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## USING THE AARRR FRAMEWORK IN MARKETING STRATEGIES OF MOBILE APPLICATIONS

In the modern digital economy, mobile applications have become one of the key drivers of business growth. According to research, the number of mobile app downloads worldwide exceeds 200 billion annually, while the total market volume reached more than 400 billion USD in 2023 [1]. This creates an extremely competitive environment where effective marketing plays a decisive role.

One of the most widespread and practically oriented tools in the field of digital marketing is the AARRR framework, also known as “pirate metrics.” Its application in mobile marketing allows structuring the user life cycle from the first contact with the product to the stage of generating sustainable revenues. The framework consists of five consecutive stages: Acquisition, Activation, Retention, Referral, and Revenue. They are presented in Figure 1.

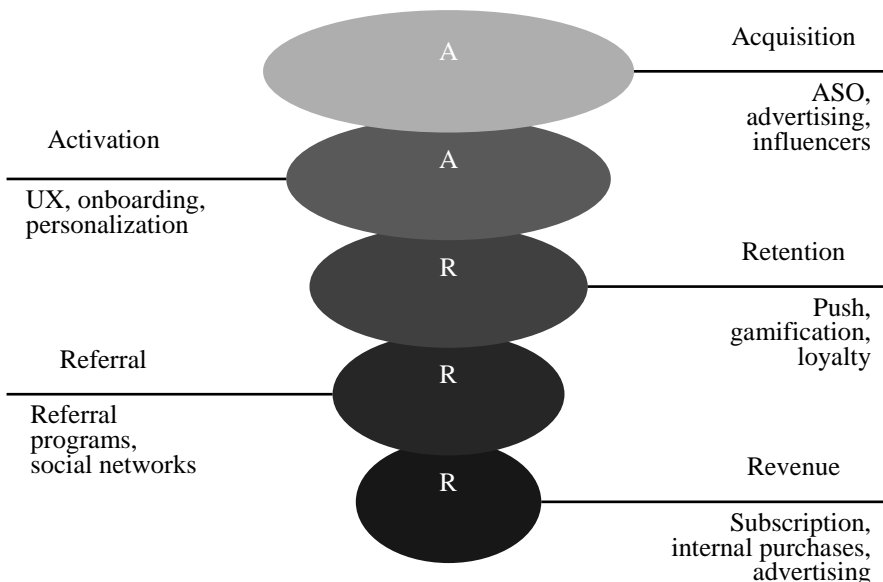


Fig. 1. AARRR Framework Approaches

The Acquisition stage covers the processes of attracting new users. Modern companies employ various channels, including App Store Optimization, targeted advertising on social networks, collaborations with influencers, and content marketing. Tian et al. (2020) demonstrated that the quality of the first contact with a brand directly affects the subsequent user life cycle, increasing the probability of moving to the next stages by 22% [2]. Metrics for Acquisition and other stages are presented in Table 1.

Table 1 – Metrics for AARRR-stages

Stage	KPI
Acquisition	Number of visitors per period Traffic sources (organic search, social media, advertising) Customer acquisition cost (CAC) Conversion rate (visitor → registration) Number of installs
Activation	Time to First Key Action Activation rate Number of completed onboarding steps Number of sessions / page views in the first 24 hours
Retention	Churn rate Cohort analysis Daily/Monthly Active Users (DAU/MAU) Sticky Factor Frequency of product use
Revenue	Average revenue per user (ARPU) Lifetime customer value (LTV) Conversion rate to a paid user Average Order Value (AOV) Return on Investment (ROI)
Referral	Net Promoter Score (NPS) Virality Factor Number of invitations/recommendations from one user Share of referral traffic in total engagement

Activation defines the first experience of interaction with the product, which is critical for building loyalty. At this stage, an intuitive UX, effective onboarding, and personalized tips play a particularly important role. Bothma (2022) proved that successful activation within the first 24 hours after app installation increases the probability of long-term use by 35% [3].

The Retention stage ensures user engagement and creates the foundation for future revenues. Key tools include push notifications, gamification, and personalization algorithms. The use of machine learning methods makes it possible to provide a unique user experience.

Referral is aimed at attracting new users through the existing audience. This is most often achieved through social integrations, bonus programs, and reward systems. Bothma (2022) showed that well-organized referral campaigns increase the level of organic growth of mobile applications by an average of 18% [3].

The final stage, Revenue, involves the formation of a business monetization model. The most common strategies include the freemium model, in-app purchases, and advertising integrations. The success of a monetization strategy directly depends on how well it corresponds to user motivational models. For example, excessive advertising can decrease retention and negatively affect long-term loyalty.

Thus, the integration of the AARRR framework into mobile application marketing strategies ensures systematic management of the user life cycle, starting from the first contact and ending with the monetization stage. This makes it possible not only to optimize promotional expenses but also to create conditions for sustainable business development in an environment of high competition and rapid digital evolution.

## REFERENCES

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