

## Research on the Construction Path of the Digital Platform for Intermediary Services

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**Keywords:** Digital, Intermediary Service Platform, Agency Bookkeeping, Multi-case Analysis

**Abstract:** Digital path construction is requisite for intermediary service platforms to develop core competencies in the age of big data. Nevertheless, the capabilities of most intermediary service platforms are limited, and these platforms' foundations for digital transformation are weak. Current theoretical bases and case materials available for reference have never been summarized systematically. Therefore, we expect to study the strategic process for building a digital agency bookkeeping service platform to promote development of enterprises. We will focus on four Chinese typical agency bookkeeping service platforms, visit and survey enterprises for exploring mechanisms of digital paths, and summarize how intermediary service platforms create digital paths through multi-case analysis, to provide paths as references for transformation and upgrading of small and medium-sized enterprises, and theoretical bases for these enterprises to identify their industrial positions and make strategic choices.

### 1. Introduction

The theoretical definition of intermediary service platform originated from the divergent research of various scholars on the connotation of platform. The scholars represented by Meyer (1997), a professor of the Northwestern University, defined product and technology platforms successively; they think a platform "is a common structure for developing and producing related products, composed of subsystems and interfaces". According to "platform theories", platform studies contain their extraordinary object properties, core topics and conceptual causation; it is necessary to ponder upon and build a theoretical framework (Wang J & Cai N, 2018). Innovation platform, first proposed by the U.S. Council on Competitiveness (1999), is indispensable for infrastructure innovation and innovation process. Based on the above studies and the innovation platform, this paper defines the intermediary service platform, an intelligent network platform for individual users' trading, consultation, contribution and shared benefits in the market according to a certain group of users' custom, diverse and standardized requirements.

The digital transformation of intermediary service platform is of key significance to the innovative development of intermediary service market. Intermediary services rely on service to link the related subjects with complementary resources (Evans & Schmalensee, 2007). The status quo analysis on Chinese intermediary service market suggests that intermediary services "mainly provided offline by delegated personnel" occupy a relatively big proportion of the market. The market models of conventional intermediary services are rigid, and there is a lack of momentum for driving industrial growth. Digital transformation as transformation "precipitated by a transformational information technology" (Lucas et al., 2013), emphasizes more the technological root of IT (Lucas et al., 2013) and the alignment between IT and businesses (Venkatraman, 1994). Therefore, for normal problems caused by inefficient configuration of intermediary service platforms, digital service platforms are built to design paths for transforming intermediary service markets to integrate "functions, services and information", thus making services available from the value chain. For platform digitalization, it is necessary to link all services through the Internet and Internet of Things rather than simply apply intelligent technologies in the intermediary service provisioning process. For instance, bookkeeping intermediaries have "financial affairs, taxes and

bills” integrated online to improve efficiency of agency bookkeeping/tax declaration and user experiences.

Based on background research of intermediary service platforms and their digitalization, digital transformation is performed as per market pain points. However, present digital transformation is neither thorough nor widespread. Commercial and social innovations driven by digitalization empower manufacturing and internet enterprises, but don’t involve development models or paths of intermediary service platforms. These one-stop middle platforms provide “information plus services”. The technologies for digital transformation of these platforms enable platform providers and demanders to exchange information, matching supply and demand online to produce network effects. Furthermore, digitalization drives platform building for sharing intermediary services, integrates and shares existing services, facilitates exploration of frontend personalized requirements and satisfies backend requirements. Therefore, this paper intends to study how to successfully digitalize intermediary service platforms thoroughly. On one hand, it further clarifies related concepts and processes of platform digitalization, and builds creative platforms based on digital transformation; on the other hand, it designs paths for digital transformation of intermediary service platforms, and drives enterprises to improve their service efficiency, to make effective responses to development trends of the present digital age.

## 2. Research Design

With the case of four Chinese typical agency bookkeeping platforms, including YunZhangFang, Zhong Lu Financial, Yundaizhang and Kidney Bean Accounting, (the names of the enterprises in this paper are denoted by their formal English abbreviations), this paper examines how to create digital paths for intermediary service markets and obtain enlightenments from the perspective of enterprises, platforms and collaboration. Afterwards, it comments on how to make intermediary service platforms online, Internet-based and intelligent, to facilitate digitalization of intermediary service platforms and give corresponding theoretical suggestions. It mainly covers the following two aspects:

### 2.1 A Shallow Interview of Digital Intermediary Service Platforms

A shallow interview of digital intermediary service platforms is conducted from the perspective of digital path creation to understand present digital platform transformation. The background and theoretical situation are analyzed. Regarding the realistic background, digital development strategies of the platforms are summarized after fully understanding scope, process and development status of agency bookkeeping services. Solutions -- digital path construction based on economies of scale and focused differentiation, are sought according to the digital methods for building intermediary service platforms. Theoretically, it is necessary to analyze current theoretical research progress in digital transformation of related enterprises, summarize the difficulties in digital transformation of agency bookkeeping service providers and identify how to digitalize intermediary service platforms. For the difficulties in digital enterprise transformation, the digital transformation procedures of platforms are optimized by creating digital paths. Concerning path creation, digital transformation paths of intermediary service platforms are examined. Subsequently, suggestions on path optimization are offered for better digitalization of enterprises.

Table 1 Platforms and Business Survey Presentation Forms

Bookkeeping Platform Enterprise	Founded	Product Service	Interview Content
YunZhangFang	2015	Financial and tax integration plus automation	Investigate how bookkeeping enterprises optimize their products and services through the
Zhong Lu Financial	2013	“SaaS plus services” delivery model	

Kidney Bean Accounting	2013	“OCR” identification system	application of theoretical technology and the process optimization of digitization in the field of bookkeeping services.
Yundaizhang	2015	“CRM” & “CRS” intelligent bookkeeping integration	

## 2.2 Research on Connotations and Features of Digital Platforms of Intermediary Services

A platform is a building block which functions as a cornerstone in a trading system for technical products. Inside this block, enterprises in different markets and fields are procured through interfaces to conduct transactions and innovations (Wang J & Tian F & Sheng Y, 2017). Inside this platform architecture, there are demanders, user providers, users and platform providers. Besides, same-side and cross-side network effects exist among users, as shown in the figure. The Internet intermediary service platforms studied in this paper refer to multi-sided platforms for supporting transactions and services between platform providers and their clients, or improving efficiency of transactions and services with “Internet”, “big data” and other technologies as infrastructure.

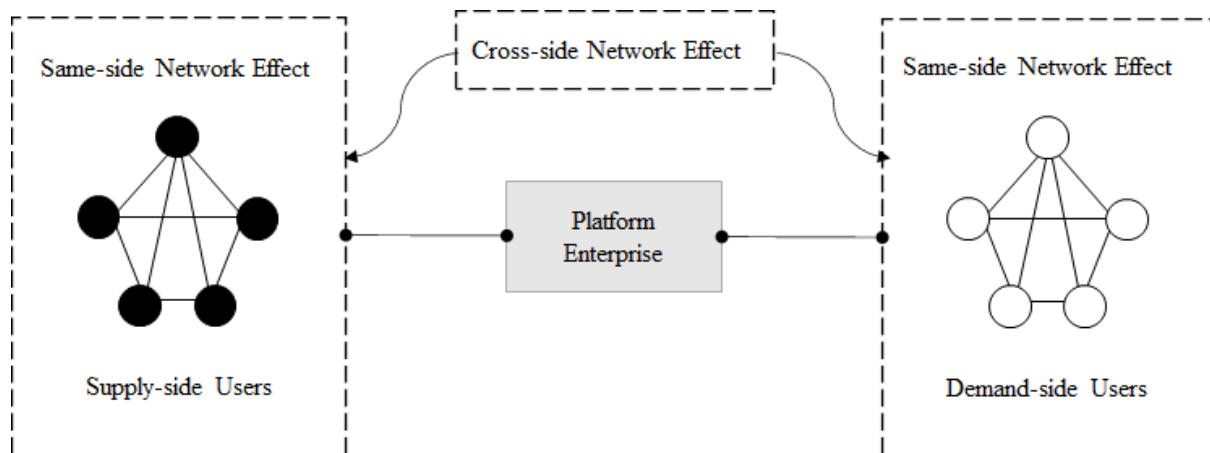


Figure 1 Platform Enterprise Framework Diagram

Platform connotations and architectures are summarized. From the perspective of suppliers and demanders of platform architectures, agency bookkeeping service platforms are taken for example to explore various paths for constructing architectures of digital intermediary service platforms based on clients’ needs for agency bookkeeping and scope of agency bookkeeping businesses at the supply-side of platforms. In combination with the cases, this paper analyzes the main approaches for building digital intermediary service platforms, judges the feasibility for making intermediary service markets digital and Internet-based, and studies how to build these platforms as follows.

### 2.2.1 Strategic Thinking for Digital Intermediary Service Platform Building

Facing new development trends of digital economy, enterprises focus on making innovations of their strategic thinking and ideas from the perspective of digital transformation. Intermediary service platforms are integral parts of market economy. Their digital transformation is of profound significance. This paper analyzes the strategic thinking and paths for the digital platform building. By fostering ideas for platform digitalization, it is favorable for outlining strategic policies, basic paths and methods for enterprises’ digital collaborative innovations.

### 2.2.2 Basic Architecture Construction for Digital Intermediary Service Platforms

This paper figures out how to digitalize the platforms and its connotations from the perspective of digital transformation. It analyzes the path design for enterprise digitalization in multiple dimensions. The enterprises studied empower platform digitalization using OCR, SaaS, CRS and other big data processing software. Digital platforms are built through data analysis on “big data”, “cloud computing”, “artificial intelligence” and other related information platforms, to make the platforms online, Internet-based and intelligent.

### 2.2.3 Case Analysis on How to Build Digital Intermediary Service Platforms

In light of various upstream/downstream relationships, forward and backward linkages among industries and enterprises in ecological niche and development process, this paper summarizes business scope, product and service features of the cases, comparatively analyzes several representative proxy bookkeeping service providers, and identifies the approaches for platform building -- construction based on economies of scale and identity construction based on focused differentiation.

One side, construction based on economies of scale. It means in an age of digital media, customer needs and channels tend to be diverse and complete. In combination with customer needs, intermediary service platforms aim to expand their businesses, provide diverse services, center around their principal products or services, develop multiple types of related businesses, and become integrated with diversified businesses.

On the flip side, identity construction based on focused differentiation. This means that for promoting development in focused differentiation services and providing extraordinary services, the platforms gain competitive advantages by providing more professional distinctive services.

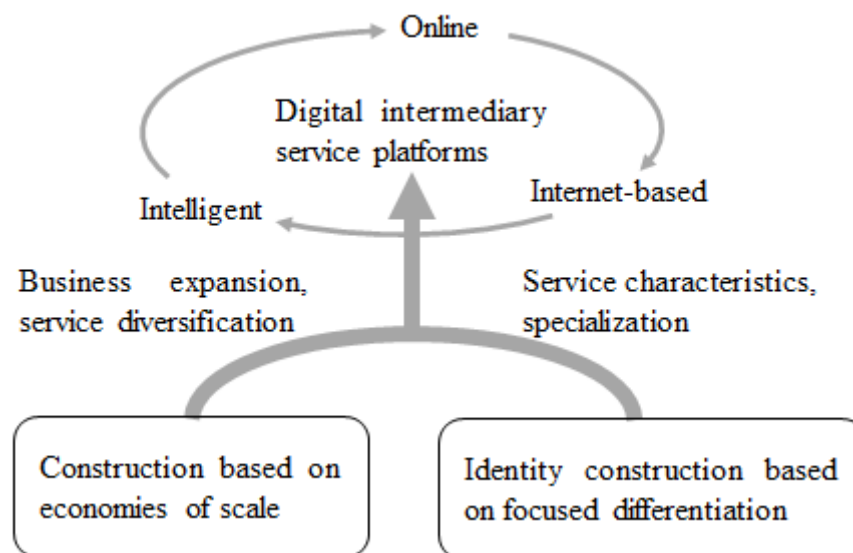


Figure 2 The Mechanism Diagram of the Digital Platform of Mediation Services

For expanding their businesses and providing differentiated services, agency bookkeeping service providers have been digitalized based on economies of scale and focused differentiation to obtain competitive advantages among the platforms and promote establishment of open, collaborative, functionally complete and efficient intermediary service systems intermediary service systems (Ministry of Science and Technology of the People's Republic of China, 2003).

### 3. Turth Analysis

To demonstrate feasibility of the above schemes, four representative digital bookkeeping agencies are compared to summarize the laws on how to build digital intermediary service platforms.

Specifically, this paper focuses on analyzing requirements, procedures and outcomes of the selected cases in depth. Following the requirements analysis, the platform enterprises optimize their procedures according to their respective characteristics, and create corresponding paths of digital transformation in line with the requirements. Therefore, the following proof procedures of comparative multi-case analysis are implemented.

Table 2 Analysis of Similarities and Differences of Cases

<b>Similarities</b>	<p>As a whole, the digital platforms of the four cases are generally online, Internet-based and intelligent. They all have integrated functions for declaring “financial affairs, taxes and bills” as intelligent operations control systems for agency bookkeeping. Therefore, they simplify customers’ applications, reduce service costs and provide references for digitalizing conventional platforms.</p>	
<b>Differences</b>	YunZhangFang	<p>Finance and tax integration.</p> <p>For pain points of the bookkeeping industry, YunZhangFang provides set of "invoice collection, voucher book generation and other aspects of automation, specialization, intelligent fiscal and taxation services, based on the diversified needs of the business. YunZhangFang optimizes its procedures mainly by optimization of service efficiency, automatic one-key tax declaration, abilities to attract customers, service efficiency and “Internet plus”. It offers micro-sized, small and medium-sized enterprises integrated finance and tax solutions through SaaS. Instead of attracting customers by marketing, it improves its efficiency and expands its business growth.</p>
	Kidney Bean Accounting	<p>Bill identification.</p> <p>To improve its business efficiency, Kidney Bean Accounting provides bill scanning services through intelligent bill scanning. After bill scanning, this platform rapidly generates bookkeeping vouchers and verify their authenticity. While saving bookkeeping time, it guarantees high accuracy. As an intelligent financial shared service platform, Kidney Bean Accounting provides intermediary bookkeeping services to digitalize strategic decision-making. It optimizes its procedures for adding functions, lowering costs, improving efficiency, getting more feedback and driving development. Thus, it has built a big stable customer base through its digital operating model and digital services.</p>
	Yundaizhang	<p>Internal management system (CRS).</p> <p>To make its businesses systematic, Yundaizhang uses basic customer information, general corporate business procedures, potential customers and follow-up after contract execution through the CRS system. Providing customers with personalized and customized services, it performs management based on scientific decisions and establishes extraordinary internal agency bookkeeping management system. First proposing CRS management and services in the Chinese agency bookkeeping industry, Yundaizhang has optimized its procedures for promoting intelligent services, employing CRS and expanding its channel systems. Through its frontend customer relationship management system and intelligent bookkeeping, it has attracted 60% customers in Beijing, China.</p>

	Zhong Lu Financial	Comprehensive financial accounting services. Zhong Lu Financial provides small and micro-sized enterprises with one-stop services of the whole value chain. In response to inelastic demands of small and micro-sized enterprises, it optimizes its service procedures for digital transformation by employing “SaaS plus Service” delivery model, controlling risks completely, offering financial and tax guidance, making “Internet plus intellectual property” intelligent, performing precision marketing and mastering big data based risk control technologies. Meanwhile, it is becoming an intelligent risk control enterprise, and comprehensively uses different techniques to understand customers’ risks, to better serve micro-sized, small and medium-sized enterprises.
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Through comparative multi-case analysis, the aforementioned two paths for building digital intermediary service platforms are verified correct.

Firstly, the path construction based on economies of scale aims to provide diverse services. For instance, to become an integrated financial accounting service provider, Zhong Lu Financial provides one-stop services of the whole industry chain, including industrial and commercial services and taxation in addition to agency bookkeeping. However, Yundaizhang uses CRS to increase its businesses through the human resource management system for “corporate internal management plus customer management”.

Secondly, identity construction based on focused differentiation is aimed at focused differentiation services. For example, YunZhangFang offers complete agency bookkeeping solutions and occupies core competitive advantages of this field dependent upon its creative “finance and tax integration plus automation”. Through its extraordinary intelligent bill scanning and recognition, Kidney Bean Accounting provides bill scanning services using OCR technology, and drives its service differentiation via its data processing system.

#### 4. Conclusions

After investigating how to digitalize intermediary service platforms, the following conclusions are reached:

On the one hand, scientific path construction drives successful digital enterprise transformation. Intensive efforts are made to seek breakthroughs in digital transformation of intermediary service platforms, develop creative strategic thinking and master strategic policies for scientific management. Dependent upon theoretical bases of platform digitalization, this paper puts forward feasible suggestions for the transformation.

On the other hand, digital path constructions share common characteristics and exhibit their extraordinary features. Take agency bookkeeping services for example: All enterprise platforms construct digital service systems by making themselves online, Internet-based and intelligent. These platforms show their respective features in exploring paths of digital transformation meanwhile, subject to coordinated impacts of different factors. Finally, this paper summarizes the paths for building digital intermediary service platforms: path construction based on economies of scale and identity construction based on focused differentiation.

By studying how to build digital intermediary service platforms, it is favorable for utilizing various resources, bringing advantages of Internet into play and solving problems with present platforms. It is of realistic significance for having intermediary services intermediated, socialized and enterprise-oriented.

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