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DESIGN OF A PLATFORM FOR DIGITAL CAMPAIGN AUTOMATION AND PERSONALIZATION

PROIECTAREA UNEI PLATFORME DE AUTOMATIZARE ȘI PERSONALIZARE A CAMPANIILOR DIGITALE

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Abstract: *În contextul transformării digitale accelerate, automatizarea și personalizarea campaniilor de marketing au devenit esențiale pentru creșterea eficienței comunicării și îmbunătățirea experienței utilizatorilor. Actualitatea cercetării este determinată de necesitatea dezvoltării unor soluții informatice accesibile și flexibile, capabile să gestioneze volume mari de date și să permită adaptarea mesajelor în funcție de comportamentul utilizatorilor. Scopul lucrării constă în proiectarea unei platforme pentru automatizarea și personalizarea campaniilor digitale, orientată spre simplificarea proceselor și îmbunătățirea utilizabilității pentru utilizatori non-tehnici. Metodele de cercetare utilizate includ analiza comparativă a platformelor existente de marketing digital, modelarea conceptuală a sistemului și proiectarea arhitecturii modulare a soluției propuse. Rezultatele obținute constau în definirea unei arhitecturi formate din trei module principale: modulul de creare a conținutului e-mailului, modulul de segmentare a audienței și modulul de automatizare a fluxurilor de campanii. Platforma propusă demonstrează posibilitatea reducerii complexității sistemelor existente, oferind în același timp funcționalități esențiale precum personalizarea conținutului, previzualizarea în timp real și segmentarea avansată a utilizatorilor.*
Key words: *marketing digital, automatizare, personalizare, campanii digitale, segmentare, platformă software*
JEL CLASSIFICATION: M15, M31

INTRODUCTION

Amid ongoing digital transformation, organizations are increasingly dependent on automated platforms to manage marketing activities and customer engagements. Digital campaigns have progressed from basic mass communication tools to sophisticated, data-driven processes that necessitate personalization and real-time adaptation. The increasing volume of customer data and heightened demand for targeted communication have rendered manual campaign management inefficient and susceptible to errors.

MAIN CONTENT

Prior research underscores the significance of automation and personalization in enhancing marketing performance and customer engagement. Davenport (2010) demonstrates that data-driven decision-making improves business outcomes by enabling more precise targeting and segmentation. Alter (2013) emphasizes the contribution of information systems to organizational workflow optimization. Despite the advanced features of contemporary marketing platforms, many are characterized by high complexity and challenging learning curves. Studies indicate that user-centered design and modular architectures can substantially increase system adoption and operational efficiency (Orlikowski, 2007). Consequently, there is a clear need for simplified platforms that maintain essential functionalities while improving accessibility.

To address these challenges, this research employs a system design methodology in conjunction with comparative analysis, utilizing contemporary development tools and technologies (Microsoft, 2024). Based on this methodological framework, the following research methods were applied:

Analysis of existing marketing automation platforms;

Identification of user requirements based on practical use cases;
Conceptual modeling of system architecture;
Functional decomposition of platform components.

Building upon these methods, the design process adopts a modular approach, which allows for the independent development and integration of system components. This strategy ensures that each module can be refined and expanded without affecting the overall system functionality.

The proposed platform consists of three main modules:

Email Content Module

This module enables users to build and customize email campaigns by either dragging and dropping pre-made components or editing the HTML directly. The module's primary features are:

Instant preview (desktop and mobile);
Customizable subject and preheader;
Dynamic content using personalization fields.

Audience Segmentation Module

This component enables the definition of target audiences through:

Visual filtering (drag-and-drop conditions);
SQL-based segmentation for advanced users;
Integration with customer data sources.

Campaign Flow Module

The campaign flow module offers a streamlined workflow builder that allows users to:

Define triggers and conditions;
Create decision paths;
Automate communication sequences.

The platform's implementation is supported by modern development environments and programming frameworks, which enable rapid development and system scalability (Microsoft, 2024).

Table 1. Detailed functionalities of the proposed platform modules

Module	Functionality	Technical Description	Practical Benefit
Email Content	Drag-and-drop editor	Reusable components (text, image, button) configurable through properties	Enables fast email creation without technical skills
Email Content	HTML editor	Direct editing of HTML code for full customization	Provides flexibility for advanced users
Email Content	Responsive preview	Real-time rendering for desktop and mobile views	Reduces design and rendering errors
Audience	Visual segmentation	Rule-based filtering	Improves audience targeting accuracy
Audience	SQL-based queries	Advanced segmentation using database queries	Allows precise control over data selection
Flow	Workflow builder	Visual Interference for defining campaign sequences	Simplifies campaign automation
Flow	Conditional Logic	Branching based on user behavior and conditions	Enables dynamic personalization
Flow	Event-based triggers	Automatic campaign initiation based on events/actions	Supports real-time campaign execution

Source: Author's elaboration

Table 1 presents the modular structure of the proposed platform, emphasizing the integration of user-friendly and advanced functionalities. The inclusion of visual tools alongside technical features ensures accessibility for non-technical users and flexibility for advanced users. To elucidate

these interactions, the operational flow of the platform must be examined, encompassing data input, campaign execution, and performance evaluation.

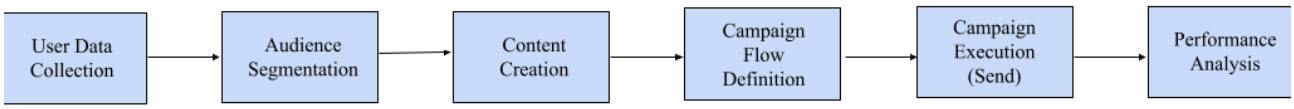


Figure 1. Operational workflow of digital campaign automation and personalization
Source: Author's elaboration

Figure 1 depicts the operational workflow of the proposed platform, highlighting the sequential and iterative aspects of digital campaign management. The process begins with data collection and segmentation, proceeds to content creation and the establishment of campaign logic, and culminates in campaign execution. Subsequently, performance metrics are analyzed to evaluate user engagement and campaign effectiveness. This workflow illustrates how the modular platform supports continuous optimization of digital campaigns.

CONCLUSIONS

The findings demonstrate the feasibility of designing a simplified yet functional platform for digital campaign automation and personalization. By prioritizing modularity and user experience, the proposed solution addresses prevalent challenges such as system complexity and restricted accessibility. In summary, the principal contributions of this study are as follows:

Identification of essential modules for campaign management.

Proposal of a scalable architecture.

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