

JUSTIFICATION FOR BUILDING A RECOMMENDATION SYSTEM FOR THE FORMATION OF IT PRODUCT STRATEGIES

V. Moskalenko, M. Grinchenko

National Technical University «Kharkiv Polytechnic Institute», Kharkiv

The IT market is changing rapidly in today's environment. A strong product strategy allows the company to quickly respond to changes and increase its competitiveness without deviating from its strategic development trajectory. An IT product strategy covers a system of processes that evolve and change along with the external and internal environment of the company. An IT product strategy is a well-defined action plan aimed at creating and developing a software solution that meets market requirements and business needs. Wrong planning, uncoordinated priorities, inability to adapt to the changing needs of customers (software users) can lead to the exit of the product from the market. An effective product strategy integrates various aspects of software product development, including IT market research (or a specific market segment), design, engineering, marketing, and sales. Typically, the strategy development process includes defining key goals, developing a roadmap, prioritizing, and assessing risks [1]. Many tasks are solved, which requires a lot of different information and processing of a large amount of data, at each stage of this process. Let's consider these problems.

Step 1. Definition of goals. The vision and mission of the product, its business goal, and the client's business values that will be implemented in the product are clearly defined. It is necessary to align the product goals with the business goals of the IT company, to understand the product goals not only by the product manager, but also by the entire development team.

Step 2. Development of a roadmap. The path to achieving the defined IT product goals is determined when developing a roadmap. It should include the main development aspects, deadlines, and the expected results. It is necessary to take into account the possibility of flexible adjustment of this map depending on changing circumstances (response to market changes, changes in the competitive environment, changes in customer needs and values, etc.).

Step 3. Priorities and evaluation of resources. Priority tasks are identified, and the necessary resources are assessed at this stage. An IT product development budget is formed, and budgets for marketing support of the product over time are developed. It is necessary to identify and review the competencies of all specialists involved in the process of product development and support, as well as other resources that are necessary to perform priority tasks.

Step 4. Risk assessment. Analysis and assessment of potential risks associated with the development, implementation, use and support of an IT product are carried out. Different types of risks, including market risks, are considered.

Step 5. Monitoring and optimization. Developing, implementing, and maintaining an IT product are a continuous process that requires constant monitoring and optimization. It is necessary to determine the success indicators of the IT product, i.e. key performance indicators (KPIs) that meet the defined goals. You need to constantly monitor their dynamics for effective product support. For example, you

need to constantly analyze user reviews and follow new trends in the industry. This will allow you to quickly adapt the product to changing conditions and identify opportunities for product improvement.

Step 6. Feedback and communication. It is important to maintain constant communication between all members of the development team, as well as with customers and end users throughout the process of developing, implementing, and maintaining an IT product. This will help balance the stakeholders' expectations with real results, identify problems in a timely manner, and find effective solutions to support and improve the product throughout product life cycle.

Therefore, flexibility and adaptability are key components of a successful IT product strategy. This will allow maintaining product competitiveness and meeting user needs. The main role in defining the product strategy is played by the product manager of the IT company. Important tasks of the product manager are to ensure that the development team provides not only a minimum viable product at the first stages of product life cycle, but also further tries to create the most viable product that meets the changing customers' needs and the business goals of the IT company.

It is proposed to develop the recommendation system to support the product manager's work. The main purpose of the recommendation system is to analyze various information about the customer's needs (existing and potential IT product users), identify certain patterns of their preferences, form recommendations for improving the values of the product's KPI, which is the basis for the formation of effective product strategies in the long term. Existing recommendation systems solve the information overflow problem by separating useful pieces of data from a huge amount of data provided by the user, for example, data on customer preferences, etc. A recommendation system can provide predictions about future changes based on the identification of certain patterns. Studies prove that the use of a recommendation system improves the quality and speed of managerial decision-making [2].

Modern recommendation systems use machine learning algorithms to provide suggestions based on the processing of large amounts of data [2]. They reduce the time to find important data and patterns that are necessary to form product strategies. It is proposed to use hybrid approaches using machine learning methods to develop a recommendation system for strategic management of IT products [2]. This will allow the IT company to personalize the customer experience with its products, identify and balance the business needs of users by implementing the appropriate functionality of the IT product.

The implementation and use of the proposed recommendation system will enable the product manager to form effective product strategies, the implementation of which will increase the company's sales in the highly competitive IT market.

References: 1. Bel, M. (2023) Developing an IT Product Strategy: 7 Key Steps. <https://www.linkedin.com/pulse/developing-product-strategy-7-key-steps-max-bel/>. 2. Panarin, R. Recommender System Using Machine Learning. <https://maddevs.io/blog/recommender-system-using-machine-learning/>