



Platform Enterprise Business Model: Their Essence and Particularity

Syed Ahtsham Ali¹, Shengjin Wang², Xu Ming^{*}

¹Donghua University, Shanghai 200051, China.

²Henan Institute of Engineering, Zhengzhou 451191, China.

Abstract

Purpose: The purpose of this is present research to explore the essence and particularity of platform enterprise business model.

Design/Methodology/Approach: Grounded theory are used to abstract the elements of platform by two step coding, and then social network relation analysis are used for the core modules and their relation of platform enterprise business model.

Findings: The present study abstracted four core modules and constructed the platform model structure, and analyzed its essence and particularity.

Originality/Value: In most research of business model, the value creation and capture are seen as the core of value logic, while this study found that the value delivery and creation are more important for a platform enterprise business model.

Keywords: Platform Enterprise; Business Model; Essence; Particularity.

Paper Type: Research paper

Introduction

Platform enterprises and the business models are increasingly crucial in social economics. The latest statistic by the international authority shows that 60 enterprises of the world's top 100 enterprises in 2012 feature with platform, such as Apple, Cisco, Google, Time Warner, and UPS Express; and five enterprises among the top 10 enterprises ranks in the Hurun Rich List, which including Tencent, Baidu, Alibaba, Wanda, and Hikvision. In addition, platform enterprises like 360buy, Suning Commerce Group, Dangdang, Ctrip, Elong, Tuniu, Sina, Yihaodian, Baihe, Century Jiayuan, and Zhilian Zhaopin are well-known to all of us. With a rocket development speed, platform enterprises have far surpassed traditional enterprises: Google with nearly 157% compound annual growth rate; Facebook, Twitter and GroupOn with an annual growth rate of over 150%. While traditional enterprises including Coca-Cola, General Electric Company, and Procter & Gamble with revenue growth rate of only 12.75%, 1.68% and 9.94% respectively from year 2000 to 2010; and Ford even with a negative annual growth rate of -4.21%. This is enough to show that platform model has a potential to subvert previous business model to overturn the industrial structure and change the social economic behaviors and rules with its revolutionary power (Weiru Chen, 2013). Platform model represents an increasingly important business model and thus hold people's close attention (Osterwalder A, Pigneur Y, 2010; Na Wang, et al., 2010).

Modeling is a main academic expression approach of the nature and specificity research on platform enterprise business model at present. Hamel et al (2000) described the business model as a combination of four factors which are customer interface, core strategy, strategic resources and value of the network; Zott & Amit (2002) proposed a dualism business model including elements designing and themes designing; Osterwalder (2004) explained the business model from nine aspects: customer segmentation, value proposition, marketing channel, customer relations, sources of income, core resources, business-critical, important cooperation, cost structure; Johnson (2008) viewed the business model as four factors involving the customer value proposition, core resources, key processes and profit model. All these presented researches attach great importance to the elements or factors abstraction of business mode. However, they neglected to analyze the intrinsic relationship between various factors or elements of business model. Agreeing with the systematic and holistic of business model, then the analysis of relationship between various elements or factors is essential and indispensable.

Research Design

Business model is an organic combination of elements and their relationship, so at least following two points must be paid attention in the essential cognition of the platform model: firstly, to be clear about what elements make-up of the platform model, which needs the scientific extraction of the core elements of the platform model; secondly, to find out how the elements make up into an integrality. By solving only the two basic problems, we can get an overall understanding of the framework of the platform model and can realize the essence and particularity of the platform model. Thus, the following methods and logic will be followed in this research.

Core Elements Abstraction by Grounded Theory Two Stages Coding

Coding technology of grounded theory is a very useful tool for the platform model's elements abstraction and is worth well leaning. But attention need to be paid to this method during practical application, though grounded theory analysis rapidly emphasizes that the theory constructed should be saturated, and the saturation is not easy to be guaranteed. All grounded analysis researchers of business model claim that their theory has reached its saturation, but actually "the final research results of the same question are inconsistent and even differs from each other a lot". It shows that theory saturation is just a wish which cannot be realized easily, especially more disagreement in grounded analysis 'third stage-core coding. There is a great relationship between grounded analysis and the researchers' subjective factors such as the personal attributes and research conditions, therefore, different researchers with the same research topic and case finally may achieve different theories through grounded analysis. In order to reduce the adverse impact by the researcher's subjective factors to the saturation of the constructed theory, only opening coding and axial coding are taken in the process of grounded analysis. While relationship network analysis software is applied in abstraction of business model's core elements and the relationship, which may reduce the impact of human factors and make the constructed theory as saturate as possible.

Relationship Between Core Elements and Architecture System

Though scholars admit the systematization and integrality of the business model, they seldom involve in the relationship analysis that can best show the systematization and integrality (Hongjiang Lv et al., 2012). According to the understanding of the platform model's essence, though the abstraction of core elements cannot be missed, the relationship between elements is more important. Just as the research topic of "society", it is not enough for just focusing on its members, the relationship between members must also be explored and be more important, or the study subject of society cannot be grasped as a whole. However, many research of business model's essence stop only by listing and abstracting the elements and ignoring the relationship analysis between elements; or lacking of realistic basis for analyzing the elements relationship. The researchers act as the master many times for the relationship construction between elements by their own subjective understanding and imagination for the relationship construction between business model's elements rather not according to its fact. Then it leads to little science and persuasion of business model's architecture and modules.

Therefore, through the questionnaire design, this research has surveyed the elements from axial coding to construct a 2-mode affiliation relation matrix between elements and enterprises, and standardize this matrix. Then the relationship analysis software UCINET is used to analyze the relationship between all these elements and express it with a visualized graph. On the basis of this, architecture system of platform model are constructed and the essence and peculiarity of platform model are also analyzed.

Research Process

Two Stages' Coding Process of Elements

Resource of Triangle Data

To ensure the validity and credibility of the theory constructed by network analysis, multiple evidence sources are needed to form into an evidence chain. First-hand data: according to limited research conditions and resources, platform enterprises including Huanlian in Zhengzhou Erqi area, Henan Yingxiang, Shanghai RT-MART in Nicheng area and Ctrip are interviewed with the questions related to business model. The content design of the interview syllabus referred to the representative study results of scholars related to business model domain (Osterwalder A, Pigneur Y, 2005; Mark W. Johnson et al., 2008; Chesbrough H, 2010; Zott C, Amit R, Massa L, 2011; Sinfield J V, Calder E, McConnell B, et al., 2011). As to the second hand data, it is mainly from the enterprise's websites, publications, research documents, news and all kinds of materials issued in an annual report.

Data Coding

All the collected data is processed with two stages of open coding and axial coding according to the grounded analysis requirement. During the coding process, the value logic of business model should be taken as the coding principles. Opening coding mainly recognizes the types, characteristics and dimensions. In order to ensure the quality of opening coding, the text is coded passage by passage which can ensure the concept renewed step by step. The conceptual results of the first research case were used as the standard and then compared to the conceptual results of the second research case to form a new conceptual framework. In the same way, do the same thing until the changes are very small and 123 opening codes are formed (Table I). Then axial coding is further taken to these 123 opening cods by coding patterns of "reasons and conditions→ phenomenon→ situation→ interface conditions→ action or interaction strategy→ result " (Strauss A. J., Corbin, 1990). Finally 24 generics are achieved and grounded analysis is finished.

Table1: The Result of Axial Coding

The Generic	Member
Platform function	Identify customer needs, communication, mediation, information providers, trade assistance, value-added, customized service supply chain, distribution networks, resource matching, coordination mechanisms, improve efficiency, resource sharing, value chain integration, price discovery, information dissemination, process Integration
Platform resources	Target customers, human resources, intangible assets, industry position, scale, service capabilities, brand, organizational efficiency, core technology, IT platforms, information management systems
Transaction contents	Physical products, services
Transaction mode	Free, fee, the customer subsidies, bundling selling
Relation	Trading, information flow, value chain, value network, partnerships
Value delivery	Demand matching, information transfer, process reengineering, reduce risk
Value Allocation	The number of suppliers, customers scale distribution mechanism
Platform authority	Quality of service platform, the platform reputation, customer response, safety, stability
Entrepreneur	Entrepreneurship, reputation, industry experience, risk attitudes, forecasting, innovation, sense of crisis, decision-making style, mission
Transaction roles	Customers, suppliers, platform companies, manufacturers, advertisers, buyers, sellers
Value creation	Demand insight, new product development, service delivery, user experience

Information service	Computing power, content analysis, network interoperability, network coverage, intermediate service, trading platform, information collection, data analysis, risk control, coordination, customer mining
Transaction service	Information transparency, transaction security, ease of access, service differentiation, computing capacity, management, reliability, visibility, continuity, payment
Platform income	Commissions, advertising expenses, divided, value-added services, third-party access, trading volume, market size, number of users, frequency of transactions
Pricing strategy	Pricing, price elasticity, price adjustments, customer stickiness
Cost	Technical maintenance and management costs, fixed investment, equipment upgrades, advertising
Customer attribute	The number of customers, the demand preferences, consumption, income level, customer loyalty, purchase frequency, price sensitivity
Customer cost	The purchase price, the transaction time, effort, trade fraud, transaction risk, the search cost
Customer value proposition	Transaction security, trade facilitation, personalized service, inexpensive, low risk, service customization
Supplier attribute	Product quality, reputation, financial capability, business philosophy, product design, product development, transport materials procurement, product distribution
Supplier function	Products, services, quality assurance, service assurance
Supplier profit	Product price, sales volume, profitability, cost of sales, operating costs,
Competitor	Interbank platform alternatives, competing platforms
Cooperation Partner	Logistics and distribution companies, media companies, software developers, financial institutions

Core Elements Abstraction and Relationship Analysis

Through the grounded analysis of the two stages' coding, 24 constructions of business model are initially obtained. Next, taking the above 24 generics as basis, the internal relationship between these elements will be further discovered by taking use of relationship quantitative analytical tool UCINET, which can also prevent the core coding results of the last stage in grounded analysis influenced by researchers' human factors reappearing.

On the basis of this, a survey of 4 platform enterprises including Hualian in Zhengzhou Erqi area, Henan Yingxiang, Shanghai RT-MART in Nicheng area and Ctrip is done. Besides, two experts from the business model research domain are asked to fill in the questionnaire. And finally 6 original survey data is achieved in total.

On the basis of this, a 2-mode affiliation relation matrix that comprises 24 lines (factors F) and 6 rows (enterprise and specialist N) is constructed, and multiply matrix M by Transposed matrix and binarize this matrix. Finally an element relationship matrix M_{24*24} was achieved. This is a square matrix and its lattice values either "0" or "1". "0" means no relationship between two elements, "1" means relationship existence between two elements. Besides, the main diagonals of this matrix are all zero, namely, any element has no relationship with itself.

Next, we use UCINET to analyze the element in square matrix M_{24*24} quantitatively. There are many methods to express the relationship between elements in UCINET, absolute degree centrality is taken to measure the relationship between 24 elements according to research purposes and characteristics of matrix M_{24*24} . The result of square matrix processed by UCINET is shown in Figure I. In Figure I, the proportion of the dot (element) shows its importance degree in the whole network: the larger the dot is, the more important the element in the whole network and vice versa (Jun Liu, 2009).

Figure 1: Social Network Analysis Result of Platform Business Model's Core Elements

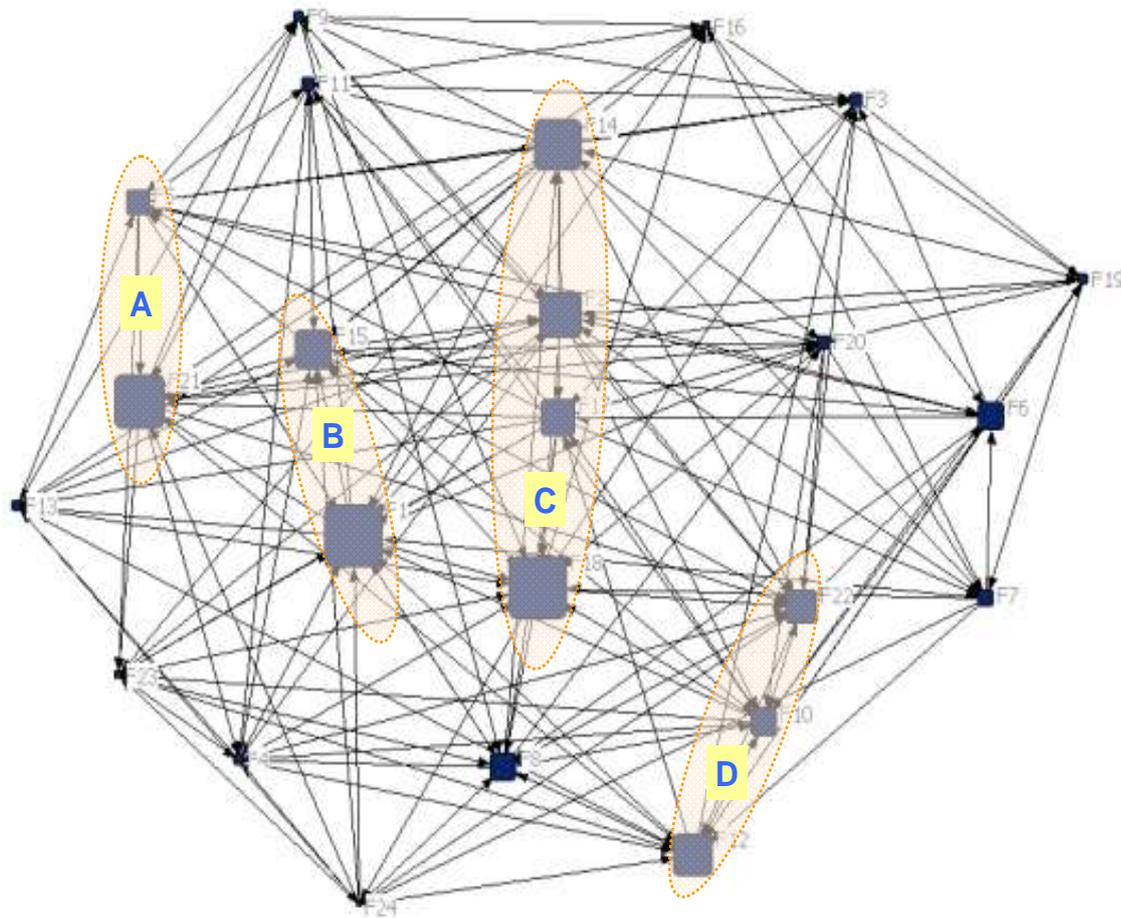
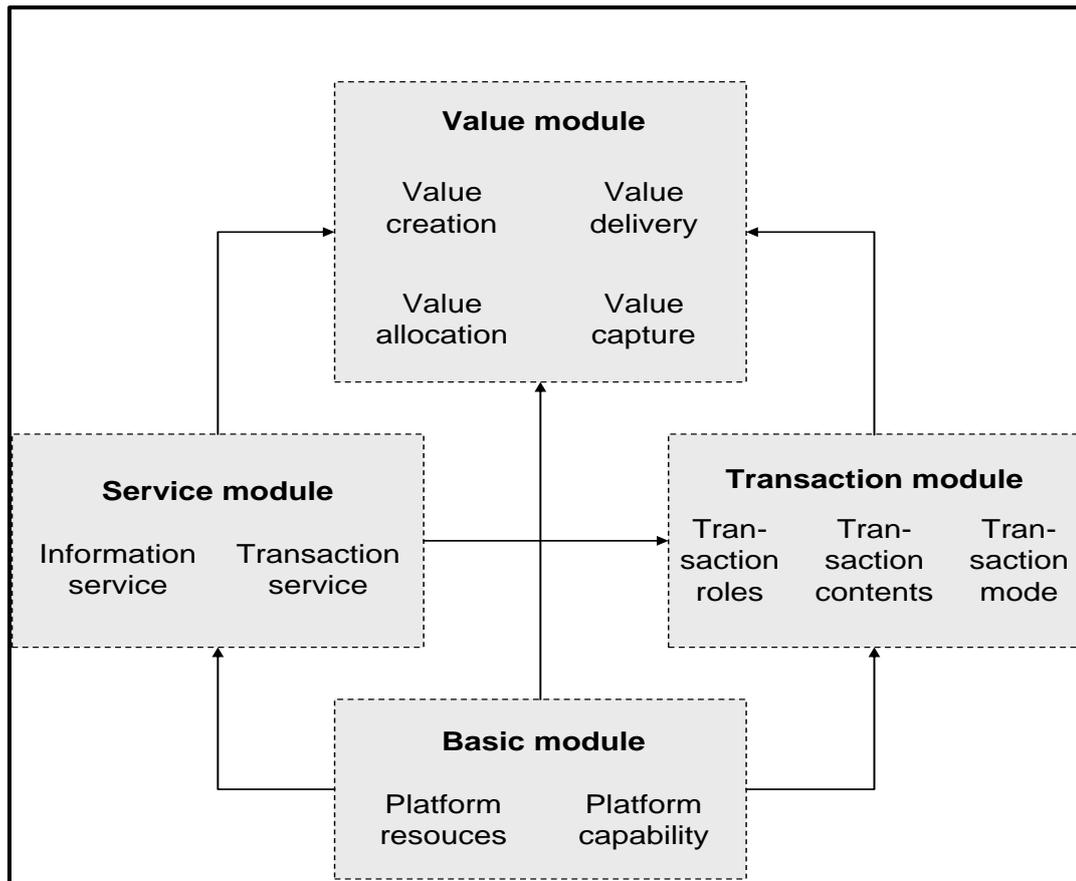


Figure 1 shows that these 11 elements F_1 , F_2 , F_5 , F_6 , F_8 , F_{10} , F_{14} , F_{15} , F_{21} and F_{22} play an important role in the overall relationship network. According to their nature, 11 elements (remove F_6 and F_8) can be classified into four major categories, which include basic module A composed by F_5 (platform resources), and F_{21} (platform function), service module B composed by F_1 (transaction service) and F_{15} (information service), value module C composed by F_2 (value allocation), F_{18} (value delivery), F_{17} (value realization), and F_{18} (value creation), and transaction module D composed by F_{10} (transaction contents), F_{22} (transaction mode) and F_{12} (transaction roles).

Architecture Design of Platform Model

According to the relationship between these 11 core elements and 4 major modules, the architecture and modeling of platform model can be described as in Figure II. The architecture includes four modules: basic module based on platform resources and ability; the module based on information service and transaction service; the transaction module based on transaction participants, the module based on value creation, delivery, allocation, and realization. Basic module's function is to provide the conditions for service and transaction and induce the functions of three other modules. Service module is to promote transaction and is very important to the value logic of platform model as it is the main body of value logic. The Synergistic interaction of the above four modules can realize the value logic of platform model.

Figure 2: Structural Express of Platform Business Model.



Conclusion and Discussion

The Essence of Platform Model

From the above empirical analysis, it is found that, as a business model, platform model has the following basic characteristics.

Systematization and Complexity of Platform Model

As a generalized construction, platform model is characterized by systematization and complexity. Systematization is reflected from that the platform completes the customers' value creation and the enterprises' value realization through the mutual collaboration of the basic module, the service module, the transaction module and the value module as an organic whole. Any one of these modules is an essential element of platform model value logic. The complexity of the platform model is reflected not only from the diversity of relevant constructions, but also from the diversity of subjects participating in the platform model, and the complexity of value logic, etc.. This systematization and complexity of the platform model require researchers to examine the entire orders from an overall perspective, focus on the constructing modules and elements, as well as their connections and dynamic balance, but not to isolate even split their intrinsic relationship.

The Value Logic of Platform Model

Business model reflects the value logic relationship between the customers and the enterprises: The process of enterprises' supply of products and services is also a procedure of value creation for customers. Therefore, the process that enterprises provide customers with new products or services becomes an important way of business model innovation, which also applies for the platform model. Platform enterprise offers not only a variety of intermediate services for the terminal customers, but also all kinds of services for the transaction between both sides of platform. These services become the source of customers' value, and the enterprises gain profits from the transaction of the two sides by discount, commissions, etc. Thus, the enterprises' value is realized. Therefore, from the viewpoint of value logic, the platform model is a value logic of three-in-one, that is, value creation, value delivery, value allocation, and value realization among the terminal customers, suppliers and platform enterprises.

The Elements' Relationship and Modules of Platform Model

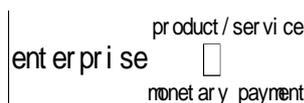
The research shows that platform model is a kind of logic construction constituted by a number of modules and elements internally. Each module consists of several elements with similar property, which completes some similar function together, for instance, transaction module includes the platform enterprises, the terminal customers and suppliers; the value module function in the terminal customers' value creation, the platform enterprises' value realization, the suppliers' value achievement, and the delivery and allocation of the value among all these three subjects. Only the effective combination of the elements in each module and the realization of the dynamic balance among modules can make the platform model tend to be stable; and any change of the elements relationship or modules must be matched with a new business model. Thus, business model innovation is made, which is directed by the modules, the elements, and their internal relationships.

The Particularity of Platform Model

Platform enterprises' booming means the existence of some particularity of the platform model. Then, where does the particularity reflect? Through the above empirical study, some particularities of the platform model have been found initially.

The Value Logic of Platform Model Being More Complex

Under the traditional business model, the basic units of value logic are customs and enterprises. Enterprise's providing of products and service is the only form of customers' value creation, monetary expenditure paid by customers for products/services becomes the main source of enterprises' value realization. Customers' value creation and enterprises' value realization occur synchronously. They together construct the two-in-one value logic

of traditional business model, and it can be expressed as,  , and it is clear that

the relationship is simple linear.

The value logic of platform is nonlinear and complicated. Even the simplest platform includes three roles at least: platform enterprises, terminal customs, and content suppliers, which collaborate with each other to form a three-in-one value circle; a more complicated platform includes more roles which form the so-called more-in-one platform ecosystem. For instance, Taobao shopping platform under Alibaba, Ali payment platform, etc. collaborate with each other to constitute Ali's business ecosystem. The three-in-one value logic or even the more-in-one value logic of the platform model based on subjects and their relationship is obviously more complicated and linear than the two-in-one value logic. As for platform enterprises, independent terminal customers or independent suppliers matter nothing, and only the strong combination of the two, namely, the customer combination of "terminal customers + suppliers" is the objective of the platform enterprises. Its function and value lies in how to maximize the cross-network effect of the mutually complementary combined customers.

The Importance of Value Delivery and Allocation Under the Platform Model

Under the traditional business model, the dualization of the composition subjects determines that enterprises pay more attention to the value creating activities such as what to produce for customers and how to produce. All actions between the enterprises and customers based on transaction are finished synchronously: the enterprises create values by providing customers with products. The customers become the value realization of the enterprises by monetary expenditure. Theoretically, there is no time and space separation between the customers' value creation and the enterprises' value realization. Meanwhile, the platform model only refers to the transaction between the two subjects, so the value delivery and allocation is not that important.

While under the platform model, the importance of value delivery and allocation is highlighted over the whole value logic, which can be testified in the points of empirical analysis results of relationship network between the platform model core elements. It is the necessary preconditions of value logic that suppliers produce the products and provide services, which does not mean it will surely become the customers' value propositions and represent the enterprises' value realization. In fact, sometimes the poor communication and inefficient transaction between the terminal customers and suppliers for some reasons impede the customer value and enterprise's profit. Therefore, a middle role with the function of value delivery and allocation is needed to make the customers' value propositions and the enterprises' value realization become realizable, for which the importance of platform model is heightened. The success of iPod from Apple company shows this: Apple is not the best with regard to its appearance and internal quality, but it successfully rebuilds the value logic between the MP3 users and digital music suppliers, becomes the strongest passage between the digital music suppliers and MP3

users, controls firmly the value delivery and allocation forms between the supplier and terminal customers, initiates a new myth in digital music industry. The success of Taobao is largely owed to the value relationship between the transaction parties, especially the value delivery, value allocation system remolding and reconstruction. The special status of value delivery and allocation under the platform model provides principles and directions for platform design and innovation.

Separation of All Links of the Platform Model's Value Logic

While business model study advocates for a logical relationship between value realization and value creation, it also implicates the validity of the high consistency between customers' value creation and enterprises' value realization (Qin Wang, 2011). The process that the enterprise produces products for customers is the process of value creation, while the customers' purchase becomes the source of enterprises' profit. The interaction relationship of the two sides based on "Delivery versus Payment" ensures the natural consistency between value creation and value realization. Therefore, it is not surprising that the scholars naturally limit their focus on these two levels: value creation and value realization in the study of the business model value logic.

However, the empirical analysis shows that the value logic under platform model includes four links: value creation, value realization, value delivery and value allocation and what matters much more is that the four links is separate to some extent. First, there is the separation of the value bearing subjects. Supplier is a value creation subject providing terminal customers with final products and services. At the same time, the process that enterprises provide services for the transaction between suppliers and customers is also the process of value creation. Therefore, value creation subjects include both suppliers and platform enterprises. Although supplier is also a value creation subject, they do not have the value delivery function, which is realized by platform enterprises.

Second, there is a separation between value creation and value realization under platform model. The customers' value creation does not necessarily lead to the enterprises' value realization. The realization of value creation and value realization relies on another two important logics: value delivery and value allocation. Under the platform model, the value delivery and value allocation functions are controlled by platform enterprises alone, which in fact becomes the arteries or passes of communications between customers and suppliers. They attract a number of customers to the platform by some distribution mechanism, and control the scales and numbers of transactions between customers and suppliers, from which they can make profit. The balance and development of platform model rely on the efficiency and fairness of the platform enterprises' mechanism of value delivery and value allocation to a great extent.

Therefore, the design and innovation of platform enterprise business model are directed by the essence of value logic, the complexity of value relationship, the importance of value delivery and allocation in the whole business model and the separation characteristics of all links of value logic.

References

- [1] Chengde Zheng, Ailin Xu, Jiaying Zhao. (2011), "Analysis of business model based on case studies", *Management Science*, Vol 24, pp.1-13.
- [2] Chesbrough, H. (2010), "Business model innovation: opportunities and barriers". *Long range planning*, 43(2), 354-363.
- [3] Hongjiang L, Ming Cheng, Jin Li. (2012), "Dimensions and complexity of the business model of the structure of Measurement", *China Industrial Economy*, Vol. 11, pp.110-1522.
- [4] Johnson, M. W., Christensen, C. M., & Kagermann, H. (2008). "Reinventing your business model". *Harvard business review*, 86(12), 57-68.
- [5] Jun Liu. (2009), *Overall lecture-UCINET network analysis software Practical Guide*, Harbin Publishing House, Harbin.
- [6] Limin Gong, Shisong Jinag, Jiang Wei. (2011), "Nature, methods of business model and future research directions", *Foreign Economics and Management*, Vol 33, pp.1-8.
- [7] Na Wang, Liwen Tan. (2010), "Pricing bilateral market research platform based on the theory of enterprise", *Capital University of Economics and Business*, Vol. 2, pp. 59-63.
- [8] Osterwalder, A., & Pigneur, Y. (2002), "Business models and their elements". In Position paper for the international workshop on business models, Lausanne, Switzerland.
- [9] Osterwalder, A., Pigneur, Y., & Tucci, C. L. (2005). Clarifying business models: Origins, present, and future of the concept. *Communications of the association for Information Systems*, Vol.1 6 No 1, 1.
- [10] Qin Wang. (2011), "Innovative value-based network reconfiguration Business Model", *China Industrial*

Economy, Vol. 1, pp.79-88.

- [11] Shichang Fu, Huifen Wang. (2011), "Theoretical system and research trends in the business model definitions and concepts of nature", China Science and Technology Forum, Vol. 2, pp.70-76.
- [12] Sinfield, J. V., Calder, E., McConnell, B., & Colson, S. (2011), "How to identify new business models". MitSloan Management Review, Vol.53, pp.84-92.
- [13] Strauss, A., & Corbin, J. M. (1990). Basics of qualitative research: Grounded theory procedures and techniques. Sage Publications, Inc.
- [14] Teece, D. J. (2010), "Business models, business strategy and innovation". Long range planning, 43(2), 172-194.
- [15] Yu Cheng, Jnaguo Su. (2013), "Theoretical model business model: elements and their relationships", China Industrial Economy, Vol. 1, pp.141-153.
- [16] Weiru Chen, Zhuoxuan Yu. (2013), Platform Strategy, Zhongxin Publishing House, Beijing.
- [17] Xuedong Wang, Dahai Dong. (2013), "Comments on the expression pattern of foreign business models to build and integration of expression patterns", Foreign Economics and Management, Vol.4, pp.49-61.
- [18] Zott, C., & Amit, R. (2010), "Business model design: an activity system perspective". Long range planning, 43(2), 216-226.
- [19] Zott, C., Amit, R., & Massa, L. (2011), "The business model: recent developments and future research". Journal of management, 37(4), 1019-1042.