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THE INFLUENCE OF SERVICE STRATEGY ON ENTERPRISE SERVICE INNOVATION PERFORMANCE: TECHNOLOGICAL MANUFACTURING ENTERPRISES PERSPECTIVE

BY

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Abstract

Manufacturing servitization is a change of business logic of manufacturing enterprises, from product centered to service centered. At the same time, the added value of output of manufacturing enterprises increases, and the value comes not only from products, but also from services and customized integrated solutions for customers. The transformation of manufacturing servitization is mainly reflected in two aspects: from the perspective of industrial chain, servitization requires manufacturing enterprises to move from the processing and manufacturing links in the middle reaches of the industrial chain to upstream R & D and design and downstream marketing. After sales support and other links should be extended, service items and service scope should be increased, and the manufacturing industry should be upgraded to promote the transformation from "made in China" to "created in China". From the perspective of value chain, servitization can increase the added value of products and services, increase enterprise profits, promote manufacturing enterprises to climb from low-end to high-end, and help the manufacturing industry to successfully complete the upgrading of industrial structure. Following the analysis of "strategy behavior performance", this paper studies the impact of service-oriented strategy and organizational implantation on service innovation performance of manufacturing enterprises by using the theories of service-oriented logic and value co creation, customer enterprise interaction, and service innovation, and diversified research methods such as grounded, case study, and empirical analysis. Firstly, based on the in-depth analysis of service business types and development path of manufacturing enterprises, the connotation and dimensions of service strategy are defined and summarized, and the characteristics of service strategy are analyzed; Secondly, combined with enterprise practice and previous research, the paper identifies the constituent dimensions of organizational placement in

manufacturing enterprises by grounded theory, and analyzes its connotation and characteristics. Finally, through the empirical research design, we collect the relevant data of the service transformation practice of China's manufacturing enterprises, and verify the theoretical model and research hypotheses with the help of statistical software.

Key words: Service Oriented Manufacturing Enterprises; Service Strategy; Tissue Implantation; Service Innovation Performance

INTRODUCTION

Background

Since the second half of the 20th century, the rapid rise of the service industry has become a significant feature of world economic development. According to statistics, the service industry has taken up more than 70% of the GDP in the developed countries, and is growing at a rate of 2%-4% every year. With the rapid development of economic globalization and information technology, most developing countries have also accelerated the development of service industry. The added value of China's service industry reached 26220.4 trillion RMB in 2013, surpassing that of the manufacturing industry for the first time since the reform and opening up, and becoming the largest industry in the economy. Along with the development of service economy, the industrial structure of various countries also begins to show the trend of changing from "industrial" to "service".

At the same time, the manufacturing industry, under the dual restrictions of technical bottlenecks and market scale, is increasingly competitive, and the profit brought by traditional product manufacturing is less than 2%, and there is a trend of continuous decline. On the contrary, there is a lot of room for sustainable growth in the market size of services. A survey by the German Association of Machine and Equipment Manufacturers found that the marginal profit from manufacturing goods was on average only 1%, whereas the marginal profit from services such as installation and maintenance was on average more than 10%.Thus it can be seen that service business can bring stable income to manufacturing enterprises. And deepened with the complexity of manufacturing products, the products are highly specialized barriers, such as the user previously but oneself operation or maintenance of the finished product through other services and technology upgrade services such as business, began to low cost high efficiency to complete, can only be started relying on product manufacturers to provide professional services to solve the problem. Manufacturing enterprises can provide high quality services for customers efficiently by virtue of their professional technology, scientific research ability, familiarity with product performance and agile spare parts supply ability. In addition, the rapid development of information technology further provides a favorable support for manufacturing enterprises to implement the service-oriented strategy. Manufacturing enterprises can use artificial intelligence, Internet of Things, big data, cloud computing and other gradually mature and industrialized information technologies to monitor the operation status of their own products in the whole life

cycle, grasp the specific situation of users using products, and serve customers more conveniently and quickly.

Many world-famous manufacturing enterprises have begun to implement the service-oriented strategy, from product equipment manufacturers to product service providers. IBM, GE, ABB and other transformed service business revenue accounted for more than 50% of the total revenue of the enterprise. China's Shaanxi drum, Huawei and many other large manufacturing enterprises are also successful service transformation model. After the implementation of the service-oriented strategy, the operating efficiency of the product units of Shaanxi Drum has been significantly improved, and the energy consumption has been reduced sharply. In 2013, the service business income accounted for 49%, which was basically the same as that of the manufacturing business. In 2014, the service business income accounted for 56%, which was significantly higher than that of the manufacturing business. Thus it can be seen that the service-oriented transformation of manufacturing enterprises is conducive to the improvement of enterprise factor productivity, product added value, extension of value chain and improvement of enterprise performance. Service business has become the main source of income and profit for manufacturing enterprises. Implementing the service-oriented strategy and extending the value to both ends of the "smile curve" has become one of the inevitable choices for the sustainable development of manufacturing enterprises in the current economic environment, as well as a key way for the transformation and upgrading of manufacturing enterprises in China.

In the process of implementing the service-oriented strategy, similar to manufacturing, innovation is the fundamental driving force, and also an effective method to build, improve and maintain service competitive advantage. Service innovation has broken through the traditional product innovation strategy logic which relies on technology development. Under the competition logic of service leading competition paradigm and customer value as the core, service innovation has become an important strategic goal of manufacturing enterprises. In developed countries, 60% of manufacturing enterprises have effectively stood out in the market competition through service innovation. Advanced manufacturing companies such as Rolls-Royce, GE, Xerox, ABB and IBM have adopted service innovation as a new way to enhance their global competitiveness and have been successful. These successful practices have proved that service innovation plays an important role in the sustainable development and competitive advantage of manufacturing enterprises.

At present, many manufacturing enterprises implementing the service-oriented strategy will send their organization representatives (service staff) to the operation site of customer enterprises for a long time, and provide immediate services for customers deeply inside the customer enterprises. Some scholars pay attention to the similar phenomenon in the field of logistics service and name it "Organizational Implants", and research shows that Organizational Implants will promote the service innovation of enterprises. It is not difficult to see that organizational implantation is a phenomenon of the connection between service providers and customers, and also a behavior of service providers to provide services for customers and keep in touch with customers.

Manufacturing companies using the close even zero distance contact with the customer behavior, close interaction with the customers and to establish a continuous relationship, timely and quickly respond to customer service requirements, or even actively guide and excavate potential new customers demand, in ensuring its products run smoothly at the same time, according to customer needs, to adjust product service system, to win customer satisfaction and customer loyalty, and then get more chance and provide services in the future. It is worth noting that the implementation of the strategy of manufacturing enterprises is different from the pure service of service of logistics enterprises, the service staff is whether the client enterprise for manufacturing enterprises as of transplanted tissue implant behavior, the only way tissue implant is an effective way to realize the service innovation manufacturing enterprises in our country, these problems remains to be proven.

Problem Statement

The implementation of service-oriented strategy has become an inevitable trend of manufacturing enterprises' transformation and upgrading, and service innovation has also become an important weapon for manufacturing enterprises to maintain their competitive advantages. To realize service innovation, manufacturing enterprises need to have a deep understanding of customer needs, and capture more customer information or knowledge through close observation and analysis of customers. Therefore, how to choose a service-oriented strategy suitable for their own development, and how to implement effective organizational implantation behavior, so as to generate more service innovation, improve service innovation performance, and gain and maintain competitive advantages are practical problems that manufacturing enterprises urgently need to solve.

The research questions in this paper are abstracted and extracted based on the long-term theoretical research and practical investigation of the research team, aiming at the practical problems existing in China's economic development and enterprise growth. Centered on the core issue of "how manufacturing enterprises' service innovation performance is affected by service-oriented strategy and organizational implantation behavior", the research process will be carried out in accordance with the basic theoretical analysis, theoretical hypothesis, theoretical model construction, empirical test, conclusions and management suggestions and other normative scientific steps.

Firstly, the path of service transformation and the implementation characteristics of service-oriented strategy of manufacturing enterprises were clarified through literature analysis, and on this basis, the connotation characteristics of organizational implantation were defined. Secondly, we applied the root theory to explore the composition dimension of tissue implantation through in-depth interview, combined with relevant theories and literature analysis, and developed the measurement scale of tissue implantation. Then, based on the case analysis results of typical enterprises, relevant literature review and theoretical derivation results, the hypothesis of the relationship between service-oriented strategy, organizational implantation and service

innovation performance of manufacturing enterprises is proposed, and the corresponding theoretical model is constructed. Finally, the actual operation data of manufacturing enterprises in China are collected to verify the research hypothesis and theoretical model.

Research Questions

Combined with the current development of manufacturing enterprises and the current situation of academic theoretical research, it is not difficult to find that, under the historical opportunity of service transformation, manufacturing enterprises urgently need to develop new services to improve service innovation performance and achieve the purpose of building core competitiveness. However, most manufacturing enterprises are not clear about the innovation law under the paradigm of "co-creating value with customers", and have not yet found the key path to effectively improve service innovation performance. Therefore, they urgently need the guidance of corresponding theory and method system. However, the current academic researches on the service transformation of manufacturing enterprises mostly focus on the driving factors and obstacles of the transformation. The research on service innovation is still in the primary stage, the focus has not been completely transferred to the impact of service innovation performance; However, the research on the behavior phenomenon of manufacturing enterprise organization implantation which keeps interactive contact with customers and may lead to service innovation is rare. In addition, confirmatory analysis of practice data of manufacturing enterprises in China is generally less. This kind of theoretical research lags far behind the practical needs of enterprises.

In view of this, the paper closely with the reality of manufacturing enterprises in China, with the aid of academia rise and development of manufacturing enterprises, create value, service innovation and relevant theory of service, focus on how the manufacturing enterprise in the process of implement the strategy of service through tissue implant behavior and customer interaction model to build appropriate and efficient response to customer demand, to realize the problem of service innovation, in order to find the effective path of manufacturing enterprise promote service innovation performance, and further enrich the manufacturing enterprise service and the service innovation of theoretical system at the same time, services to manufacturing enterprises practice reference for the transformation and implementation of service innovation.

The core issues of this paper focus on the following three aspects:

(1) What are the connotations and characteristics of service-oriented strategy and organizational implantation in manufacturing enterprises?

(2) Does organizational implantation contribute to the implementation of service-oriented strategy and improve service innovation performance?

Research Objectives

Servitization strategy and service innovation have become an important way for manufacturing enterprises to obtain and maintain competitive advantages, and effective interaction with customers is the key guarantee for manufacturing enterprises to implement Servitization strategy and service innovation smoothly. In the practice of current manufacturing enterprises development with the customer interaction phenomena of tissue implant, but did not receive the attention of academic research, to this kind of in-depth customer within close interaction with customers service behavior, dimension and other basic theory has yet to see its connotation and composition system in-depth theoretical study, and tissue implant in enhance the effectiveness of the manufacturing enterprise service innovation performance and action path also needs to be verified. In the critical period of service transformation and upgrading of China's manufacturing enterprises, it is an important issue to find an effective way to improve service innovation performance in combination with the current situation of the implementation of service-oriented strategy of China's manufacturing enterprises. Therefore, it is necessary to explore the mechanism of the implementation of service-oriented strategy on service innovation performance of manufacturing enterprises, analyze the connotation characteristics of organizational implantation and identify its constituent dimensions, and reveal the role path of organizational implantation in the relationship between service-oriented strategy and service innovation performance of manufacturing enterprises.

Specifically, this paper will decompose the basic research proposition of "the impact of service-oriented strategy and organizational implantation on service innovation performance of manufacturing enterprises" layer by layer from the following three aspects:

(1) Clarify the connotation and characteristics of manufacturing enterprises' servitization strategy and tissue implantation, explore and verify the constituent dimensions of manufacturing enterprises' servitization strategy and tissue implantation, and standardize the description of the servitization strategy and tissue implantation;

(2) Analyze the relationship between service-oriented strategy, organizational placement and service innovation performance, put forward the corresponding research hypothesis and construct the theoretical conceptual model.

LITERATURE REVIEW

Service innovation performance

The previous description of service innovation performance by scholars mainly reflects the enterprise performance brought by service innovation from the two aspects of process performance and outcome performance (Fizgerald et al., 1991;Voss, 1992).Thereafter and other scholars to the further analysis of process performance and result performance, the process of

service innovation performance mainly measuring service innovation efficiency, contain costs, speed, number of items such as index, and the service innovation performance is mainly the result of the measurement of the effect of service innovation, including financial conditions, competitive, quality indicators (Storey & Kelly, 2001; Hsueh et al., 2010). Domestic scholar Jian Zhaoquan et al. (2014) combined the Balanced Scorecard with the suggestions of previous scholars to measure service innovation performance from three aspects of internal, financial and customer, and six items.In this paper, based on the reality of service innovation of Chinese manufacturing enterprises, referring to the description of service innovation performance by the above-mentioned scholars, and comprehensively considering the internal process and result performance of enterprises, as well as the external market and customer performance, six items, such as "service innovation promotes the formation of new service concept", are applied to reflect the service innovation performance of manufacturing enterprises.

In recent years, foreign scholars mostly use the method of empirical test to study the relationship between service-oriented strategy and firm performance. Homburg et al. (2002) discussed the main influencing factors of the service-oriented strategy of manufacturing enterprises and its impact on enterprise performance, and found that the service-oriented strategy has a significant positive impact on both the financial and non-financial performance of the organization. Kaushik Sengupt et al. (2006) verified the impact of product supply chain strategy on the operation performance and financial performance of manufacturing department and service department respectively through empirical analysis, and found that the performance results of the same strategy in different departments are significantly different, thus drawing the enlightenment that managers should establish competitive points and appropriate standards before making supply chain strategy. Neely(2008) analyzed the influence of regional economy and enterprise scale on the service-oriented development of manufacturing enterprises, and empirically concluded that the higher the degree of service-oriented, the more significant the improvement of enterprise performance. Gunter Lay et al. (2010) conducted an empirical study on the relationship between service level and enterprise performance in the European manufacturing industry, and found the mediating role of service embedding degree in the impact of service level on enterprise performance. Gebauer(2010) empirically tested the impact of organizational culture and the service orientation of organizational structure on enterprise performance in service-oriented strategy, and found that the service orientation level of organizational culture was positively correlated with enterprise performance, while the type of organizational structure played a moderating role.Oliva (2011) survey to collect the European high value durable equipment manufacturing enterprise service business development organization in the process of separating degree and performance of the services related data, the empirical study found that the separation of product and service organization in the management commitment plays a positive impact on financial performance relationship adjustment, in the management commitment and positive intermediary role between non-financial performance. Singh P J, (2016) focus on the important role of customers in the manufacturing enterprises to carry out the strategy of service, based on the survey of 931 manufacturing companies in 22 countries, studies the service and the

relationship between corporate performance and customer integration in which the adjustment, the results found that the dominant strategy of service products and no significant relationship between corporate performance and positively related to customer service strategy and enterprise performance, and customer integration would weaken the dominant strategy of service products and the relationship between the corporate performance, enhance customer service strategy and the relationship between the corporate performance. Ruiz-Alba J et al. (2017) used empirical research method to explore the impact of service-oriented manufacturing enterprises' implementation on enterprise performance in Spain. The research results show that advanced services have indirect impact on enterprise performance through service effect, while basic services cannot significantly improve enterprise performance. Sousa R (2017), such as the theory expounded and empirical analysis provide basic services and advanced manufacturing enterprise service two different service strategy influence on enterprise performance, it was found that basic service will support enterprises advanced service provision, will not affect the financial performance of the enterprise, to provide the service of manufacturing enterprises should distinguish and balance the basic service and advanced service to improve the performance.

Product-centered servitization strategy

Products as the center of the service Strategy (Servitization Strategy Supported for the Product) refers to manufacturing enterprise's strategic mode on the basis of providing tangible products add a certain content of service, service and products with high correlation, including Product installation, maintenance, test and spare parts supply and management, service supplement products to enhance Product features and differentiation, play a lower customers to use the Product cost, increase the role of the core value of tangible products.

Manufacturing enterprises that implement the product-centered service-oriented strategy provide customers with basic services such as product installation, maintenance, testing, spare parts supply and management. These services exist as additional supplements to enhance product functions and differentiation. Adopting the product-centered service-oriented strategy can help manufacturing enterprises to obtain new profit sources in the fiercely competitive product market. By providing customers with product service packages, manufacturing companies can extend their value chain to the whole process before, during and after the sale of their products, thereby enriching product content, enhancing product differentiation, and thus improving product competitive advantage and enterprise performance.

Thus it can be seen that the starting point of product-centered servitization strategy is to improve product performance and promote product sales, which is often seen in the initial stage of manufacturing enterprises' servitization transformation. It covers two strategic models of "basic service and value-added service", corresponding to two strategic positioning of "after-sale service provider and customer support service provider".

① Basic service strategic mode and after-sales service provider strategic positioning

Under the basic service strategy mode, the products of early manufacturing enterprises have low technical content, and the operation of customers using the products is relatively simple. Therefore, customers have less demand for the products and services of manufacturing enterprises in both content and quantity. At this time, manufacturing enterprises are only product producers and suppliers providing products for customers, whose core business is to achieve the smooth production and mass sales of products. Service is not the main business of enterprises, and services are less concerned than products.

Later, with the fierce competition in the product market and the growth of customers' demand for additional services, manufacturing enterprises began to pay attention to the additional services related to the product on the basis of the production of tangible products, such as installation, use consultation, breakdown maintenance and other after-sales services. At this stage, manufacturing enterprises still take product production and sales as the core business, and service is only an additional product of product sales, which does not independently charge or exist as a new profit growth point of the enterprise.

When providing basic product additional services, manufacturing enterprises, as after-sale service providers, provide products with attractive prices by taking advantage of cost leadership and guarantee the basic functions of products through after-sale service to establish market position. For manufacturing enterprises in this stage, products are the main source of competitive advantages, and the purpose of services is to guarantee the basic functions of products. Therefore, in this stage, the services provided by manufacturing enterprises are a series of pre-defined and highly standardized after-sales services, and the products are the direct recipients of these services, while the relationship between manufacturing enterprises and customers is weak.

From the perspective of value creation, the value of after-sale service providers mainly comes from the existing product value.

② Value-added service model and customer support service provider positioning

Under the value-added service strategy model, with the upgrading of technical complexity of products, the content of services is increasingly rich, and customers' demand for customization of products and services is gradually increasing. At this time, manufacturing enterprises to provide customers with a combination of products and services of enhanced products. Services have evolved from simple installation and maintenance to sophisticated services such as system integration and customer operational process support. For example, Rolls-Royce, the world's leading aircraft engine manufacturer, provides preventive maintenance value-added services such as "remote diagnostics" to its customers. Service business occupies an increasing proportion in the core business of manufacturing enterprises and becomes an indispensable part of product strategy. At this stage, the service business of the manufacturing enterprises will break away from the dependence on the products in the after-sale service, and begin to increase the profits of the enterprises as the paid intangible products.

Customer-centered service-oriented strategy

Customer as the center of the service Strategy (Servitization Strategy Supported for Customer) refers to the development Strategy of manufacturing enterprises based on product service shift to service based on Customer requirements, manufacturing enterprises based on tangible products, the original integration in the product into its elements such as skills, knowledge, into various service elements (e.g., information consulting, research and development, technical support, etc.), by selling "service solution" or "composite service" to meet Customer demand, the service is no longer binding with its own products,Customers can experience the service without buying a tangible product.

Manufacturing enterprises implementing the customer-centered service-oriented strategy provide customers with advanced services independent of products, such as information consultation and technical support. These services are no longer tied to the products, but exist as value sources independent of the products. Adopts the strategy of service customer as the center, to help manufacturing enterprises to further expand its service profit source, will extend its business scope from throughout the product life cycle can be separated from the product of service supply chain, and deep excavating potential demand of the customers, take advantage of its operating right of access to services, around the customer needs to provide a full range of products and services, become a service outsourcing provider or package solution provider, so as to create value for customers, realize win-win situation of the enterprise and customer.

Influence of Servicalization Strategy on Service Innovation Performance

In recent years, the relationship between enterprise strategy and innovation performance has attracted the attention of many scholars. For example, Wang Yurong et al. (2011) used the cross-section data of Chinese manufacturing enterprises to study the different influences of different types of technology strategy selection on enterprise innovation performance, and pointed out that low-end technology strategy and high-end technology strategy had a positive effect on enterprise innovation performance at different stages of the development of manufacturing enterprises respectively.He Jianhong et al. (2012) divided innovation strategies into exploratory and exploitative types. Through the analysis of 257 survey data, they verified the impact of different innovation strategies on enterprise innovation performance, and concluded that exploitative innovation strategy had a greater impact on innovation performance than exploratory innovation strategy.Yu Hao (2012) in combination with existing research at home and abroad such as strategic orientation can be divided into competition orientation, future orientation, technology orientation and customer orientation, four dimensions, and points out that technology oriented strategy will lead to a strong organizational inertia and then hinder the ability of product innovation, customer oriented strategy will strongly affect the enterprise innovation behavior, and this kind of strong effect whether is questionable;Du Haidong et al. (2013) concluded from the data analysis of enterprises in the Pearl River Delta region that the two different strategic

orientations, market orientation and entrepreneurship orientation, both have significant positive effects on product innovation performance, but the effect of market orientation is stronger than that of entrepreneurship orientation.Wu Xiaoyun (2013), such as the innovation strategy according to the globalisation of the innovation network's openness and innovation process, can be divided into high and low combined with two-dimensional four kinds of strategy, on the basis of research of different types of innovation strategy of multinational enterprise innovation performance, and it is concluded that only the degree of globalization and openness in combination, the innovation performance of enterprise's breakthrough was the highest, other types of innovation strategy of incremental innovation performance is significant; Kindstrom D (2014), such as from a multidimensional perspective focus on manufacturing enterprise's service innovation, points out that whether the implementation of product manufacturing enterprises as the center of service or customer process centered strategy, can improve enterprise service innovation performance, but for manufacturing companies, around the customer service process than just around the challenge of its own products to provide services, and at the same time, the strength of its service innovation. Song Jing et al. (2014) focused on the different influences of different strategic orientations on corporate collaborative innovation performance under the regulatory effect of network embeddedness. They pointed out that both market orientation and moderate entrepreneur orientation can improve corporate collaborative innovation performance, and the balance of dual strategic orientation also has a significant positive impact on corporate collaborative innovation performance.Wei Jiang et al. (2016) proposed market-oriented strategic flexibility in combination with strategy and marketing theory, and verified the direct positive impact of market-oriented strategic flexibility on innovation performance.Wu Xiaobo et al. (2016) investigated manufacturing enterprises in the Yangtze River Delta region and found that different types of strategic flexibility had a significant positive impact on enterprise innovation performance, but forward-looking and reactive strategic flexibility had different effects on innovation performance as the speed of environmental change and the difficulty of prediction changed.The above scholars' studies on the relationship between enterprise strategy and innovation performance from different perspectives show that innovation performance will be different under different strategic guidance, and which strategic guidance has more significant positive impact on innovation performance cannot be generalized. Wirtz J et al. (2016) pointed out that the application of high-quality service operation and the conversion of loyal and favorable customer base into service strategy by manufacturing enterprises will improve the service innovation performance of enterprises.

The product-centered service-oriented strategy refers to the service that manufacturing enterprises add certain content on the basis of providing tangible products. Service is highly correlated with products. Service exists to enhance product functions and differentiation as a supplement of products, and the purpose of service provision is to increase the core value of tangible products. Based on product strategy of service as the center, can help manufacturing enterprises in the fierce competition in the market to seek to a new source of profit, manufacturing enterprises through service to extend its value chain to the whole process of

products before sales, after sales and sales, the rich product content, difficult to imitation of and use the service to improve the degree of product differentiation. In the implementation of the product-centered service-oriented strategy, manufacturing enterprises improve product performance by developing new services related to the product, or change the way of providing services around the core product to reduce service cost and improve service efficiency, so as to realize continuous service innovation.

METHODOLOGY

Research Design

Based on the hypothesis of the previous study on the relationship between variables, the measure index of each principal variable is designed, and the research method in the following paper is explained. Specifically, it first introduces the principles and steps of questionnaire design, and expounds the principles and standards of sample selection and data collection. Secondly, through the exploratory factor analysis and reliability test application of small sample data recovered from the initial measurement scale of the main research variables were analyzed, and the final scale was obtained. Finally, this paper introduces the research methods and tools to be adopted in the follow-up empirical research in detail, which provides the basic support for the empirical analysis in the next chapter.

(1) Dependent variable

The dependent variable of this study is service innovation performance.The previous description of service innovation performance by scholars mainly reflects the enterprise performance brought by service innovation from the two aspects of process performance and outcome performance (Fizgerald et al., 1991;Voss, 1992).Thereafter and other scholars to the further analysis of process performance and result performance, the process of service innovation performance mainly measuring service innovation efficiency, contain costs, speed, number of items such as index, and the service innovation performance is mainly the result of the measurement of the effect of service innovation, including financial conditions, competitive, quality indicators (Storey & Kelly, 2001; Hsueh et al., 2010). Domestic scholar Jian Zhaoquan et al. (2014) combined the Balanced Scorecard with the suggestions of previous scholars to measure service innovation performance from three aspects of internal, financial and customer, and six items.In this paper, based on the reality of service innovation of Chinese manufacturing enterprises, referring to the description of service innovation performance by the above-mentioned scholars, and comprehensively considering the internal process and result performance of enterprises, as well as the external market and customer performance, six items, such as "service innovation promotes the formation of new service concept", are applied to reflect the service innovation performance of manufacturing enterprises. Specific measurement items are shown in Table 3-1.

Table 3-1 Measurement dimensions and items of service innovation performance

Variable	Item no.	item
Service Innovation The performance	SIP1	Service innovation promotes the formation of new service concept
	SIP2	Service innovation increases the number of new services or products
	SIP3	Service innovation optimizes the process of our existing services
	SIP4	Service innovation improves our return on investment
	SIP5	Service innovation has increased our market share
	SIP6	Service innovation improves customer satisfaction with our services or products

(2) Independent variable

The independent variable of this study is service-oriented strategy. Combining with the Mathieu (2001);Gebauer etc. (2010);Zhou Yanchun (2010) and other scholars studied the dimensions of service-oriented strategy and identified two dimensions: product-centered service-oriented strategy and customer-centered service-oriented strategy. Among them, the product-centered servitization strategy reflects the correlation strength between the services provided by the manufacturing enterprise and the products it produces, while the customer-centered servitization strategy reflects the correlation strength between the services provided by the manufacturing enterprise and customer demand. Corresponding to the two dimensions of service-oriented strategy are two competitive dominant logics. Vargo and Lusch(2004) emphasized the importance of service-led logic and developed measurement scales of product-led logic and service-led logic based on service competition logic, which are widely used for reference and application in subsequent studies (Neu and Brown, 2005). Later, Gebauer(2005) and other scholars revised the scale from the perspective of the relationship between strategy and organization, and some domestic scholars proposed and tested the measurement scale of customer-oriented strategy in the context of the development of Chinese enterprises (Kong Ting, Sun Linyan, 2013;Li Yu and Shane, 2014).Referred to the previous research results of the above-mentioned scholars, this study applied 5 and 6 items to measure the product-centered and customer-centered servitization strategies respectively.See Table 3-2 for specific questions.

Table 3-2 Measurement dimensions and items of servitization strategy

variable	Item no.	item
Product - centered service strategy	SSP1	We gain and maintain competitive advantage by increasing the value of our products
	SSP2	We focus on the efficiency of delivering products and services to customers
	SSP3	We often discuss how to create and enhance the value of products and services
	SSP4	We attach importance to the improvement of service efficiency and service process related to products

	SSP5	We believe that the development of product-centered services is conducive to the improvement of business efficiency
Customer-centered service-oriented strategy	SSC1	"Customer satisfaction" is one of the most important items in our strategic goal
	SSC2	We ask ourselves to do our best to meet the diverse and personalized needs of our customers
	SSC3	We will invite customers to participate in the product development design and production process
	SSC4	We often collect customers' comments on our products and feed them back to the relevant departments
	SSC5	We value customers' suggestions for improvement of our products and services
	SSC6	We will organize discussions on the potential needs of customers and devote ourselves to developing potential customers

Population/Sampling/Unit of Analysis

This study focuses on the service transformation of manufacturing enterprises under the guidance of service-oriented strategy, by implanting service organization representatives inside the customer enterprise behavior measures, to improve the enterprise's service innovation performance. Therefore, the sample that the research focuses on is the B2B service manufacturing enterprises with tissue implantation phenomenon. In terms of the nature of enterprises, the nature of the investigated enterprises includes state-owned enterprises, private enterprises, foreign-funded enterprises and so on. In terms of industry, considering the product complexity of manufacturing enterprises and the industry dispersion of segmented industries, the data sample scope is limited to five segmented industries such as general equipment manufacturing industry and special equipment manufacturing industry. The reasons for choosing these industries are as follows: firstly, the products produced by the manufacturing enterprises in these industries are mostly the production and operation equipment of the customer enterprises, and they have sufficient motivation to implement the service transformation; Secondly, the manufacturing enterprises in these industries have a long-term relationship with most customers, and the customer group is relatively stable and the relationship strength has the possibility of tissue implantation service. In addition, most of the enterprises in these industries are large in scale and have a high degree of service orientation, and at the same time, they attach more importance to service innovation. In terms of regional selection, in order to improve the randomness of samples as much as possible under the condition of limited funds, the large-scale survey mainly selects several regions with concentrated manufacturing enterprises, such as Northeast China, Northwest China, Central South and East China, for questionnaire distribution. The specific sample enterprises in the survey are mainly well-known manufacturing enterprises that have established cooperation relations with the research team in the early stage, as well as related enterprises covered by university alumni and other personal relationships. With the help of these enterprises, we can contact other enterprises that meet the requirements of the survey, and expand the sample size in a snowball way.

Instrumentation

The strategic mode in which manufacturing enterprises provide product-related services to customers around their core products.

To what extent do you think the following statements are consistent with the actual situation of your company? 1- Completely inconsistent;2- Comparatively inconsistent; 3- Uncertainty;4- More consistent;5 - completely Consistent	Not at all	Comparisons are incoherent	Don't indeed set	More consistent	Completely consistent
Q1: We focus on the efficiency of delivering products and services to customers	1	2	3	4	5
Q2: We often discuss how to create and enhance the value of products and services	1	2	3	4	5
Q3: We attach importance to the improvement of product-related service efficiency and service process	1	2	3	4	5
Q4: We believe that the development of product-centered services is conducive to the improvement of enterprise efficiency	1	2	3	4	5

A strategic mode of manufacturing enterprises to provide customers with required services around the customer operation process.

To what extent do you think the following statements match the actual situation of your company? 1- Completely inconsistent;2- Basically inconsistent;3- Uncertainty;4- Basically the same;5- Complete agreement	completely No phase	Basically not	Don't indeed set	consistent	Completely consistent
Q5: "Customer satisfaction" is one of the most important items in our strategic objectives	1	2	3	4	5
Q6: We ask ourselves to do our best to meet the diverse and personalized needs of our customers	1	2	3	4	5
Q7: We will invite customers to participate in the product development, design and production process	1	2	3	4	5
Q8: We value customers' suggestions for improvement of our products and services	1	2	3	4	5
Q9: We will organize discussions on the potential needs of customers and devote ourselves to developing potential customers	1	2	3	4	5

Reliability test

Reliability refers to the internal consistency and reliability of the constituent indexes of variables. Cronbach's A coefficient is used to test the reliability of each variable scale, and SPSS19.0 is used to analyze the reliability of the questionnaire data.Table 3-4 shows the values of Cronbach's A coefficient of each variable and the correlation coefficient between items after correction. From the data results, the correlation number between the item and the population of all variables is basically above 0.6, and Cronbach's A coefficient of all variables is greater than 0.75, and the Cronbach's A coefficient decreases to different degrees after the deletion of a item, indicating that

the reliability level of all variables in this study is good.

In addition, the path coefficient of each variable item obtained from confirmatory factor analysis (CFA) by AMOS was used to calculate the Composite Reliability of each variable, which reflects whether all questions in each potential variable consistently explain the potential variable. The value of Cr is calculated by the formula Cr =(D)2)/((D)2)+ "6), where 6 is the variation explained by the error variable of each item.The higher the CR value is, the more reliable the reliability of the variable is, and the critical value is usually 0.7.As can be seen from Table 3-4, CR values of all variables in this study exceeded 0.7, which again verified that the variables used in this study had good reliability.

Table 3-4 Variable reliability, path coefficient and AVE result summary

Table3-4 Results Summary of the Reliability Analysis, Confirmatory Factor Analysis and AVE

variable	item	qid	Normalized path Regression	Corrected item The total number of	After deleting the item Cronbach 'sa value	Cronbach 'sa value	CR	AVE
Product - centered service strategy	SSP2	Q1	0.701	0.581	0.740	0.753	0.810	0.593
	SSP3	Q2	0.698	0.668	0.729			
	SSP4	Q3	0.917	0.687	0.622			
	SSP5	Q4	0.743	0.596	0.693			
Customer-centered service-oriented strategy	SSC1	Q5	0.858	0.799	0.861	0.894	0.896	0.635
	SSC2	Q6	0.822	0.770	0.864			
	SSC3	Q7	0.738	0.672	0.885			
	SSC5	Q8	0.807	0.755	0.867			
	SSC6	Q9	0.753	0.718	0.876			
Plant employees Into the	EI2	Q10	0.727	0.701	0.932	0.934	0.935	0.673
	EI3	Q11	0.841	0.810	0.921			
	EI4	Q12	0.841	0.810	0.921			
	EI5	Q13	0.832	0.804	0.922			
	EI7	Q14	0.794	0.770	0.925			
	EI8	Q15	0.896	0.864	0.916			
	EI9	Q16	0.802	0.751	0.927			
Equipment plant Into the	DI3	Q17	0.728	0.682	0.906	0.912	0.913	0.636
	DI4	Q18	0.854	0.799	0.890			
	DI5	Q19	0.850	0.796	0.890			

	DI6	Q20	0.813	0.779	0.893			
	DI7	Q21	0.752	0.724	0.900			
	DI8	Q22	0.782	0.751	0.897			
Service and The new performance	SIP1	Q23	0.731	0.697	0.884	0.897	0.922	0.594
	SIP2	Q2	0.693	0.669	0.887			
	SIP3	Q25	0.765	0.729	0.878			
	SIP4	Q26	0.774	0.743	0.876			
	SIP5	Q27	0.818	0.746	0.876			
	SIP6	Q28	0.835	0.758	0.874			

Validity test

Validity refers to the extent to which the scale indicators reveal the nature and range of the measured variables, mainly including content validity and structure validity. Content validity reflects the adequacy and appropriateness of the content of the scale. Content validity is usually difficult to be evaluated quantitatively and is often judged subjectively. This article mainly through three ways content validity of the control variable measure scale: first of all, the study was to use most of the scale from previous literature has been adopted by test and multiple mature scale, and combined with China's national conditions and enterprise development condition and according to the related fields of industry and academia, experts and scholars suggested to carry on the adjustment; Secondly, in the preface of the questionnaire, it clearly stated that the purpose of the survey was to explore and validate academic research, and that it was to conduct sample analysis for the industry, not to reflect the special case of a single enterprise. At the same time, it promised to keep the data of sample enterprises strictly confidential and feedback the research results to respondents according to their wishes. Thirdly, after a small sample survey, the measurement items are corrected and adjusted through the test of sample data. The above measures can ensure the content validity of the scale to a certain extent. Structural validity reflects the extent to which the scale can measure the characteristics of theoretical concepts, mainly including the convergence validity and discriminant validity of the scale items. This paper used SPSS and AMOS to conduct Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis respectively to test the structural validity of the variable scale.

Findings & Discussions

Profile of Respondents

The characteristics statistics of questionnaire fillers of the enterprises surveyed in this study are shown in Table 4-1.From the table data can be seen, researchers surveyed to be familiar with the service business and have a direct contact with the customer department managers in the majority, accounting for more than 50% of all respondents, the middle manager more top managers are more familiar with the specific service business and customer relationship, and more than first-line employees understand the strategic goals of enterprises and development intention, therefore, of the questionnaire to fill in a certain extent can guarantee the questionnaire to get the data related to the enterprise actual reflection of truth; Of personnel education in the majority with undergraduate and graduate students, including undergraduate accounted for the largest, close to 60%, graduate students and to the degree of the respondents make up about a quarter of the total number of questioned, these data suggest that most researchers questioned degree is higher, can fully understand the questionnaire involving issues, to ensure the effectiveness of the answer;

Most of the interviewees have worked in the sample enterprises for more than 5 years, and most of them have worked for more than 10 years, which indicates that the interviewees are familiar with the development process of the enterprises they work for and have some understanding of the details of the strategic transformation and business transformation of the enterprises. This further guarantees the accuracy of the answers of the questionnaire returned by our survey.

The gender ratio of respondents is more than 80% male, with a relatively small number of female, which is also consistent with the fact that the majority of managers in China's manufacturing enterprises and most enterprises are male.

Table 4-1 Characteristics statistics of interviewees

Table 4-1 The Descriptive Statistics of Interviewee

project	category	The number of	Percentage (%)
position	General manager or above senior manager	76	28.253
	Service or Marketing Department manager	158	58.736
	Ordinary frontline service staff	35	13.011
Record of formal schooling	Master degree or above	69	25.651
	Undergraduate course	161	59.851
	College degree and below	39	14.498
Working fixed	1 ~ 5 years	55	20.446

number of year	6 ~ 10 years	101	37.547
	11 years and above	113	42.007
gender	male	218	81.041
	female	51	18.959
A combined		269	100

Description of sample enterprise characteristics

Table 4-2 shows the statistical results of the subdivided industries, ownership nature and enterprise size of the sample enterprises. It is not difficult to see from the data in the table that in the sample enterprises,

General equipment manufacturing sector, special equipment manufacturing and communications equipment manufacturing and instrumentation manufacturing and other customers in the majority with enterprises rather than individual consumers accounted for about 20% than in manufacturing enterprises, in addition to the other manufacturers have accounted for more than 18% of the total number of samples, the sample of the subdivision industry distribution is evener, this aspect shows the sample is representative, and sample distribution in several niche industry to a certain extent can control the industry difference influence on the results of the study, on the other hand can also help the expansion of the research results at the industry level;

In terms of ownership, including state-owned manufacturing state-owned enterprises and private enterprises accounted for more than a third of the total sample, the manufacturing enterprise with foreign investment proportion is relatively small, about nearly 20% of the total sample, other such as collective enterprises accounted for about 8%, thus, the sample number of enterprises belong to different in nature of the sample distribution, it provides the basis for selecting one of the properties as control variables to which the enterprise belongs. In terms of enterprise scale, number of employees in the sample enterprises from 300 to the following type of small business to more than 1000 people in the big companies all have cover, more than the annual sales from 20 million to 100 million are involved in manufacturing enterprises, the size of the sample number of employees and annual sales, distribution on the whole are present medium and small enterprises accounted for at least one of the most times, large distribution trend of the distribution results present the sample enterprises in scale with relatively comprehensive scope, has certain representativeness, on the other hand also shows that number of employees and annual sales have certain relevance, In addition, the uneven distribution of the size of the sample firms provides a supporting basis for considering the size of the firms as the control variable.

From the age distribution of the sample enterprises, set up 10-20 years of enterprises accounted for the proportion of the sample companies is the largest, more than 50%, followed by the establishment of more than 20 years of enterprises accounted for more than 23% of the total

sample, within ten years the number of enterprises set up time is relatively small, therefore, the study sample enterprise founded in fixed number of year that age has a representative, in a broader distribution is not uniform, however, may need to be considered in the later research enterprise age differences between the impact on the research conclusion;

The sample enterprise according to the province is divided into the northeast, northwest, central, east China's four big areas, from statistics, belong to the four areas of manufacturing enterprise sample quantity proportion in the total sample size is around 25%, the distribution is evener, explain the research samples obtained has certain representativeness in the region distribution of the enterprise.

Sample enterprises providing services from type and their strategy of service categories, samples of more than 73% of the enterprise is still in the early stages of transformation of service, to provide customer service is the foundation of main products, such as installation and maintenance overhaul entered the stage of strategic transformation of service to customers as the center of manufacturing enterprises is less.To some extent, this reflects that China's manufacturing service transformation is in the primary development period.

Research Goal 1 (R.O.1) The impact of service-oriented strategy on service innovation performance

Hierarchical regression method is used to test the impact of service-oriented strategy on service innovation performance, mainly including hypothesis H1 and H2.Among them, H1 assumes that product-centered servitization strategy has a positive impact on service innovation performance, and H2 assumes that customer-centered servitization strategy has a positive impact on service innovation performance.SPSS22.0 was used to conduct statistical analysis of the data using Model 1, Model 2 and Model 3 (the results of model-level regression analysis are shown in Table 4-5).

Table 4-5 Model Hierarchy Analysis Results

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	The model 7	Model 8	Model 9	The model	The model
variable	Service innovation performance (standardized P-coefficient)					Employee implantation (normalized P-coefficient)			Intelligent device implantation (normalized		
Control variables											
age	015.	- 034.	- 018.	- 010.	- 010.	- 053.	- 097.	- 088.	- 003.	- 045.	- 033.
The nature of the	028.	- 046.	- 052.	- 058.	- 062.	139.	071.	068.	140.	077.	074.
The size of the	082.	- 014.	067.	059.	056.	123.	036.	083.	093.	012.	070.
The independent variables											

Product - centered service strategy		634 * * *	252 * * *	250 * * *	* * *		088.	065.		536 * * *	426 * * *
Customer-centered service-oriented			596 * * *	368 * * *	335 * * *			576 * * *			263 * * *
Intervening variable											
Employees into				311 * *	263 * *						
Smart device implantation					169 * *						
R^2	0.007	0.395	0.606	0.614	0.665	0.032	0.039	0.421	0.024	0.302	0.409
AR^2		0.389	0.210	0.008	0.051		0.007	0.382		0.278	0.107
The F value	0.588	43.162 * * *	80.830 * * *	68.376 * * *	59.133 * * *	2.900	3.551	38.180 * * *	2.135	28.489 * * *	36.353 * *

Note :(1) * represents P <0.05, ** represents P <0.01, and *** represents significant at P <0.001;(2) N = 269

According to the steps and requirements of hierarchical regression analysis, service innovation performance is taken as the dependent variable. Firstly, control variables are added into Model 1, including the age, nature and scale of the enterprise to which the enterprise belongs. The regression results of Model 1 show that, under the sample and statistical data, the age, nature and scale of the firm to which the firm belongs have no significant influence on the service innovation performance at the significant levels of $p<0.001$, $p<0.01$ and $p<0.05$.In other words, whether the manufacturing enterprise has been established for a long time, is a state-owned enterprise or a private enterprise, is a large-scale enterprise or a small enterprise, and these differences have no significant impact on the improvement of service innovation performance of manufacturing enterprises.

In Model 2, independent variable product-centered serverization strategy was added to the second piece on the basis of control variables. The regression results show that all control variables still have no significant impact on service innovation performance, while product-centered serverization strategy has a significant positive correlation with service innovation performance ($\beta=0.634$, $P <0.001$).Compared with Model 1, the R2 of Model 2 increased by 0.389. Meanwhile, the F value of Model 2 passed the test, indicating that there was a significant relationship between the explained variable and the explanatory variable, and hypothesis H1 was supported.

Model on the basis of model 2 3 to join the new variable customer as the center of service strategy, the control variables in each of the significant level still had no significant effect on service innovation performance, product strategy of service as the center of service innovation performance still significant positive correlation (beta = 0.252, $p < 0.001$), while the customer as the center of the strategy of service innovation of service performance significantly, and the

effect is greater than the product strategy of service as the center of impact on service innovation performance (beta = 0.596, $p < 0.001$).Meanwhile, compared with Model 2, the R2 of Model 3 increased by 0.210, and the F value of Model 3 passed the test, indicating that there was a significant relationship between explanatory variable and dependent variable in the model. Hypothesis H2 passed the verification.

In this paper, the impact of different service-oriented strategies on service innovation performance of manufacturing firms is verified respectively under two dimensions of product-centric and customer-centric service-oriented strategies. The empirical results show that both the product-centered servitization strategy and the customer-centered servitization strategy have a significant positive impact on service innovation performance, and compared with the product-centered servitization strategy, the customer-centered servitization strategy has a stronger impact on service innovation performance. This indicates that with the in-depth implementation and implementation of the service-oriented strategy of manufacturing enterprises, the service innovation performance of enterprises will be significantly improved, and the implementation of the customer-centered service-oriented strategy will have a faster and more significant effect on the improvement of service innovation performance.

Products as the center of the service strategy have significant positive effects on service innovation performance, the study conclusion shows that the manufacturing enterprise attaches great importance to the product related service business, around the core product development installation, maintenance, spare parts and other products related services, help enterprise new service concept, to help manufacturers improve existing simple service service process, and improve service quality, enhance customer satisfaction, and ultimately achieve the goal of improve enterprise performance. This conclusion is also consistent with the research conclusions of Kindstrom D(2014) and Wirtz J et al. (2016).Kindstrom D(2014) pointed out in his study that the service provided by manufacturing enterprises around products will enhance the strength of service innovation of enterprises. Wirtz J et al. (2016) also believe that the application of high-quality service operation by manufacturing enterprises will improve their service innovation performance.

Research objective 2 (R.O.2) Impact of organizational implantation on service innovation performance

Similarly, SPSS22.0 was used to analyze the relationship between organizational implantation and service innovation performance from the two dimensions of employee implantation and smart device implantation, including testing hypothesis H3 and H4. H3 assumes that employee implantation has a positive impact on service innovation performance, and H4 assumes that smart device implantation has a positive impact on service innovation performance. For this purpose, model 4 and model 5 are built.Due to model 1 and model 2, 3 are explained variables with service innovation performance, to ensure that explain the validity of the model, this study on the relationship between the implant and service innovation performance test is in model 1

and model 2 and model 3 level on the basis of regression analysis, the model 4 and 5 is on the basis of model 1, 2, 3, joined the new explanatory variables and establishing hierarchical regression analysis results are shown in table 4 - (model 4).

Model on the basis of model 3 4 after joining employees into variables, control variables are to be explained variables have no obvious effect on service innovation performance, product as the center of the strategy of service and service innovation performance has significant positive correlation (beta = 0.250, $p < 0.001$), the customer is the center of the service strategy have significant positive effects on service innovation performance (beta = 0.368, $p < 0.001$), and the employee of implanted on service innovation performance significantly (beta = 0.311, $p < 0.01$).Compared with Model 3, the R2 of Model 4 increases to 0.614, and the F-value test passes, indicating that there is a significant relationship between the explained variable and the explanatory variable, and hypothesis H3 is supported.

Model on the basis of model 4 5 smart devices implanted to explain new variables, control variables are still to be explained variables have no obvious effect on service innovation performance, product strategy of service as the center of service innovation performance still significant positive correlation (beta = 0.121, $p < 0.001$), the customer is the center of the service strategy have significant positive effects on service innovation performance (beta = 0.335, $p < 0.001$), the staff and service innovation performance implanted significant positive correlation (beta = 0.263, $p < 0.01$),However, smart device implantation had a significant positive effect on service innovation performance ($\beta=0.169$, $P <0.01$).Compared with Model 4, the R2 of Model 5 increased significantly, and the F value was significant, indicating that there was a significant relationship between the explained variable and the explanatory variable. Hypothesis H4 was verified.

The empirical results show that employee implantation and smart device implantation have a significant positive impact on the service innovation performance of manufacturing firms. Compared with smart device implantation, employee implantation has a more significant impact on service innovation performance.

Employees implantation has a significant positive effect on manufacturing enterprise service innovation performance, the study conclusion shows that in manufacturing enterprises into the customer business site, real-time is responsible for product maintenance repair work, to ensure the normal operation of customer purchases the product, manufacturing enterprises into the customer service staff with the host that the customer enterprise field staff because the job needs a high frequency of face-to-face communication, intensive daily communication, zero distance between interpersonal interaction helps both employees heterogeneous knowledge exchange, and frequent communication is likely to make personal friendship between different group of employees, To establish the relationship between enterprise capital, deep lock in customers and then trigger a deeper information flows, and whether it is knowledge or information of high frequency most interactive help manufacturing enterprises more clear understanding of the

current real demand and customer more accurately predict the future potential demand of customers, thus to put forward the new service concept, ahead of rivals to launch a new service products, preempt service, produce more of the service innovation and improve customer loyalty and improve enterprise performance. Among them, the conclusion that the establishment of relationship capital and the acquisition of more tacit knowledge with frequent close contact with customers leads to service innovation is consistent with the previous opinions of Adams et al. (1998), Subramani et al. (2004), Ivanka et al. (2013).Which through the frontline service employees will be connecting with customers as a service provider's manufacturing companies across organizational boundaries of the interaction of a positive impact on service innovation performance conclusions and Parris D L (2016) pointed out that both service innovation need to attach importance to the customer interface and organizational relationship is consistent, also with Ordanini and Parasuraman (2011), Jenny Karlsson (2015) scholars such as on a line of employees in the enterprise service innovation performance of ascension has important contribution to the research conclusion,At the same time, it confirms the knowledge sharing of service supply chain pointed out by Jian Zhaoquan (2013) et al., which should break through organizational boundaries and realize the knowledge sharing among employees within the enterprise as well as the knowledge sharing between service providers and customers.

Intelligent device implantation has a significant positive effect on service innovation performance, the study conclusion shows that the manufacturing enterprise application of modern advanced technology such as Internet and digital means, through the sensor and other intelligent device component inserted in the customer purchase products, real time monitoring and feedback at the scene of the customer product performance, after a run of product data collection and analysis of the product to assess health status, fault diagnosis and timely for products and instant to predict the possible problems of product, to reduce product failure rate, guarantee the customer's production run smoothly, in addition, the application of the accumulated product run large data, Find the frequent failure of data points, to analyze its corresponding to the existing product development design flaws and customer bad practice or use habits, etc., and improvements to existing products and services process, to produce more new products and services, improve service quality and service efficiency, at the same time, the application of digital technology analysis product data and the actual circumstances of the deep understanding of customers use the product, can immediate correction products shortage at the same time maintain real-time communication with customers, improve customer relationship strength maintain customer loyalty. In other words, multi-dimensional improvement of enterprise service innovation performance. Such findings support the Chuang (2016) put forward such as network technology is the key to support the service innovation and effective factors, and further confirmed the Parry et al. (2016) of the digital technology can improve understanding of customers using the product manufacturing enterprises, as well as Coreynen (2017) points out manufacturing companies are driven by creating digital products to break the current relationship between practice and gradually change with the customer.

CONCLUSION

This paper aims to reveal the effects of service-oriented strategy and organizational implantation on service innovation performance of manufacturing firms. Firstly, on the basis of in-depth analysis of service business types and expansion paths of manufacturing enterprises, the connotation and dimension of service-oriented strategy are defined and summarized, and the characteristics of service-oriented strategy are analyzed. At the same time, based on relevant theories and previous studies, the grounded theory is applied to identify the composition dimension of tissue implantation in manufacturing enterprises, and its connotation and characteristics are analyzed. Secondly, exploratory case study method is used to explore the relationship among service-oriented strategy, organizational implantation behavior and service innovation performance of manufacturing enterprises, and the initial proposition of the relationship among them is proposed. Then, on the basis of theoretical analysis and literature review, the research hypothesis of the impact of servitization strategy and organizational implantation on service innovation performance is put forward and the corresponding theoretical model is constructed. Finally, the theoretical model and research hypothesis are verified by the empirical research design and the relevant data of China's manufacturing enterprises' service transformation practice. The main research conclusions are as follows:

(1) Servicalization strategy is a strategic mode in which manufacturing enterprises improve product value by increasing service supply, meet customers' heterogeneous demands, and change their role from product supplier to product service provider.Based on the analysis of the research results of previous scholars, the servitization strategy is divided into product-centric and customer-centric strategies according to whether the services provided by manufacturing enterprises revolve around core products or customer operation processes. Products as the center of service strategy refers to manufacturing enterprise's strategic mode on the basis of providing tangible products add a certain content of service, service and products with high correlation, including product installation, maintenance, test and spare parts supply and management, service supplement products to enhance product features and differentiation, play a lower customers to use the product cost, increase the role of the core value of tangible products; Customer as the center of the service strategy refers to manufacturing enterprise development strategy based on product service shift to service based on customer requirements, manufacturing enterprises based on tangible products, the original integration in the product into its elements such as skills, knowledge, outside into such as information consultation, research and development, technical support and service elements by selling "service solution" or "composite service" to meet customer demand, the service is no longer binding with its own products, customers don't have to buy tangible products can experience.

(2) Organizational implantation refers to the behavior pattern in which the manufacturing enterprise, as a service provider, implants employees and other elements representing the organization into the customer's business operation site to provide immediate services and

maintain real-time interaction with customers.Based on the grounded theory and the in-depth interview method, this paper concludes that employee implantation and intelligent device implantation are the two constituent dimensions of organizational implantation in manufacturing enterprises. Among them, employee implantation is the behavior that manufacturing enterprises send employee representatives to customers to provide on-site immediate services. Intelligent device implantation is the behavior of manufacturing enterprises to provide remote and instant services for customers by embedding intelligent devices into the products purchased by customers and then entering the customer site indirectly.In the behavior mode of employee implantation, on site employees of the manufacturing enterprise and the employees of the customer enterprise work in the customer operation site, and realize the deep interpersonal interaction, knowledge sharing and information exchange in the joint cooperation and daily communication, so that the employee implantation becomes an effective way for the manufacturing enterprise to deeply understand the customer. In the behavior mode of intelligent device implantation, manufacturing enterprises rely on the Internet to apply digital technology and intelligent components embedded in on-site products of customers' operation, such as sensors, to collect product usage data. In the process of analyzing and mining data, they can have a deeper understanding of the product itself and the customers who use the product.

(3) In the early stage of service transformation, manufacturing enterprises usually implement the product-centered service-oriented strategy, and begin to implement the customer-centered service-oriented strategy after the service business expansion enters the advanced stage.From belonged to three different subdivision industry manufacturing companies in its strategic corresponding organization implanted behavior analysis of service found that manufacturing enterprises in the implementation of the product strategy of service as the center, the application of intelligent devices implanted tissue behavior of the real-time use of the product, and then through the optimization of product design and improve service innovation performance; In the implementation of the customer-centered service-oriented strategy, the organizational behavior model of employee implantation is often used to maintain immediate contact with customers, explore the potential needs of customers, stimulate more service innovation concepts, and thus improve the performance of service innovation. When the manufacturing enterprises implement the service-oriented strategy, either focusing on smart device implantation or personnel implantation, or using both implantation methods, will enhance the strength of the relationship with customers, thus generating more service innovation and improving enterprise performance.

(4) Both the product-centered service-oriented strategy and the customer-centered service-oriented strategy have a significant positive impact on the service innovation performance of manufacturing enterprises.Manufacturing enterprise attaches great importance to the product related services business, around the core product development installation, maintenance, spare parts and other products related services, help enterprise new service concept, will help improve the existing manufacturing enterprises simple service service process, and improve service quality, enhance customer satisfaction, to improve the effect of the enterprise performance;

Manufacturing enterprises focus on the customer operation process, around the customer operation process to provide customers with personalized solutions, integrated system solutions, integration of product service packs and other complex services, the formation of new service concept, also help manufacturing enterprises will increase the number of new services and products service package, targeted to improve the operational process of improving customer operation performance to enhance customer satisfaction and customer loyalty, and increase enterprise sales and market share.

(5) Both employee implantation and intelligent device implantation, two independent and different organizational implantation behaviors, have a significant positive impact on service innovation performance of manufacturing enterprises.Manufacturing enterprises into enterprise customer service staff and customers on-site staff because the job needs a high frequency of face-to-face communication, intensive daily communication, zero distance of interpersonal interaction, helps both heterogeneous knowledge exchange between employees, and frequent communication is likely to make personal friendship between different group of employees, to establish the relationship between enterprise capital, can help manufacturers deep lock in customers and then trigger a deeper information flow, all of these interactions contribute to manufacturing enterprises more clear understanding of the needs of customers, thus to put forward the new service concept, ahead of rivals to launch a new service products,To seize the first opportunity of service and produce more service innovation performance;Manufacturing enterprises into the customer buy the products of intelligent equipment components, the scene of the real-time monitoring and feedback customer product operation condition, through data analysis to product failure to respond immediately, and application of the accumulated product run large data, find the frequent failure of data points, the product research and development design flaws and customer bad practice or use habits, etc., and make improvements to existing products and services process, to produce more new products and services, improve service quality and service efficiency, multidimensional improve enterprise service innovation performance.

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