



REVIEW

Research on Innovative Model Based on Solving Demand Pain Points in Software Development

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ABSTRACT

Software development is an important part of computer technology. Only by ensuring the applicability and efficiency of the software can it really improve the efficiency of production and life, and truly inject new power into the economic benefits of the industry. As the theoretical basis of software development, the software development model directly determines the quality of software development.

In this paper, starting with information technology as an important tool to improve modern management, it brings out the difficulties and pain points in the analysis of software development needs, and first puts forward the software development innovation model for building a composite core users. It takes core users with compound qualities and capabilities as the main line and guides the entire development process to enable both parties to communicate accurately and solve the pain points of demand communication, function optimization and project control to the greatest extent. Exploring application innovation in the software development model can promote innovation in the software industry.

1. Information Technology is as an Important Tool for Improving Modern Management

With the rapid development of information technology, people's work and life have undergone tremendous changes. Influenced by the knowledge economy wave, significant changes have taken place in the way of social production management^[1]. The demand for information resources is constantly increasing, and the trend of enterprise management informatization is unstoppable.

1.1 The Goals of Informationization

Through information construction, enterprises can apply advanced management ideas to specific production and operation management processes, which can enable the

enterprises to carry out organizational innovation, process optimization and management reform, and to realize the process standardization, information symmetry and simplified management. The essence of informatization is to improve the efficiency of work collaboration, improve the efficiency of data flow, make data visible and transparent, and make full use of existing resources to effectively enhance the intangible assets of the enterprise, thereby to drive the rapid development of the entire enterprise^[2].

1.2 The Development of Information Technology can Promote the Reform of Enterprise Management

The Management Concept Reform: With the rapid spread of network informatization, the market environ-

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ment has changed dramatically. Transforming management thoughts in a timely manner to actively adapt to the informatization wave has become the focus of many enterprise managers.

The Management Model Reform: The core of reform is the improvement of management mode, the modern enterprises are pursuing the goal of “simple, fast, good and economical” through the adjustment of organizational structure and the cultivation of innovative talents.

The Management Behavior Reform: With the support of a complete information system, people’s ability to use information resources has been improved. They pay attention to the effective combination of data analysis and management, and use data to assist in decision-making.

3.3 Application Software is as a Carrier of Information Practice

The development of information technology provides sufficient conditions for the reform of enterprise management, but enterprise informatization is not just a one-click done. It requires working from multiple dimensions such as management philosophy, management model and management behavior, objectively rectifying the problems of the enterprise from the perspective of a third party, and guiding, refining and deepening the problems through its own years of management experience and different industry experiences to eventually figure out the nature of the problem in each part and then string all the key problems together for forming a set of solutions. And finally, the strategic plan is implemented through the application software as the carrier form.

2. Requirements Analysis Plays a Key Role in the Software Development Process

2.1 Software Requirements Analysis is an Important Part of Software Development

Software requirements analysis mainly refers to the analysis of user needs, and software developers develop software products according to user needs. At the most basic level, it means that the software developers must embody the program that need to be informationized in the form of a software product from the perspective of users to make the developed software products meet the needs of users and to make it acceptable for users^[3].

Because various industries are increasingly penetrated by information technology, software requirements are often in a dynamic process of rapid iteration and change, which makes it difficult to be accurately judged and defined. In software requirements analysis and management,

how to ensure complete and accurate understanding of user needs, how to track, monitor and verify the realization process of requirements, as well as how to control, adjust, and deal with the dynamic changes of requirements have always been the biggest challenge in software requirements engineering and the core problem area that the industry has continued to pay attention to and explore too.

2.2 Successful Software Products need to be Based on Good Requirements Analysis

In the requirements analysis process of software projects, the developers need to understand and master certain user business domain knowledge starting with project needs research. They must pay attention to grasp the level of requirements in communication, so as to ensure the integrity of user needs from the overall goals of the project, business processes and implementation of specific functions. And the developers should actively and proactively guide users to propose their own needs, and ensure that the proposed user needs meet the requirements of practicability and efficiency of product design to the greatest extent.

3. The Demand Pain Points of Software Development in the Existing Model

Software engineering is a technical field that integrates computer technology, analytical design, interpersonal communication, and psychology. Its complexity and importance far exceed that of software development. In the actual implementation of software engineering projects, the past cases have confirmed that capturing the real software requirements is the core key to the smooth development of software engineering^[4].

Continuous development and innovation are required during the software development process, which is inseparable from the integration of various professional applications and the use of compound thinking for software development to form a seamless connection. But in China, the compound thinking mode is not reflected in many software development processes. The traditional software development model(see figure 1 for details) is mainly reflected in the project implementation process that the business staff puts forward the demand^[5], and the software developer accepts and understands the software development design. However, due to the difference in the professional background and understanding dimensions of the business personnel who proposes the requirements and the software developers, the requirements cannot be truly understood, which reduces the quality, efficiency and practicality of the software development, and causes the project to fail to achieve its expected goals. The main reasons are as follows:

(1) There is a gap in understanding between business personnel and developers. There is generally a difference in professional background between business staffs and software developers. Developers often have a hard time in truly understanding the needs of customers, which results in a large gap between the products developed and the expectations of customers. In addition, because software developers sometimes only care about the code, they tend to ignore the user experience, which easily leads to problems such as unsatisfactory system experience.

(2) The software quality lacks control. In the traditional mode, there are only two ways that developers run through user needs or users directly put forward needs, which results in that the software development and design is completely dominated by software personnel and the software quality lacks control from users badly^[6].

(3) The core demands of users' customers are ignored. During the implementation of the project, most of the demand proposers (usually business staff) stand in their own business perspective and consider their business needs. But for the system users, there are other users besides business personnel generally. In fact, the role of these users in development projects is more important than that of business personnel. However, it is difficult for the demand personnel to put forward functional demands from the position of other users than themselves. The actual needs in this regard cannot be met or even be ignored, which results in the failure of the project.

4. The Innovative Model of Software Development for Composite Core Users Creating

The software development model is the foundation and key of software development, and it plays a decisive role in the purpose, operation process, efficiency and practicality of software development. Owning a scientific and efficient software development model can effectively provide effective guidance for the software development process, reduce the difficulty in the software development process, effectively improve work efficiency, and create more practical information products and promote the development of China's information software industry.

Through the positioning, R&D (research and development) and practical experience of multiple projects, The author proposes the innovative software development model for composite core users (referred to as "core users") for the first time, it is referred to as "CUM", as shown in the figure 2. This model uses an integrated and innovative thinking model. The product design and R&D(research and development) are conducted from the user's perspective by creating a composite core user who

is familiar with business processes and understands basic software development ideas. It breakthroughly solves the pain point that the function setting is disconnected from the target customer's needs in the software design process, and makes information software practical tools.

So how to solve the pain point of demand disconnection problem, let the demand be reflected in the program as much as possible, and develop practical and efficient practical tools, The elements of the complex core user in the "innovation model" of software development are highlighted below:

(1) The first element is to have a integral thinking. The core users should have a global perspective in the project to sort out the multiple dimensions involved in the project and then to carry on to its importance division. They should use modular thinking to split the system functions through the overall design of the project. By refining the underlying basic application modules, they should also perform cross-industry function benchmarking, and split and integrate to achieve functional integration innovation^[7].

(2) The second element is to fully understand the demands. It is necessary to dig deep into the pain points of the traditional development model, fully understand the software requirements of all users, grasp the basic software development ideas, uses the language that is understandable for developers can to communicate the project function modules, and communicate effectively with the software personnel.

(3) The third element is to design and develop the framework on your own. Because core users have business needs analysis capabilities and software development capabilities, they can design their own development frameworks and processes to guide software developers to understand and execute^[8]. In this way, the project can be changed from passive to active, and the quality and progress of the project can be controlled throughout the process.

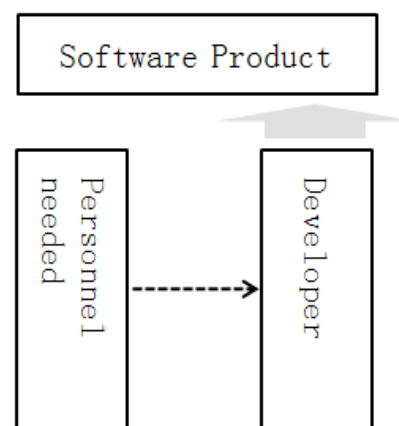


Figure 1. The Traditional Software Development Model

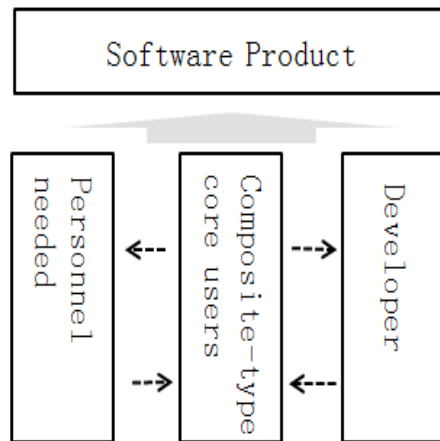


Figure 2.The Innovative Software Development Mode For Core Users(CUM)

5. Conclusion

As an important tool for modern enterprise management, information management carries the business philosophy and management method of the enterprise. It is also undergoing a new round of changes under the current trend of informatization. The proposal of a correct and efficient software development model provides conditions for the innovative development of the industry

The innovative software development model for composite core users (CUM) proposed in this paper can not only quickly meet the growing needs of the company's business and information integration, train a group of complex and innovative talents who understand technology and business, improve user experience and satisfaction, and make information-based software a practical and effective tool. At the same time, it can also enable employ-

ees to grow rapidly, improve management capabilities, and give full play to their core competitiveness and enhance the company's ability to adapt to the environment, which makes it adapt to the current development trend of informatization.

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