



Article

Improving Social Media Management in Higher Education Based on Digital Marketing

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Abstract: This article examines the theoretical, methodological, and practical aspects of managing social media activities in higher education institutions based on digital marketing technologies. It explores the specific characteristics of the higher education sector, the organization of communication with multi-segment target audiences, the development of academic brand reputation on digital platforms, and the assessment of social media performance. Using public higher education institutions in the Bukhara region as a case study, the current state of social media activities is analyzed, and an approach integrating audience segments, Customer Path stages, and digital platforms is substantiated. A comprehensive social media management model combining institutional and organizational structure, process architecture, content strategy, a regulatory and ethical framework, and a monitoring system is described. Furthermore, directions for improving the effectiveness of social media management through the application of Artificial Intelligence and Big Data technologies are proposed.

Keywords: digital marketing, social media, higher education institution, social media management, digital transformation, content strategy, KPI, DMSI, artificial intelligence, Big Data, academic brand, strategic management

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1. Introduction

The acceleration of digitalization processes in the global economy is fundamentally changing the content, tools and management mechanisms of marketing activities [1], [2], [3]. Digital platforms are turning from a means of complementing traditional communication channels into an important management instrument that shapes strategic relationships between an organization and its target audience [4], [5]. This trend is also clearly manifested in the higher education sector, increasing the importance of social media platforms in establishing effective communication with applicants, students, parents, graduates, employers and the academic community.

The rapid development of the digital marketing market and the social media management market is characterized by the widespread use of artificial intelligence, Big Data, short video content, influencer marketing and personalized communications [6]. This requires higher education institutions to organize social media activities not only as a means of disseminating information, but also as a strategic management system that serves to increase academic competitiveness, strengthen brand reputation and build sustainable relationships with target audiences.

In Uzbekistan, the digitization of the higher education system, increasing the international competitiveness of higher education institutions and strengthening their academic reputation are also identified as priority tasks. In particular, the transformation of higher education institutions into internationally competitive scientific and intellectual

centers and the development of digital management mechanisms reinforce the need to form an effective digital communication system in higher education.

Based on this, the purpose of the article is to identify the specific features of managing social media activities in higher education institutions based on digital marketing technologies and to substantiate scientific and practical proposals for improving its comprehensive management mechanisms.

2. Materials and Methods

The issues of digital marketing and social media management have been studied in foreign scientific literature based on various theoretical approaches. The studies of scientists such as P. Kotler, D. Chaffey, D. Ryan, P.R. Smith cover the conceptual, strategic and instrumental aspects of digital marketing [1], [2], [3], [7]; the studies of A.M. Kaplan, M. Haenlein and J. Kietzmann cover the communicative capabilities of social media platforms [4], [8]; and the works of J. Hemsley-Brown, I. Oplatka, F. Maringe and F. Pucciarelli cover the issues of higher education marketing and the competitiveness of universities [9], [10], [11].

A comparative analysis of existing definitions of digital marketing in the study showed that they do not fully cover some important aspects specific to the higher education sector. In particular, communication with the academic community, university brand reputation, academic competitiveness and multidisciplinary audience segmentation are not sufficiently taken into account [12]. On this basis, it is proposed to interpret digital marketing in higher education institutions as a complex system of activities aimed at managing interactive relations with a multidisciplinary audience through artificial intelligence, Big Data and social media platforms, increasing brand reputation, academic competitiveness and economic efficiency.

In the research process, the methods of analysis and synthesis, induction and deduction, comparative and content analysis, systematic approach, monographic observation, expert survey, statistical and economic analysis were used. The object of the research was the system of managing social media activities based on digital marketing technologies in state higher education institutions of the Bukhara region.

3. Results

The marketing activities of higher education institutions differ from the marketing of commercial organizations in a number of aspects. The study identifies six characteristics of social media management in higher education: the unique nature of the educational service, long-term customer cycles, a multidisciplinary audience, seasonality, dependence on academic reputation, and local specificity [9], [10], [11]. These characteristics indicate that the direct application of universal commercial marketing models for higher education institutions is insufficient.

It is also necessary to integrate into the classical management principles such as academic integrity, transparency and openness, confidentiality and protection of personal data, cultural sensitivity and national values, compliance with public policy, two-way communication and feedback, and audience differentiation. Such an approach ensures that social media activities are consistent with the academic and social mission of higher education, as well as with marketing goals.

When assessing social media activities in higher education institutions of the Bukhara region, traditional indicators such as Reach, Engagement Rate, Conversion Rate and NPS do not fully reflect regional and institutional characteristics. Therefore, an integrated KPI methodology has been developed that combines the audience segment, Customer Path stage and digital platform into a single analytical system.

The methodology combines six audience segments - applicant, current student, parent, graduate, employer and foreign applicant; Aware, Appeal, Ask, Act and Advocate stages of the Customer Path 5A model; Telegram, Instagram, Facebook, YouTube and TikTok platforms. As a result, $6 \times 5 \times 5 = 150$ differentiated analytical units are formed.

Along with universal KPIs, KTI - Content Language Index, ORK - Family Reach Coefficient, MAD - Neighborhood Amplification Level, CCBI - Cross-Channel Brand

Index and RTB - Resource-Adjusted Benchmark indicators are proposed, which take into account the cultural and linguistic characteristics of the region. These indicators are combined into an integral index DMSI - Digital Marketing Strength Index based on the weights determined by the AHP method.

The DMSI methodology has been approved in four state higher education institutions of the Bukhara region. According to the results, DMSI at Bukhara State Medical Institute was 65.1 points, at Bukhara State Pedagogical Institute 63.4, at Bukhara State Technical University 65.5, and at Bukhara State Technical University 50.0 points. The internal consistency of the methodology was confirmed by the Cronbach Alpha indicator of 0.92.

Based on the conducted analyses, a five-block complex management model of social media management in higher education institutions was developed. The model combines the institutional-organizational structure, process architecture, five-dimensional content strategy, normative-ethical framework, and DMSI-based monitoring system into a single management ecosystem (see diagram 1).

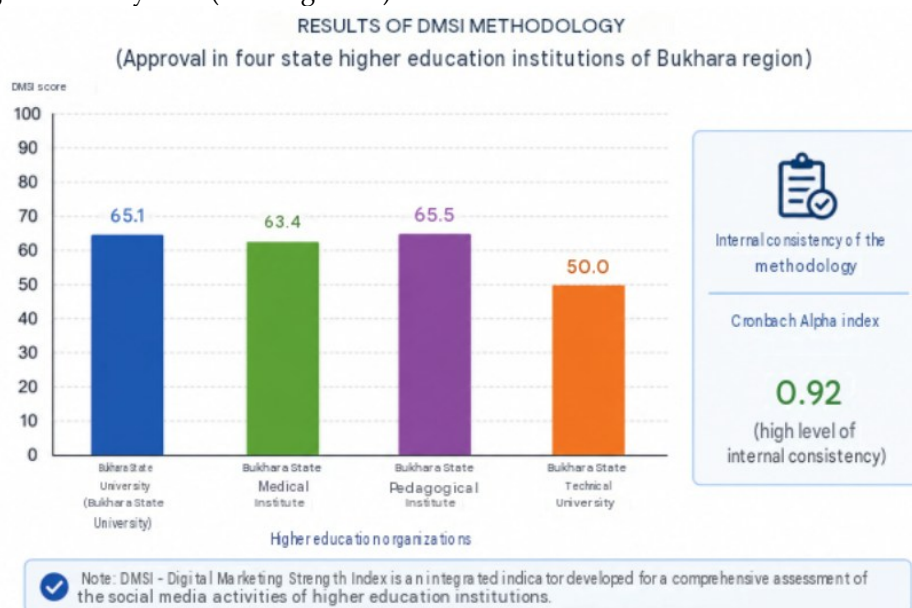


Figure 1. Integrated Five-Block Social Media Management Model for Higher Education Institutions

The first block involves the formation of a “Digital Marketing and Social Media Management Department” in a higher education institution. The second block involves the organization of content production, crisis communication, cross-platform publication coordination and performance analysis processes based on the BPMN 2.0 standard. The third block covers content strategy, the fourth block covers social media policy and ethical standards, and the fifth block covers monitoring based on DMSI.

The content strategy proposes to allocate 40% to academic and scientific achievements, 20% to student and campus life, 15% to graduate and career stories, 15% to Bukhara cultural heritage, and 10% to educational and media literacy content [13], [14]. As a result of the integration of Audience × Customer Path × Platform × Format × Language dimensions, 4,200 potential content options will be formed, and it is planned to select 80–120 of the most effective options per year based on the AHP method.

The model is proposed to be implemented in three stages over a period of 18 months: 1–6 months — pilot, 7–12 months — expansion, 13–18 months — consolidation. According to calculations, as a result of this mechanism, there is a possibility of increasing the average value of DMSI from 61 to 81 points across four higher education institutions.

Modern trends in digital marketing require the systematic use of artificial intelligence and Big Data capabilities in higher education institutions [15]. For this purpose, the study developed a four-module mechanism consisting of intelligent content creation, Big Data predictive analysis, automated operational activities, and strategic decision-making.

In the intelligent content creation module, generative AI integrates with ethical checkpoints such as academic integrity, cultural relevance, source authenticity, and personal data protection. The Big Data module serves for audience segmentation, campaign effectiveness forecasting, sentiment monitoring, and early detection of viral risks. The automated operational module covers post scheduling, cross-platform publishing, chatbot, A/B testing, and CRM functions. The strategic module summarizes data from previous modules and supports management decisions.

According to research estimates, this mechanism allows you to reduce content creation time by about 40%, operational time by 50%, increase analytical accuracy by 35%, and the quality of strategic decisions by 25%. At the same time, it is projected that the DMSI indicator will increase by an additional 5 points and the investment of 200 million soums will pay for itself within 18–24 months.

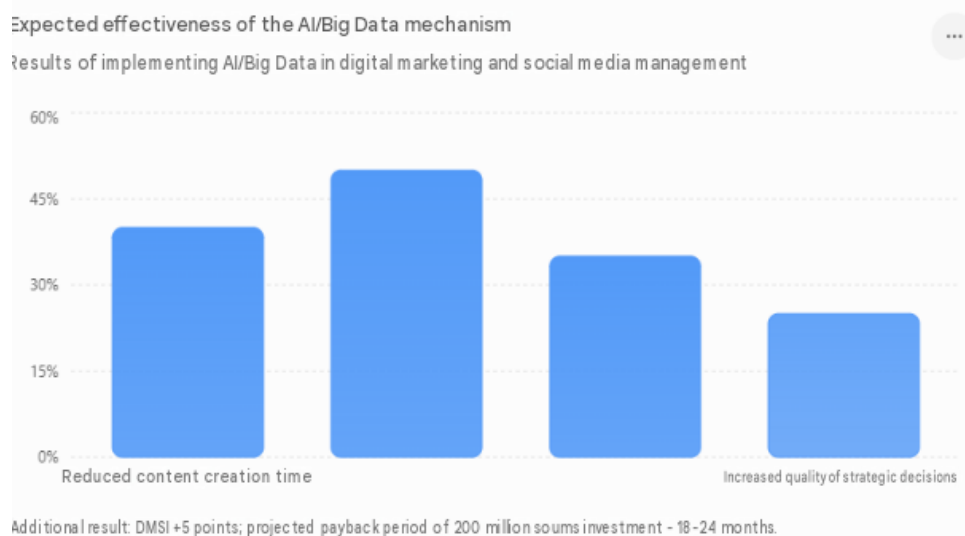


Figure 2. Four-Module AI and Big Data-Based Mechanism for Social Media Management in Higher Education

In order to comprehensively assess the effectiveness of investments in digital marketing, the DMEEC - Digital Marketing Economic Efficiency Coefficient methodology has been proposed. It combines the components of operational efficiency (OS), content efficiency (KS), audience value (AQ) and brand equity (BK):

$$\text{DMEEC} = 0.25 \times \text{OS} + 0.25 \times \text{KS} + 0.25 \times \text{AQ} + 0.25 \times \text{BK}.$$

The equal weight of the components was determined based on the AHP method and the consensus of 24 experts.

4. Discussion

The findings of this study demonstrate that effective social media management in higher education requires a strategic approach that extends beyond conventional promotional activities and integrates audience segmentation, platform characteristics, institutional reputation, content management, and performance measurement within a unified digital marketing system. This finding is consistent with previous studies emphasizing that higher education institutions operate in a distinctive competitive environment in which institutional image, academic reputation, and communication quality strongly influence stakeholder perceptions and university choice [9]–[11]. The proposed Audience × Customer Path × Platform framework further develops this perspective by recognizing that applicants, students, parents, graduates, employers, and international applicants interact with universities through different digital touchpoints and therefore require differentiated communication strategies. This approach also supports the argument of Constantinides and Zinck Stagno [12] that social media

marketing in higher education should be based on audience segmentation rather than on uniform communication practices. Moreover, the development of the Digital Marketing Strength Index (DMSI) provides a more context-sensitive assessment mechanism than relying exclusively on conventional indicators such as reach, engagement, and conversion, because it incorporates linguistic, cultural, cross-channel, and resource-adjusted dimensions that are particularly relevant to the regional context of Bukhara. The proposed five-block management model also reinforces the view that successful university social media performance depends on the integration of organizational structure, standardized processes, content strategy, ethical governance, and continuous monitoring rather than on isolated social media activities. This interpretation is consistent with the findings of Rutter et al. [13] and Peruta and Shields [14], who showed that strategic and interactive use of social media can contribute to university branding, stakeholder engagement, and recruitment performance. At the same time, the proposed integration of Artificial Intelligence and Big Data represents an important extension of existing digital marketing practices by enabling more efficient content creation, predictive audience analysis, automated communication, and evidence-based managerial decision-making. This direction is also aligned with recent research highlighting the increasing role of AI-supported communication in university promotion [15]. Taken together, the results suggest that the competitiveness of higher education institutions in the digital environment increasingly depends on their ability to transform social media from a simple information-distribution channel into an integrated, measurable, ethically managed, and data-driven strategic communication ecosystem.

5. Conclusion

The results of the study showed that managing social media activities in higher education institutions based on digital marketing technologies is an important factor in increasing academic competitiveness, strengthening brand reputation, and ensuring effective communication with target audiences. The proposed DMSI integral index, a five-block integrated management model, and a content strategy for assessing social media effectiveness allow for systematic organization and monitoring of social media activities. Also, a four-module mechanism based on artificial intelligence and Big Data technologies expands the possibilities of content creation, audience analysis, marketing process automation and strategic decision support. The RMISK methodology serves to comprehensively assess the economic effectiveness of digital marketing activities by integrating operational efficiency, content efficiency, audience value and brand equity.

In general, the gradual introduction of the proposed approaches into the practice of higher education institutions will serve to modernize social media management, effectively use resources, improve the quality of digital communication and strengthen the competitiveness of higher education institutions in the national and international education market.

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