

# Designing a Smart Integrated Product Based on Customer Information to Enhance the Efficacy of Financial Engineering

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<sup>1</sup>*Date of Receiving: 03 November 2022; Date of Acceptance: 02 January 2023; Date of Publication: 06 January 2023*

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## ABSTRACT

The puzzle of disjoint between product design and market lies in financial enterprises. Innovative processes for financial engineering products still need to be improved in style due to the lack of internal experts in financial businesses guiding product design in the new financial market environment and the growing demand for individualization and customer value. As a result, only some financial products would be accepted by customers. Based on the analysis of the design characteristics of the financial engineering product, the interactive design information platform for the financial engineering product was primarily conceived and constructed in computer, network engineering, and system engineering, among other fields. Financial enterprises can try their best to meet the client's requirements when designing financial products on the platform.

## INTRODUCTION

Financial engineering is devising, creating, and implementing novel financial instruments and finding solutions to financial issues[1]. A financial product innovation is a value chain that includes a value plan, value creativity, value transfer, value communication, customer value attention, and so on. Therefore, whether the value of the designed and developed financial product would be close to the needs of customers and whether the segments of value realization would be complete directly affects the realization of value by customers and financial corporations [2]. Because financial institutions' profit is becoming increasingly dependent on the customization of the product mix, innovative processes for the financial engineering product were still limited to product design guidance and ignored market research analysis before the innovation of numerous financial products. These will result in the marketplace rejecting numerous financial products, making it difficult to anticipate operating effects. As a result, financial product innovation has emerged as the primary driver of competition in the financial market.

In keeping with the general trend toward innovation in financial products, it has been a major challenge for financial corporations to use scientific methods to match product orientation with objective customer value to improve the quality of financial product innovation.

The individual demand-based interactive design plan was proposed by Han Weili et al. (2001) and Guo Yunhua et al. (2005)[3, 4]. The interactive design information platform for the financial engineering product was primarily conceived and constructed in computer, network, and system engineering, among other disciplines, by their line of thought, based on the analysis of the design characteristic of the product. Customers could express their value requirements through multiple channels on the platform, and product design could be interactive between businesses and customers. On the platform, Financial could adapt to the diversity of value needs in the financial market.

## GENERALLY DEVELOP A FINANCIAL PRODUCT'S PROCESS

The instruments for financial innovation are provided by financial engineering. Financial institutions use this method of systematic analysis to solve specific customer issues.

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<sup>1</sup> *How to cite the article:*

Malik S., (2023) Designing a Smart Integrated Product Based on Customer Information to Enhance the Efficacy of Financial Engineering; *International Journal of Inventions in Engineering and Science Technology*, Vol 9, Issue 1, 1-8

There are five stages to its operation [5]:

- 1) diagnoses Identifying the issues that customers face is essential and fundamental.
- 2) research. Based on existing technology, financial theory, and financial monitoring, its goal is to find the best solution. Additionally, the most effective strategy typically entails developing a novel financial institution or series of financial instruments.
- 3) advancement. The previously examined plan will be used to develop a new financial product at this stage. There are two measures taken: One measure is Underwriting, in which financial institutions, acting as attorneys, guarantee a portion of the bargainer's financial product. The other measure is Synthesizing, in which financial institutions, acting as parties, manage their investment portfolios and create financial products using dynamic deal strategies.
- 4) the cost. The decision regarding the financial product's development cost and marginal profit is the objection to this stage.
- 5) personalization Some financial instruments are further tailored to each customer's requirements.

In the general process of developing a financial product, the primary goal is to gather and evaluate information about customer requirements, which is where traditional financial products fall short. Financial institutions must use computers and networks to collect and analyse customer demand data to keep up with the changing market in the information age.

### FINANCIAL PRODUCTS INFORMATION PLATFORM

Customization via the internet has been implemented in some businesses, such as General Motors, Cisco, Dell, and others [6]. This section will attempt to construct a financial engineering product interactive design platform.

A. The new collect system for customer information was established in response to the shortcomings of ignoring market research analysis of customer demand and a need for more communication between businesses and customers.

Departments communicate bi-directionally within the information collection system. Financial engineers participate in market research to select and plan the settings of related issues. Designers can get information about what customers want from the market department, talk to customers directly, and then do qualitative design analysis. Direct face-to-face and online communication are the two methods by which market researchers can obtain all the information. On the one hand, customers modify their requirements for financial products and services over time. On the other hand, financial engineers are aware of the dynamic information of customer demand in real-time so that the dynamic match will be formed between financial product or service demand and objective customer value demand.

B. The construction of an interactive design platform An interactive financial product information platform was constructed based on the customer information collection system. Customers and financial institutions would collaborate on developing a new product design and process on this platform, as well as the diagnosis, analysis, development, pricing, and customization of the financial product.

Brief explanations were provided for each platform module as follows:

- 1) The financial industry caters to online customers' requirements. By sending out online questionnaires, financial institutions can quickly and cheaply obtain information about the market and monitor the dynamic changes in objective customer demand data. Customers can customize individually, evaluate financial engineers' plans, and provide internet-based feedback on opinions about financial products and services.
- 2) A financial business platform. It is a local area network, or LAN, through which all business sectors collaborate on product design. Through the LAN and the internet, all sectors are connected. When working together on product design, financial sector sectors exchange time-sensitive information via LAN. For instance, other related industries can provide market, management, and strategy information to the design industry; that market segment must promptly communicate with product designers to conduct market research more effectively and obtain useful information. The information platform has the potential to make long-range parallel and cooperating design a reality, which can significantly boost design efficiency[7, 8].

3) Face-to-face interaction Financial engineers can get a detailed and in-depth understanding of each customer's demand through face-to-face communication, which is one way to implement parallel and cooperative design within an organization.

### BRIEF OVERVIEWS

In response to the new environment of the financial market and the growing demand for individualization and customer value, an interactive information platform for financial engineering products centred on customer value was developed primarily in this paper using computer and network technology. Nevertheless, this paper was qualitatively described in terms of ideas and theory. Some practice issues—such as design management, operation technology, and so on—would be enhanced and refined in subsequent research.

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