focusing on solving specific business challenges rather than collecting data for its own sake. Second, a phased approach is advisable: companies can start with basic descriptive analytics

and gradually move toward more sophisticated diagnostic, predictive, and prescriptive models. Third, analytics should be applied not only for retrospective evaluation of past activities but also for proactive forecasting and strategic planning. Finally, enterprises should foster a data-driven organizational culture, in which decision-making is grounded in evidence and analytical reasoning rather than intuition or managerial preferences.

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