

OPTIMIZING DIGITAL PRODUCT QUALITY: USER LIFECYCLE MANAGEMENT AND ARTIFICIAL INTELLIGENCE INTEGRATION

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In the context of the rapid growth of the number of digital products and the increasing competition for consumer attention, the mere fact of creating an information service is not enough to ensure its commercial success and sustainable operation. The formation of sustainable interactions with users, which involves their regular and productive integration into the digital ecosystem of the product, becomes critically important. This integration is the most important indicator of the quality of a digital product.

Engagement is defined as the intensity and depth of a user's interaction with a digital product, measured by the frequency and duration of sessions, depth of navigation, and the number of targeted actions (e.g., reading content, making transactions, generating their own content). A high level of engagement indicates a significant value of the product for the user and its effective integration into everyday activities [1]. Retention, in turn, reflects the ability of an information service to retain its users over a specified period of time.

Engagement and retention are influenced by a multitude of factors that can be divided into a few key groups: product value proposition, user experience, communication strategies, and personalization. A business and user behavior monitoring framework is a simple structure that covers every step of your growth funnel. These metrics can help you improve user engagement and optimize the customer lifecycle.

Digital product quality metrics function as a single interconnected system, where behavioral indicators are directly transformed into economic results. Analysis of these markers allows you to reasonably form a quality strategy and determine the limits of return on investment in further optimization of the digital product. Among them, we highlight: Return on Investment; the number of active users (MAU, DAU – Monthly Active Users, Daily Active Users); Market Share; Cancellation Rate.

Product Metrics:

- Retention – the percentage of users who remain active after a certain period (e.g., 1st, 7th, 30th day);
- Churn Rate – the percentage of users who stop using the product;
- Conversion Rate – the percentage of users who perform a specific target action (e.g., purchase);
- Usage Frequency – how often users return to the product.

User Lifecycle is a comprehensive model that describes all stages of a person's interaction with a product – from the moment of first acquaintance (awareness of the need) to the moment of complete cessation of use or loyal return.

The importance of user retention:

- reduction in acquisition costs;
- increase in customer lifetime value;
- word-of-mouth effect. Loyal and satisfied users act as brand ambassadors, contributing to organic audience growth;
- stability of the business model.

Even the most functional product will not retain a user if its use is inconvenient or difficult. It is the user experience (UX) that is one of the most important components of the overall quality of a digital product. The user experience includes:

- usability – ease and intuitiveness of interaction with the interface;
- interface design (UI) – aesthetics and clarity of visual elements [2];
- onboarding – the adapting a new user to the product.

Communication strategies and personalization include: personalized messages; content personalization; feedback mechanisms. Personalization of the user experience is manifested in the fact that artificial intelligence allows you to create a unique, adapted experience for each individual user and affects the feeling of quality and value of a digital product [3]. Personalization includes:

- recommendation systems – offering content, goods or services that best match the user's individual preferences, significantly increasing engagement;
- adaptive interfaces that dynamically change interface elements or interaction logic based on user behavior and help optimize the user experience (UX);
- onboarding optimization. Artificial intelligence can analyze the interaction of new users and automatically adjust the adaptation process, accelerating the moment of product value realization;
- chatbots and virtual assistants provide 24/7, instant support, automate responses to typical requests and routing of complex issues, improving the overall satisfaction level.

Advanced data analysis and predictive modeling includes: automatic user segmentation and predictive churn analysis (Churn Prediction) using artificial intelligence models.

Thus, user engagement and retention are a comprehensive reflection of its quality and ability to effectively integrate into the user's life, providing him with ongoing value and a positive experience.

References

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