



The Research on the Interaction Development between the Producer Services and Manufacturing Industry

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Abstract

Under the modern of division of labor, the relations between the service and manufacturing industry have become more and more close and interactive. This paper analyzes the relationship and the mechanism of the service and manufacturing industry and put forward the four modes. And from the viewpoint of increasing industry relevance, service outsourcing, enhancing the core innovations ability as well as the achievement of the industrial pattern and industrial cooperation, this paper indicates strategic road mapping and suggestions of China's interactive development in service and manufacturing industry

Keywords: Producer services, Manufacturing industry, Interactive model, Service outsourcing

With the development of the tech and knowledge economy, it is hard to distinguish the boundary between the service and manufacturing. It has the trend of mutual promotion and mutual fusion. The service can offer the tech for the development of the manufacturing and make further support for the strategic adjustment of the manufacturing. And also, service may promote the process of industrialization and economy growth through the integration of the modern industry.

1 .the analysis on the relationship between the producer service and manufacturing industry

1.1 The definition of the producer service

In 1966, American economist H.Greenfield propose the definition of it when study on the classification of the service industry. And producer services mean that the producer offer the intermediate input service for the outside enterprises and the demander and the other producing activity which is used to business operation and further production. The producer utilize the acknowledgement, human resource as the main input and produce service product which have many acknowledge capital and human capital.

Insert Table 1 Here

1.2The role of the producer service

(1)The integration of industrial chain

The enterprise of the producer service offer the outsourcing and it has composed of the node of the industrial chain's joint. And it is also the node of acknowledge, so the producer service has the typical function of the industrial chain.

(2) The integration of innovation

The enterprise of the producer service is included in the special division network, and it has played a joint role for the industrial chain. The producer service may lead to the development of the relative producer service. All of these may build up a complex network which may contribute to the innovation of them.

Insert Figure1 Here

(3) The allocation effect-Pareto improvement

The producer may improve the operation efficiency of the industrial chain and may decrease the transaction cost as well as the free allocation in the marketplace. Because of the flow of the resource the resource may has the trend to point of

relative advantage and at last lead to the high allocation efficiency.

1.3 The orientation of the relation between Producer Services and manufacturing

For the relation between Producer Services and manufacturing, there are four main views in theory research: "On the demand to comply with", "supply-led" and "interactive" and "integration theory."

(1) On the demand to comply with

"On the demand to comply with" can be defined as manufacturing is the premise and foundation of service industry (include Producer Services), the development of Producer Services under the demand to comply with, that its economic growth is influenced by the expansion of manufacturing, which leads to the demand of services. Therefore, the development of service industry is subject to the development of manufacturing.

(2) Supply-led

"Supply-led" believe that service industry, in particular Producer Services, is the premise and foundation of improvement of manufacturing productivity, without well-developed Producer Services, it is impossible to shape competitive manufacturing sectors.

(3) Interactive

"Interactive" believe that Producer Services sectors and manufacturing sectors are interactional and interdependent. The inherent mechanism of "interactive" is that with the expansion of manufacturing, greater demand on Services just as Trade, finance, transportation, and social services. This will improve the productivity of the manufacturing sector. On the contrary, the growths of Producer Services sectors also depend on increase of intermediate input of manufacturing sectors. Moreover, with the improvement of economic development, this degree of dependence gets more and more.

(4) "Integration theory"

"Integration theory" is the recent view. It believes that with the wide application of information and communication technology, the boundary between Producer Services and manufacturing becomes increasingly blurred, it emerged the integration trends.

Four of the above-mentioned point of view "On the demand to comply with" and "supply-led" are too extreme, they lack of comprehensive and in-depth analysis. "interactive" is more practical and realistic, and "integration theory" reflect the evolution of future industry trends. Therefore, it should adopt interactive strategy and focus on future-oriented integration development strategy.

2. The significance of Interactive development between product service and the manufacturing

Service industry especially producer services have become the fastest-growing sector in the economic structure of developed countries in the West ., the added value of producer services, such as finance, insurance, real estate and business services, accounted for more than 1 / 3 in the gross domestic product in the countries of OECD. The trends of mutual integration development between manufacturing and service industries had emerged.

2.1 The significance of Interactive development between product service and the manufacturing

(1) Producer Services is the essential elements of product differentiation and product proliferation

In the value chain curve of the manufacturing, manufacturing process has always been in the low-end segments. While Product development, after-sales services were in a high-end in the value chain curve. The difference among enterprise value chain determined the product differentiation. And it is the key of competitive advantage.

Insert Figure 2 Here

The added of intermediate input services made the relationship between the service and the manufacturing increasing closely. The same as industrial products, service may be also classified as intermediate products and final products. The modern industries product has integrated more service as the elements of intermediate inputs. The expansion of intermediate demand is the main driving force for the service sector growth.

(2) The developing of producer services reduce transaction costs in the manufacturing sector

According to the modern theory of institutional economics, the producing cost of the manufacturing sector includes material conversion costs (i.e. production costs) and transaction costs. Producer services are the intermediate business services provided for the enterprise by the Enterprise. Its most important function is to reduce transaction costs, in particular, is to reduce information costs.

On the one hand, having an increasing number of specialized manufacturers and all kinds of experts, is an important feature of modern Productive services sector; On the other hand, under conditions of a market economy, producer services firms is a major vector-borne. Through these mediators, human capital and knowledge capital of community-owned can be released, and continue to supply through the price mechanism of the kind of commodity

production in the economy.

Therefore, the production of the service sector is the Flywheel which brings the human capital and knowledge capital of growing professionalization into commodity production sector, which constitutes these channels of the capital entering the production process.

Finer division of labor in society, the higher transaction costs, the greater the need for intermediary organizations to provide production services.

At present, the total added value of the developed countries in Production services has account for a half of all value-added services.

(3) The producer service offers the intelligence service.

In modern society the human resource and the intelligence capital has played a more and more important role. The intelligence service such as the feasibility of the investment project and the product design and the information tech service and so on have promoted the specialization of the enterprises and enhance the efficiency of the enterprises.

(4) The outside activity leads to the new produce service's development

The outside transaction activity of the enterprises may contribute to the new kind of service. Because the outside transaction may bring the new intermediate service input and the new service are always the new producer service. So the producer service has developed a lot in the recent few years, which has made the producer service, become the main industry of the rapid growth service.

Most of the industries are emerging service industries with the business activities developed. Business activities increase the use of intermediate inputs external service which comes from the service industries. As a result of business activities external linked in the past ten years, emerging producer services have been in rapid development in these years. The service sector has become a "leading" industry in the service industry's growth. So the external of business activities is a very important factor for the growth of producer services.

2.2 Models of Interactive development of Producer service Industry and manufacturing Industry

(1) Manufacturing-centered interaction development model

This interactive development model takes one manufacturing enterprise as the core and a cluster of small high-tech services enterprises surrounding this core business. This core enterprise outsources its non-essential resources (mainly technical and informational services) to the surrounding technical service business; this central enterprise forms a symbiotic interaction model with the small companies around the center.

(2) Pyramid interactive development model

This type of model bases the existence of the two industries on cooperation and long-term relationship. Due to nature of the long-term cooperation between upstream businesses and their relatively stable and limited number of clients, it is easy to create close and interdependent cooperation relations through communication and coordination with each other. Or else, the whole model will not work out as Granovetter (1973) described the dangers of weak links. In this model, members on the network believe that the maximum common interests only come from long-term cooperation and interactions with each other.

(3) Parallel interactive development model

This model is composed of two or more core enterprises which possess different technical resources, relying on mutual cooperation to complete the production activities. The relationship between enterprises is based on equality, mutual benefit and sharing of complementary advantages. The "parallel model" (Figure 5) got its name because of the equal footing between or among the enterprises in the model. The feature is that the efficiency of the whole model is relying on close co-operation and coordination among all enterprises in this model. Compared with other types, this model is relatively more secure and stable. However, as the model structure is loose without a leader or center, contacts between members can be limited. Consequently, this model is not conducive to the overall formation of a strong industrial chain.

(4) Nested-based interactive development model

This model is constituted of a lean central management institution and externally connected entities which are executing outsourced contracts. And these external agencies are essentially the organizations which are responsible for carrying out key business activities such as R & D, manufacturing, sales, different services. These external organizations are integrated and "independent" parts of the symbiotic interaction organizations. With a core of a group of strategic alliance partners which has a sizable and inter-related outsourcing need, this model has a large number of small and medium enterprises surrounding its center core.

3. Strategies and recommendations on interactive development between Producer service and manufacturing industries

3.1 Strengthening of Industrial Coordination and Improvement of the interaction between producer services and manufacturing

The implementation of "Separation of the Primary and the Secondary" industries and the advance of market-oriented, socialization of Built-in services in manufacturing enterprises promotes a healthy manufacturing industry chain derivative, which constantly attracts or creates new producer services, promotes the formation of different functional groups, and facilitate the establishment of the "group to group" best interactive mode. With the spread of the foreign manufacturing sector, the appropriate approach is to attract service industries into servicing those foreign investments. The consequent impact could change current primitive-stage part of the manufacturing into part of the industrial chain which has effectively integrated manufacturing and service from a global view. There are some other issues to consider now. With all these development, there is no the need to improve the condition of labor and employment, integrate businesses' internal resources, and strengthen the businesses' own initiatives to make informed decisions or strategies. Gradually, these two industries will find guidance on their own to promote new methods of management through innovation and business process reengineering. Then there will be a multi-staged shift to a focus on the development of technology research and development, market expansion and brand promotion. The result will be a spin-off of some non-core aspects of the producer services to generally social professional services. This will consequently drive further integration process; enhance the servicing capacity of those enterprises with the core competitive advantages to develop industry specialization with a new division of labor.

3.2 Development of outsourcing model of producer services and extension of the whole manufacturing industry chain

In recent years, service outsourcing and the transfer has become a bright or controversial spot to start a new round of global industrial layout adjustment, especially in multinational corporations. Accepting outsourced services can help businesses gain opportunities not only from these multi-national corporations taking this "refocusing" strategy, but also from providing other relevant business services to manufacturing multinational corporations by extending manufacturing industry chain. Therefore, the development of outsourcing service can make those investors confident in stable and on-target return; secondly, it can create employment opportunities; the final and most important is to the availability of access to the headquarters of the multinational companies' outsourcing service strategy, and further adjusts the service sector to extend the operational chain of transnational corporations.

3.3 Acceleration of Strengthening Core Competencies in the Manufacturing Sector and Promotion Developing Service Industry

Producer service emerged as a result of division of labor with the development of manufacturing industry. This particular service industry based its existence on meeting the needs from the manufacturing sector. The social division of labor, service outsourcing, and further industrial subdivision in manufacturing sector make this producer service both a unique and essential entity of the whole economy. The upgrading of manufacturing sector often requires expertise and knowledge from a variety source of inputs. Thus the demand promotes the development of producer services. As competition intensifies, manufacturers are increasingly outsourcing non-core businesses and focusing on strengthening its core competitive advantages, requiring streamlining of the internal structure of its own and outside services. However, the driving force of developing the manufacturing industry depends on not only the industrial own knowledge needs, but also the capability of the producer service sector to provide more and more professional advice and expertise with its in-depth understanding and knowledge of its manufacturing customers. Manufacturing industry's self development to compete internationally to best meet customer drives the development of producer services which have become more productive in its output and become an increasingly important economic sector, the development of producer service, in turn, enhances the advance of the manufacturing sector. It is safe to say that interactions between and developments of the two industries have helped each other to grow their own competitiveness.

3.4 Resource Integration and Development of Service Industry Zone

With the goal of meeting the demands of manufacturing sectors, the proposal is to specifically set up services business area in the city to expand the economic impact in neighboring rural areas; In addition, there is also a potential to reduce further the cost of operating these existing manufacturing or industrial clusters by building up public or commercial infrastructure. In turn, these measures will minimize transaction costs and optimize the investment environment; In the vicinity of high-tech or knowledge-intensive manufacturing sector, it is of special significance to set up a carefully designed platform to provide support for the industry's particular needs for such areas as R & D, legal, engineering, finance, information, logistics support system. Municipal policies can also be created and implemented to enhance this knowledge industry's competitiveness.

The developments of manufacturing and service sectors highly correlated with the coordination and interactions between the two industries. Both theory and available evidence point to the fact that upgrading the manufacturing industrial structure updating depends not only on the effort of the manufacturing sector itself but also depends on the

development of the other industries. Service industry plays a key role on help manufacturing industry overcome the bottleneck of development. The cooperation and interaction between the two industries will strengthen the linkage and create synergy for the upgrading of manufacturing industry to compete internationally.

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Table 1. The Classification of the Producer Service in Different Country

country	the classification of the producer service
USA	Finance insurance, real estate, business service, legal services,
Germany	Transport, storage, sales, management and R&D
Britain	Distribution, waste disposal ,Transport Finance insurance, advertisement, R&D, trade
Japanese	Management , medical treatment, entertainment, housekeeping
Canada	Finance insurance, real estate, business service, legal services, training of manpower
China	Finance insurance, real estate, tenancy, information transmission, computer service and soft , tech service, Transport, storage and logistics
OECD	Accounting, management consult, real estate, equipment management, R&D, environment service, computer service and soft, legal services, accounting

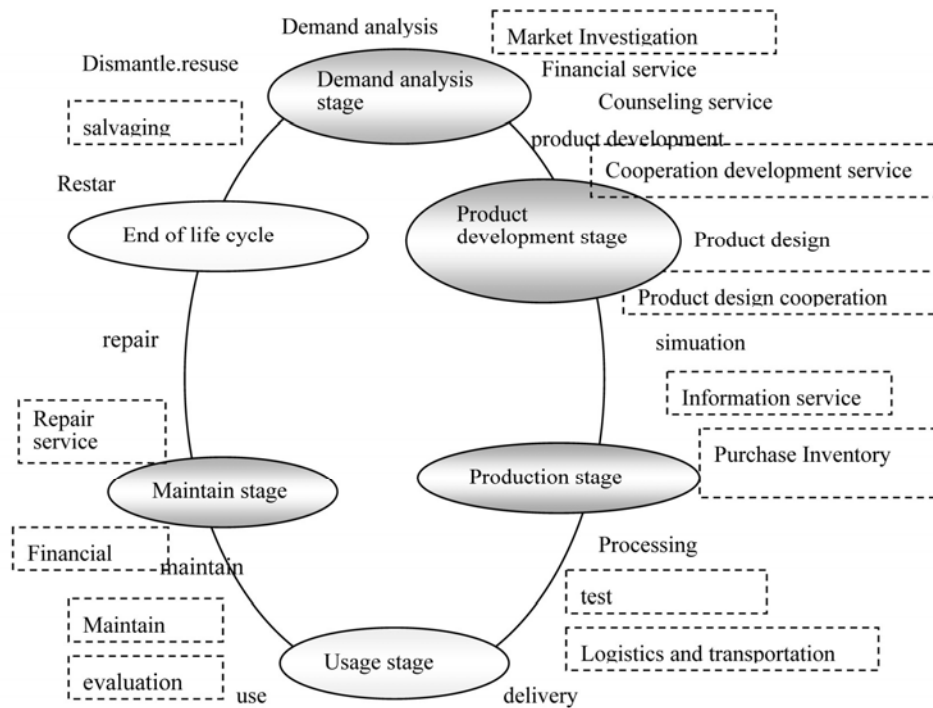


Figure 1. The Value Chain and Activity of Manufacturing Industry

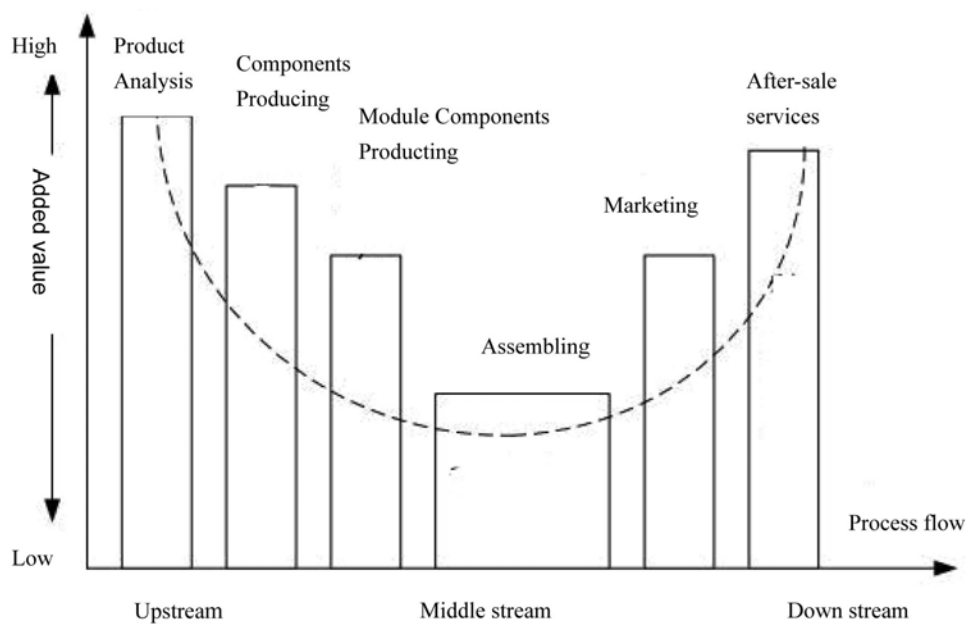


Figure 2. The Curve of Value Chain in Manufacturing