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Research on the Path of Dependent Upgrading of Industrial Digital Service Providers



Abstract: - In the era of Industry 4.0, characterized by the rapid evolution of the Internet and modern digital innovation technologies, the digital economy is experiencing steady growth. The acceleration of digital technology innovation and iteration not only enhances social productivity and optimizes resource allocation but also introduces new challenges. This article takes Zhejiang Juyang Technology Co., LTD. as the research object, mainly analyzing the path of Juyang's digital transformation relying on Alibaba platform. The team summarizes the development process and successful digital transformation experience of Juyang through field research, online and offline data collection, questionnaire survey and other methods, based on literature analysis. Based on the three stages of integration, symbiosis and autonomy, the article explores the path of "integration-symbiosis-autonomy" in the process of enterprise transformation and upgrading, and summarizes some valuable experience and enlightenment, hoping to provide reference for the digital transformation of enterprises.

Keywords: Digital Service Provider, Platform Ecosystem, Dependent Upgrading, Development Path.

I. INTRODUCTION

The relentless progression of frontier sciences and technologies, including the Internet of Things, informatization, virtual reality, next-generation artificial intelligence, and blockchain, has propelled the digital revolution into a formidable force. These technologies not only provide an important foundation for achieving digital transformation and upgrading, but also greatly promote social progress.

From the Standpoint of digital industrialization, digital industrialization is the cornerstone of digital economic development. In 2022, the scale of digital industrialization reached 9.2 trillion yuan, a year-on-year increase of 10.3% in nominal terms, accounting for 7.6% of GDP. From the Standpoint of industrial digitalization, the integration of digital technologies, such as the Internet, big data, and artificial intelligence, with the real economy has deepened the integration of digital technologies, such as the Internet, big data, and artificial intelligence, with the real economy has deepened, making the digitalization of industry a more prominent driver of economic growth. In 2022, the scale of industrial digitalization reached 41 trillion yuan, a year-on-year increase of 10.3% in nominal terms, accounting for 81.7% of GDP. Digital transformation is driving changes in production methods, lifestyles, and governance models, ushering in a comprehensive expansion phase for the digital economy [1].

Although digital transformation has been widely recognized by the corporate community, the unique complexities of digital technology, its structural dependencies, and the long-term knowledge accumulation characteristics distinguish it from previous technological revolutions. Different countries, industries, and scholars have different views on the evolution trend of the digital revolution, resulting in differences in cognitions and practices related to digital transformation [2]. In-depth contemplation and meticulous planning in digital transformation by companies will bring about substantial changes in implementation steps and outcomes.

II. OVERVIEW

Established in 2010 as the official service agency for Alibaba in China and internationally, Juyang Holding has evolved into a digital service provider for enterprises.

After decades of deep industry experience serving over 200,000 small and medium-sized enterprises (SMEs), it is committed to enabling them to achieve digital marketing, digital management, and digital production through Internet technology and computing power applications. Ultimately, it aims to help SMEs gain more business opportunities. The company has undergone several significant business and strategic transformations. Combining its business progress and transformation milestones, we can divide Juyang Holding's development process into three stages: the initial stage, the development stage, and the upgrading stage.

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A. *Initial Stage (2010-2012)*

During the initial stage, Juyang Holding, with no direct competitors, concentrated on leveraging its own strengths to secure a position in niche markets [3].

Juyang Holding seized the opportunity to establish Wenzhou Wangsheng Technology Co., Ltd., providing Internet marketing products. At the beginning of its establishment, the company set its sights on the national Internet advertising market and classified customers into three categories: website construction users, website design users, and information users who need website production. By using the company's products, users can meet their website design and operation needs.

However, during this stage, Juyang Holding only provided limited business scope in terms of Internet marketing products and focused its market on local enterprises in Wenzhou. The challenge was to expand the business market beyond the local scope. How to transform from a pure platform service provider to another was a major challenge at that time.

B. *Development Stage (2012-2020)*

Entering the high-speed development period, Juyang Holding demonstrated strategic foresight and achieved rapid and healthy development [4].

During its development, Juyang Holding kept up with the rapid development of the Internet era and made breakthroughs in industry technical bottlenecks while seizing market opportunities and keeping a close eye on regional hotspots. Under the correct strategic guidance, the company presented a good trend of scale expansion, structural improvement, efficiency enhancement, and corporate harmony for sound development. Partnering with Alibaba Group, the company gained access to advanced technologies and platform resources, such as e-commerce, logistics, payment support, enhancing its competitiveness and service capabilities. Through these measures, R&D personnel were optimized, R&D personnel management levels were improved, work efficiency was enhanced, and product research and development and technology development levels were improved.

At this time, Juyang Holding relies on Alibaba Group for comprehensive upgrades around enhancing product development strategies based on technology innovation as the core driving force.

C. *Upgrading Period (From 2020 to Now)*

In 2020, the group officially upgraded to Juyang Holding Group by implementing three major strategies of organizational upgrading, talent upgrading, and scientific research upgrading. This further consolidated the organizational structure and emphasized the introduction of high-quality talents. At the same time, it increased investment in scientific research to enhance innovation ability and technological level. This series of upgrading measures not only improved the group's comprehensive strength but also laid a foundation for future development.

In 2022, the company and Hongyang Group Limited in China formed a strong alliance to build a strategic highland. Both parties will give full play to their respective advantages, share resources, complement each other's advantages, and achieve mutual benefits and win-win results. They will carry out strategic cooperation in promoting the digitalization of industry information.

III. RESEARCH ON ATTACHMENT-TYPE UPGRADING PATH

To enable digital transformation and upgrading, enterprises often leverage established platforms. However, enterprises are facing the problem of "how to transform and upgrade by attaching to the platform ecosystem without losing autonomy". For enterprises that join more mature platforms and become one of its nodes, they can use internal network resources to achieve their own upgrading [4]. In the process of integration, if the dependent enterprise only engages in technical exchanges with the attaching enterprise and blindly absorbs resources from the attaching enterprise, it may develop a psychological dependence on the attaching enterprise, thus completely losing its autonomy. For dependent enterprises to complete digital transformation through attachment-type upgrading, they need to manage structural and process dependencies with the attaching enterprise.

Using the explanation of platform ecology theory, platform ecosystem participants use attachment-type upgrading strategies for transformation and upgrading, including three stages of integration, symbiosis, and autonomy. Participants can gradually achieve efficiency improvement and business growth through digital behaviors that are visible and can be reorganized with platform enterprises, becoming an endogenous driving force for digitalization. It should be noted that these three stages are not linear evolution or separate from each other; each later stage is based on digital elements of the previous stage, with a spiral progression.

A. *Integration: Synergy and Cooperation*

1) *Dependent upgrading objective*

During the integration phase, participants within the platform ecosystem, endeavoring to propel digital transformation, find themselves constrained by limitations in both resources and capabilities. They prefer to accelerate their digital progress by leveraging the platform's power. The key is to digitalize and intellectualize the original human-centered business operations, such as using digital technology to improve business efficiency [5].

In this context, JuYang controls works to achieve the enterprise value of "providing more business opportunities for SMEs" which is similar to the development concept of Alibaba's platform service for SMEs. JuYang achieves the first stage of integration process by exchanging ideas and communicating with leaders and executives, and using unified tools, products, languages, and cultures. Platforms provide digitalized initial stages mainly by building "information exchange" platforms to help traditional enterprises obtain trading orders. These platforms facilitate traditional enterprises in acquiring trade orders, specifically addressing challenges such as difficulties in accessing order information and aligning supply with demand. Platform empowerment is reflected in using the platform's digital expertise to match supply and demand, increasing traditional enterprise order quantity and user experience. JuYang controls leverages the enormous flow and user groups of the eco-platform (Alibaba) to obtain rich sales opportunities and quickly promote its products and brands, enhancing its visibility and influence. Meanwhile, it also enhances JuYang's market acumen and insight to grasp market changes and trends in a timely manner and adjust marketing strategies to adapt to market changes.

2) *Dependent upgrading path*

Through the strategic organization of online activities, business operations, workflow restructuring, and channel source realignment, JuYang endeavors to enhance both work efficiency and customer satisfaction.

Firstly, JuYang integrates personnel identity information and job information in the management process using the Alibaba DingTalk system through tagging and online methods to achieve efficient collaborative management processes.

Secondly, relying on Alibaba's customer relationship management system (CRM system), it builds a standardized service work process that involves active participation from both customers and project managers, achieving a seamless online business operation. Through the CRM system, JuYang gains intuitive insights into the customer's historical consumption records, evaluations, visits, important events, and dates. In sales follow-up, JuYang uses the CRM system to record and track sales activities, customer feedback, and transaction progress, which greatly improves the efficiency and performance of the sales team. This comprehensive online communication strategy ensures real-time interaction between JuYang project managers and customers, enabling the sharing of project progress and solutions to issues. Customers, in turn, can stay informed about project developments, express their needs, and provide feedback, facilitating a two-way instant communication process. This whole-process online service work process not only improves customer satisfaction but also significantly reduces risks caused by misunderstandings and communication errors.

In terms of internal collaborative management, JuYang achieves online collaborative management through using DingTalk's online approvals, logs, group announcements and other functions, solving problems such as cross-team coordination difficulties caused by multiple project teams operating simultaneously and organizational structure redundancy caused by personnel complexity. In terms of external collaborative management, JuYang creates a project space with Alibaba. The service process is divided into three management blocks: customer management, project consultation, and project management. The platform provides online solution tools for this purpose, of which the customer management system is the main force in the software service platform, the project consultation group is the optimization and development of DingTalk's own functions, and project management is based on Alibaba's original business management system upgrade. With the help of the project space, JuYang achieves standardization and online of the entire work process. Through these tools and platforms, enterprises can achieve efficient and accurate project management and collaborative work to provide high-quality services and solutions for customers.

3) *Dependent upgrading results*

At this stage, the integration of JuYang with the Alibaba ecosystem platform has resulted in the design of a digital management workstation for the industry that achieves online and visual behavior in both organizations and businesses. This not only reduces system development costs but also improves work efficiency and customer satisfaction through online work. External collaborative management helps LoKe achieve full-process online from customer acquisition to delivery, ensuring transparency and control in this mode. With these tools and platforms,

enterprises can achieve efficient project management through online collaboration and provide high-quality services and solutions for customers [6].

4) *Spiral development drivers*

Although JuYang provides resources to build an Alibaba industrial digital service platform, overall Alibaba is the main resource provider. During this period, JuYang exhibits a significant reliance on Alibaba, characterized by a high dependence and relatively low complementarity.

JuYang's pronounced dependence on Alibaba is mainly reflected in sales channels, capital flow, data resources, and brand value. After becoming an Alibaba channel partner, JuYang's customer base expanded from Wenzhou to the nationwide scope, and its product range expanded from a single digital advertising website to e-commerce.

B. *Symbiosis: Mutual Benefit and Innovation*

Symbiosis refers to participants and platform companies jointly promoting the visualization of customer and product elements in their respective industries, jointly building a new value proposition and business model to meet the needs of other users within the platform ecosystem, and digitally promoting the joint growth of both parties' businesses [7]. In the process of symbiosis, participants have improved their complementary contributions to the platform, but at the same time, the entire business development and revenue acquisition are embedded in the ecological framework, and the dependence on the platform owner remains high. At the same time, in this stage, participants have begun to seek to create greater value for more members of the ecosystem through cooperation, entering into a "self-reliant" stage of reducing dependence on a particular platform company [8].

1) *Objectives of adhesive upgrade*

In the symbiosis stage, after achieving a state of integration between enterprises and platforms, enterprises can slightly exert subjective initiative, jointly produce new products and services, and form a relationship of mutual dependence and mutual promotion between enterprises and platforms [9]. By collaborating with Alibaba, Juyang can continue to leverage Alibaba's platform and technological advantages to expand its business scale and coverage, enabling faster growth. At the same time, Juyang recognizes the importance of innovation and actively seeks innovation points and differentiations within the Alibaba ecosystem. Juyang not only closely integrates with the Alibaba platform but also creates new value on the basis of the platform through personalized, customized methods to provide unique products and services for users. This differentiated competitive strategy will enable Juyang to stand out among competitors in the platform and further expand market share and enhance brand image while promoting the prosperity and sustained development of the ecosystem. Given the high dependence and low complementarity relationship between enterprises and platforms in the integration stage, Juyang hopes to further improve complementarity in this stage to create new value for the platform ecosystem and feed back into platform innovation.

2) *Paths to adhesive upgrade*

Through enhancements in management and marketing capabilities, achieved via strategies such as "product + service," "customer + brand," "corporate culture restructuring," and "business model restructuring," companies can strategically elevate their competitive standing [10].

Companies in the red ocean often try various methods to increase customer stickiness, either by constantly acquiring new customers or by getting existing customers to buy more products and services or willing to pay higher premiums. Providing a "product + service" is a good way for companies to become irreplaceable, which can enhance their competitive advantage [11].

Furthermore, the strategic practice of data locking on target customers allows companies to gain insights into customer needs and characteristics, facilitating informed market analysis and optimized commodity selection. Then there is a transformation of corporate culture and values, including transparent transformation processes, digital skills training, and digital technology development. After improving digital skills, a new value proposition was formed. The company has achieved two aspects of innovative upgrading. Firstly: positioning restructuring. Positioning is a way for companies to meet customer needs. Originally, Juyang positioned itself as an Internet marketing product service provider, providing only digital marketing services for enterprise digital transformation, but now it has served three major needs in office management, digital marketing, and channel expansion. Upgrade in business positioning. Secondly: operational thinking upgrade. Originally in practical operation work, Juyang's team focused on "what should be done", now tends to determine "what should be cut".

3) *Effects of adhesive upgrade*

Based on the industry knowledge and technical resources learned in the previous stage, enterprises improve their management and marketing capabilities through co-creating value with platforms and complementary

innovation. Platforms exhibit proficiency in general digital transformation technologies, while enterprises bring specialized and personalized knowledge to the digital transformation landscape. This collaborative dynamic facilitates mutual promotion and innovation during the iterative process of enterprise technology upgrades. Since the key of complementary innovation is to achieve "1+1>2" effect through data empowerment [12], Juyang as an industry digital service provider continuously generates data in the operation process, providing rich data support for Alibaba's platform calculation model optimization. The Alibaba platform helps Juyang achieve business full link collaborative level improvement through complementary innovation between platforms and traditional enterprises.

4) *Spiral development drivers*

In the symbiosis stage, the dynamic relationship between Juyang and Alibaba has undergone a transformative shift from the initial platform empowerment model, where Alibaba played a leading role, to a state characterized by mutual needs and collaboration. With its own industry resources, Juyang continues to develop and provide new products and services to meet Alibaba's needs and use them as an entry point to establish a platform service market. Alibaba then provides market analysis based on operational data to better serve Alibaba's platform ecosystem. Compared with the integration stage, Juyang's complementarity with Alibaba in Alibaba's platform ecosystem has been effectively improved. While it still depends on the platform to achieve further development profit.

C. *Independence: Capability and Transformation*

Independence refers to the participants working with the platform enterprises to promote the visualization and deconstruction of a larger network and capability elements, enabling the cooperation parties to accurately assess the value and possibilities of mutual cooperation for new industry scenarios, expand new products and services for the entire industry to meet the upgrading needs of all parties, and use digitalization to help participants build an independent ecology. However, "independence" does not mean that participants can separate from and operate independently of the platform ecosystem [13]. Therefore, participants also need to continuously adapt and initiate a new round of integration, symbiosis, and independence process. During the process of independence, as a sub-platform with independent capabilities, the participants in the platform ecosystem cooperate with multiple platform enterprises to reconstruct the industrial structure, inject new energy, and also feed back to the original platform owner. Platform enterprises also work with participants to promote the value renewal of the original ecosystem, achieving a spiral-like advancement of integration, symbiosis, and independence [14].

1) *Goal of attachment-based upgrading*

In this stage, Juyang initiates the incubation of 'Juyang Cloud,' a novel business sector aimed at exploring innovative service scenarios in collaboration with Alibaba across diverse operational domains, including offices and management. The team has strengthened its service capabilities and is exploring new business cooperation with multiple platform ecosystems such as Alibaba Cloud and Wenzhou Cross-border E-commerce Industrial Park. They are trying to use digital capabilities to break through the whole industry chain from "demand analysis - brand positioning - production - marketing - planning - sales". During this stage, participants adopt a multi-host strategy, serving as a sub-platform integrated into multiple ecological architectures while maintaining high complementarity with individual platform enterprises and reducing dependence.

2) *Pathway of attachment-based upgrading*

The path of attachment-based upgrading includes network visualization, data intelligence, interface rule reconstruction, and industry platform reconstruction to help enterprises form a multi-platform nested collaborative framework [15].

Firstly, there are two types of platform enterprises that cooperate with Juyang: channel logic and ecosystem logic. Channel cooperation refers to the combination and dependence between different companies in the same sales strategy. This approach seeks quick cash flow by introducing mature goods into the market through well-established channels. Conversely, co-creation (ecosystem) cooperation demands significant common investment in the initial stages, with outcomes and costs challenging to precisely calculate during this phase [16].

Secondly, Juyang has increased its scientific research investment to independently develop the intelligent optimization system 'Juyang Cloud'. This platform can cover the entire process from consumer-side to production-side based on data, propose an early warning mechanism, and formulate solutions in a timely manner. The platform forms a closed loop of "data - algorithm - product" during continuous optimization [17]. Data acts as a rapidly flowing resource element that continues to increase value. Continuous accumulation of data helps the platform continuously optimize algorithms and models. Algorithms promote feedback loop operation based on calculation

results and continuously optimize. Products serve as a carrier for feedback loop operation and continuously generate data for feature improvement during use.

Thirdly, Juyang has clarified business needs through platform cooperation, obtained more resources and opportunities, improved efficiency and competitiveness, and promoted long-term business development. The 1688 platform hopes to rely on Juyang's industry experience to increase user stickiness and achieve sustainable development of the platform. In this way, Juyang has achieved platform docking with 1688. Juyang uses 1688's user resources and demand scenarios, while 1688 uses Juyang's industry experience and service capabilities.

Finally, as a participant with independent capabilities and a sub-platform, Juyang cooperates with multiple platform enterprises such as 1688, Dingtalk, etc. Through reconstructing the industrial architecture and achieving cooperation with other independent platforms, they bring new growth to all parties and feed back to the original platform owner [18]. Platform enterprises such as 1688 work with Juyang to jointly promote the value renewal of the original ecosystem. Juyang has launched detailed cooperation with Alibaba in areas such as ecology including a large number of offline activities to attract more users and partners such as the 1688 Longwan E-commerce Live Broadcast Festival cum Longwan Live Broadcast Base and 1688 Yongjia Super Produce Festival.

3) *Effectiveness of attachment-based upgrading*

For Juyang in the autonomous stage, two main factors contributed to its development. Firstly, relying on Juyang's outstanding innovation capabilities, it drove the rapid development of Internet digitalization through technology research and development. Secondly, Juyang moved beyond dependence on a single platform to cooperate with multiple platform ecosystems. This involved connecting the entire process from production to marketing to management, restructuring the digital intelligent decision-making architecture, and empowering enterprises to build a fully digitized business loop. The company's development in this stage is evident in two aspects.

Firstly, it gradually became an autonomous digital service solution sub-platform, collaborating with multiple platform enterprises to create a state of ecological diversity. Secondly, starting from customer needs, it performed relevant operations and provided data support. The entire digitized process is interconnected, with an intelligent data business platform at its core, integrating multiple data sources for analysis [19]. This advances enterprise digital intelligent decision-making, making the industrial chain of "production-sales-management" more efficient and restructuring the industry's value chain process [20]. This leads to large-scale personalized model innovations.

Throughout this process, Juyang reduced its dependence on the Alibaba platform while increasing complementarity, progressing to a stage of low dependence and high complementarity.

IV. CONCLUSIONS

This article provides a comprehensive overview of Juyang's successful digital transformation journey, encapsulated within the three distinct phases of integration, symbiosis, and autonomy.

It comprehensively analyzed Juyang's development path and strategy, and draws the following conclusions: (1) Each stage is characterized by unique development objectives and implementation pathways, collectively illustrating a progressive, upward spiral. (2) In each stage, the complementary and dependent relationship between enterprises and platforms is only a short-term balance, and rapid change is the norm. (3) The essence of digital transformation is to take the visualization of elements as a prerequisite to promote the reconfiguration of management methods, business models, and industrial structures.

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