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## **TOOLS FOR BUILDING LONG-TERM CUSTOMER LOYALTY IN THE VENDING INDUSTRY**

**Trofimov Semen Valerevich**

Individual entrepreneur  
Khabarovsk, Russia

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### **ABSTRACT**

This article examines the use of various tools aimed at establishing and strengthening long-term customer loyalty in the vending industry. The relevance of the topic is determined by the current high level of competition in this sector, combined with the clear necessity for creating effective consumer retention strategies based on service personalization, environmental responsibility, and the deliberate implementation of the latest technologies in practice. The study aims to identify key factors influencing customer loyalty, systematize relevant tools, and develop recommendations (in the form of an action algorithm) for integrating these tools into organizational activities. The article analyzes various approaches, with a particular focus on digital solutions, such as intelligent management systems and social initiatives, capable of strengthening emotional connections. It identifies contradictions between a focus on technological innovations and the need to consider the human factor in consumer interaction processes. The conclusion emphasizes that successful long-term loyalty strategies should be based on a comprehensive approach. The author's contribution includes the systematization of modern tools, an examination of their adaptation to the vending industry, and the proposal of an algorithm combining technological and social aspects to enhance loyalty. The materials presented are valuable for marketers, vending business operators, researchers in digitalization, and entrepreneurs interested in the sustainable development of the industry.

**KEYWORDS:** automation, vending industry, customers, loyalty, personalization, sustainability, digital technologies

### **INTRODUCTION**

The vending industry, based on the concept of automated delivery of goods and services, is undergoing intensive development in the context of digitalization and the rapidly growing customer demand for convenience and efficiency. However, in the face of high competition and low differentiation of offered products, the need to develop tools aimed at building and strengthening long-term customer loyalty has become evident.

The research problem lies in the fact that, despite the increasing popularity of vending machines, companies face challenges in retaining a consistent audience. The limited interaction between consumers and the brand, along with the complexity of creating a personalized experience, necessitates the adoption of innovative approaches and solutions to enhance customer attachment to the service.

Given these considerations, it is crucial to identify key tools that contribute to sustainable loyalty, analyze their effectiveness, and propose recommendations for their practical implementation in the vending industry.

### **MATERIALS AND METHODS**

Research on the subject addresses issues of sustainable development, technological innovation, marketing approaches, and management. These areas enable a multifaceted perspective on the problem.

In the publication by A. Bertossi [1], emphasis is placed on integrating ESG principles into the vending industry. The author argues that using environmentally friendly materials and optimizing the energy consumption of vending machines reduce the carbon footprint and strengthen emotional connections with customers who value socially significant initiatives.

Digitalization and automation are viewed as key tools for enhancing consumer loyalty. M. Grzegorowski and colleagues [2] explore ways to mitigate risks in this area. J. Xu and co-authors [10] analyze methods of product recognition and detection in smart vending machines, which improve service quality by accelerating device operation.

S. Uzun and co-authors [7] propose a novel approach to developing internal systems that encompass user interface design and improved operational efficiency. This approach fosters a unique consumer experience, positively influencing customer retention.

The impact of the pandemic on consumer behavior is explored in research by Ja. Majerova and L. Vartiak [3]. The authors note that the crisis became a global milestone, reshaping consumer expectations toward contactless and safe interaction methods. D. Stoyanov [6] examines marketing strategies for developing vending channels using the example of French university campuses, highlighting the importance of adapting to local needs to strengthen loyalty.

P. Sinansari and colleagues [5] analyze supply chain risks in the vending industry. They emphasize the need for comprehensive consideration of factors affecting logistics and inventory management to ensure uninterrupted machine operation and customer satisfaction.

M.N. Md Mansor and co-authors [4] discuss the challenges associated with contract extensions in the vending business. The researchers stress that timely resolution of these issues directly impacts the duration of partnerships and the level of consumer trust in the brand.

Additionally, statistical reports [8, 9] provide data on current trends and forecasts for the global vending machine market. These summaries allow for an evaluation of which segments and approaches hold the greatest potential for fostering long-term loyalty.

Modern sources demonstrate a diversity of perspectives on the topic. A primary contradiction lies in some authors emphasizing the technological aspect [2, 10], while others focus more on ecological responsibility and social significance [1, 3]. The influence of emotional factors on long-term customer attachment and the integration of eco-technological initiatives into a unified strategy remains insufficiently explored.

In a methodological context, this study employs a comprehensive approach that relies on methods of statistical analysis, comparison, systematization, and generalization.

## **RESULTS AND DISCUSSION**

According to Research Nester, the vending machine industry exceeded USD 19.5 billion in 2023. By 2036, the market is projected to reach USD 50 billion, with an average annual growth rate of 7.60% from 2024 to 2036 [9].

Similarly, a report by Mordor Intelligence estimates the global market in this field at USD 21.57 billion in 2024, with a forecasted growth of over 25% by 2029, corresponding to an annual growth rate of 5.18% [8] (Fig. 1).



**Fig. 1.** The results of forecasting the volume of the vending machine market [8]

The presented summaries emphasize the significant potential and dynamic growth of the vending industry globally, with distinct trends observed across various regions and market segments.

In defining the concept, customer loyalty in the context of vending services represents a combination of emotional attachment and rational preference for a specific brand or operator. Unlike traditional retail, customer interactions with vending machines are short-term, which significantly complicates efforts to develop the category of "attachment" [2, 10].

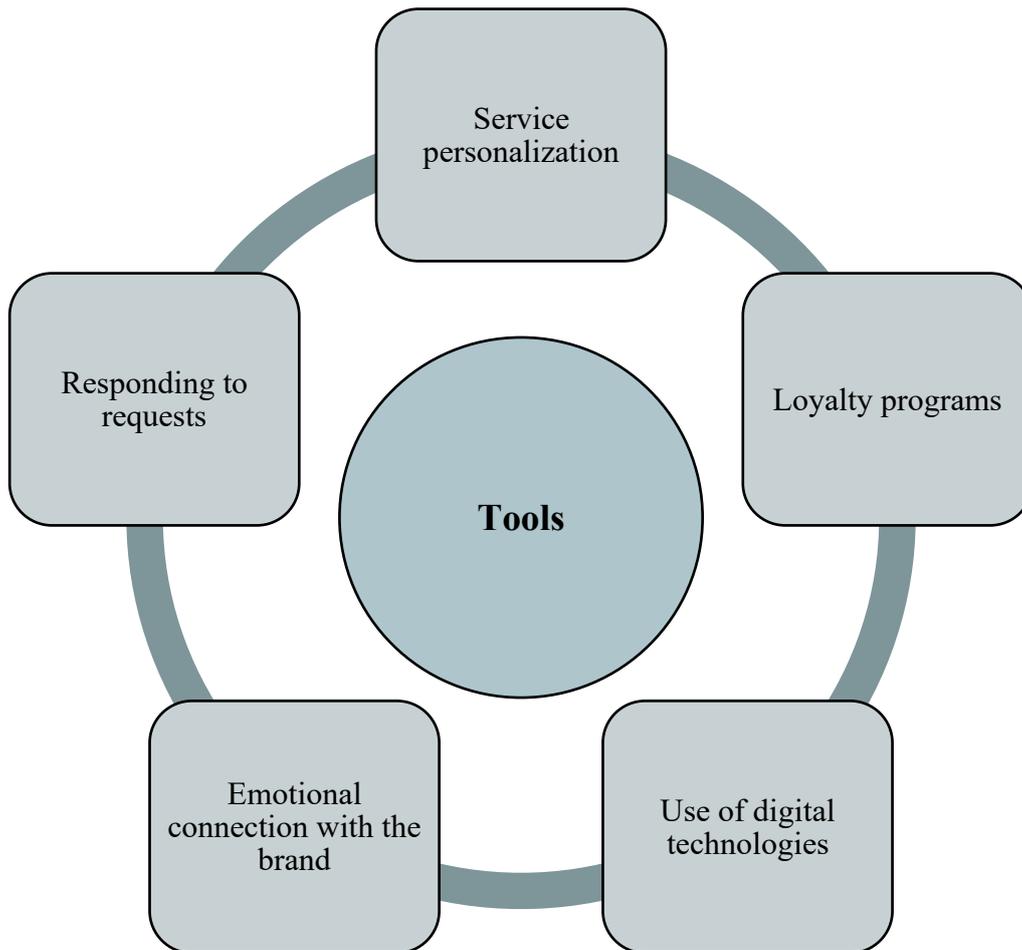
Key factors influencing loyalty include:

- the quality of offered products;
- the convenience of using vending machines;
- transparency in pricing;
- the availability of additional features (such as mobile payment options or loyalty programs).

These aspects necessitate a systematic approach to developing tools that not only meet basic customer

needs but also exceed their expectations.

Further discussion will involve the enumeration of specific tools (Fig. 2) followed by a detailed characterization.



**Fig. 2.** Systematization of key tools for building long-term customer loyalty in the vending industry (compiled by the author based on [1, 3-5, 7])

Personalization emerges as one of the most critical factors in strengthening the bond between consumers and brands. Leveraging data on purchases, preferences, and behavior facilitates the creation of tailored offers. For instance, implementing recommendations on vending machine screens or sending notifications with promotional offers through mobile applications increases the likelihood of repeat purchases.

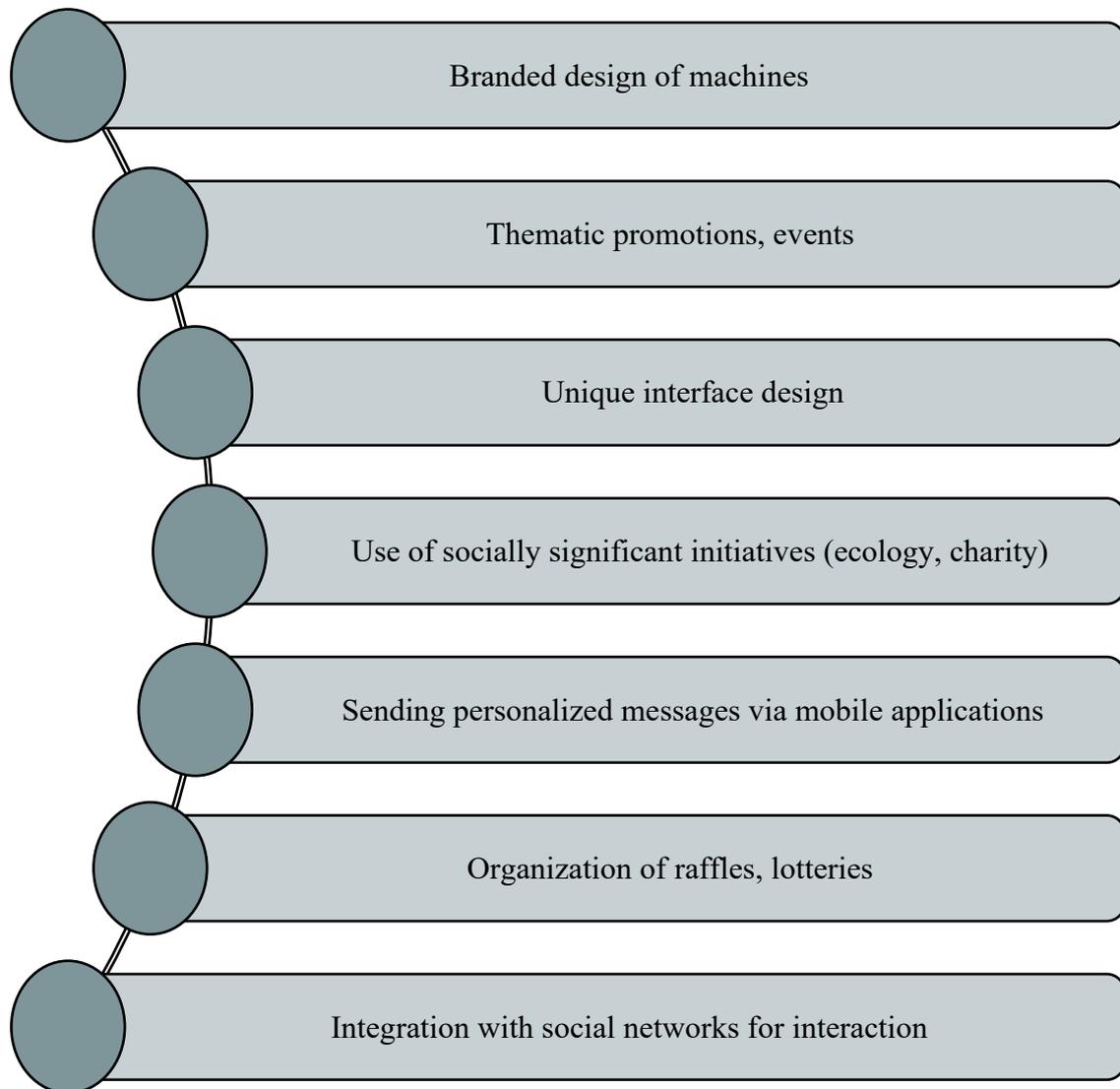
Additionally, the development of loyalty programs featuring cumulative bonuses, discounts, or



rewards for a specific number of purchases reinforces the habit of using vending machines from a particular brand. These solutions, integrated with mobile applications, allow customers to monitor their bonuses and receive notifications about new offers, thereby enhancing their engagement.

The rapid digitalization of vending creates numerous additional opportunities for consumer interaction. For example, installing screens with interactive interfaces that assist in product selection, provide information about product features, or enable participation in surveys contributes to the creation of a unique user experience.

Maintaining an emotional connection with customers is achieved through the application of marketing tools (Fig. 3). For instance, vending machines supporting environmental initiatives evoke a sense of involvement in significant social issues, thereby strengthening customers' attachment to the brand.



**Fig. 3.** Marketing arsenal of tools for maintaining emotional connection with a client in the vending industry (compiled by the author based on [4, 6, 10])

The availability of feedback channels, such as mobile applications, hotlines, or QR codes on vending machines, enables consumers to promptly report issues or provide suggestions. A swift response to user requests fosters trust and significantly enhances satisfaction levels.

The use of the tools described above offers extensive variability in innovative approaches to strengthening loyalty. Among these, three approaches stand out most prominently:

- Gamification;
- Environmental responsibility;
- Integration with social networks [1, 4–6].

The introduction of gamified elements, such as lotteries, games, or tasks that reward customers with bonuses, makes interactions with vending machines more engaging. Gamification tools not only increase engagement but also significantly reinforce emotional connections with the brand.

Modern consumers are increasingly attentive to the environmental aspects of business operations. The use of vending machines powered by energy-efficient technologies or the implementation of packaging recycling programs provides a strong competitive advantage, boosting loyalty.

The ability to share purchases, participate in branded campaigns, or receive personalized recommendations via social networks enhances consumer interaction with vending brands.

It is worth noting that the comprehensive application of the above-described tools and approaches helps retain existing customers while also attracting new ones through positive interaction experiences. Personalization, loyalty programs, consistent and well-thought-out integration of digital technologies, combined with a focus on sustainability, create significant advantages in terms of competitiveness, ensuring the company's market resilience.

However, it is important to consider that the success of implementing the described tools largely depends on their integration into the organization's overall strategy. Supporting approaches must be interconnected and aligned with a unified brand positioning, with their effectiveness regularly assessed based on feedback and analytical data.

Effective management of customer loyalty in the vending industry requires a systematic approach comprising several key stages. Below is an authorial vision of an algorithm (Table 1) that incorporates current trends in digitalization, personalization, and consumer interaction.

**Table 1** – Recommended algorithm for ensuring long-term customer loyalty in the vending industry (compiled by the author)

Stage	Actions	Result
<b>1. Audience Analysis</b>	Study preferences, behavior, and expectations using analytical tools.	Formation of customer segments for personalized interactions.
<b>2.</b>	Develop unique offers, promotions, and	Increased engagement and

<b>Personalization of Offers</b>	discounts for different audience segments.	frequency of consumer interaction with vending machines.
<b>3. Development of Loyalty Programs</b>	Create cumulative bonuses, reward systems for purchases and feedback.	Strengthening customer attachment to the brand.
<b>4. Integration of Digital Technologies</b>	Implement mobile applications, payment systems, interactive screens, and voice control options.	Simplification of interaction processes with vending machines and improved service levels.
<b>5. Maintaining Emotional Connection</b>	Organize thematic promotions, support environmental initiatives, and involve customers in charitable activities.	Establishment of brand association with positive emotions.
<b>6. Feedback</b>	Introduce systems for collecting and analyzing reviews, conducting surveys, and monitoring social media.	Accelerated response to customer inquiries and improved service quality.
<b>7. Results Assessment</b>	Regular analysis of loyalty tool effectiveness using analytics.	Strategy optimization and adaptation to evolving audience needs.

The proposed algorithm emphasizes a comprehensive approach that combines traditional marketing tools with innovative digital solutions. A notable feature is the integration of emotional and technological aspects, focusing not only on rational benefits for consumers but also on fostering emotional attachment through a positive user experience.

The novelty of the recommended steps lies in their flexibility and orientation toward continuous development. Each action is accompanied by feedback and analytics, enabling timely strategy adjustments, resolution of weaknesses, and responses to market transformations. This approach also integrates areas such as environmental initiatives and the use of voice control, reflecting current consumer behavior trends.

## CONCLUSIONS

Ensuring long-term customer loyalty in the vending industry requires a systematic approach that includes the implementation of personalized solutions, the use of digital technologies, the reinforcement of emotional connections with customers, and the support of environmental initiatives.

The tools characterized in this study contribute to strengthening customer attachment and enable businesses to thrive amidst increasing competition.

The proposed algorithm for fostering loyalty, as described in the article, outlines a sequence of actions aimed at retaining customers and increasing their engagement. It provides a clear roadmap for enhancing competitiveness and consumer satisfaction. Its implementation will improve service quality and lay a foundation for sustainable growth within the analyzed sector.

Future research should focus on studying the long-term impact of innovative technologies on loyalty and developing new approaches to adapting services to rapidly changing audience needs.

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