

Research on the Concept and Characteristic of Corporate Value Co-creation Systems

Gongli Luo, Qiongqiong Wei

Academy of Economics and Management, Qingdao University of Science and Technology, Qingdao, China

Abstract—In order to research the connotation and construction need of corporate network value creation deeply, the concept of corporate value co-creation systems is defined, especially its characteristics are analyzed from the systems level, in this paper. Furthermore, the connotation and characteristics which means to guide the construction of corporate value co-creation systems in practice from the features of it are analyzed.

Index Terms—corporate value co-creation systems; systems engineering; community of shared future

I. PREFACE

Since entering the 21st century, many Chinese companies such as Tencent, Qihoo 360 and Haier Group have used internet information technology to transform the production, business, process, organization, etc., which establish new ways of value creation to revitalize and invigorate the company then finally become leader companies in the same industry. All these corporates' successful cases illustrate that the corporates' value creation model and competition mode have undergone fundamental changes in the era of network economy characterized by the development of the internet and information technology. Corporate value creation has shifted from the original value-based model to the network-based value co-creation model^[1-2]. The competition between corporates has shifted from "fight alone" of individual corporates to "group" competition of value networks^[3-4]. The rapid changes in the environment let the old market hypotheses substituted by the new ones, followed by the transformation of corporate value creation models. The corporate value creation model has become the most crucial factor for determining the success or failure of a corporate. The research on the value creation model has not only become the focus of the business community, but also become a hot topic in the theoretical field.

The research on corporate value creation mode has a very long history. Before the 1980s, the business environment of corporates was relatively stable. Porter divides a company's value creation into a dynamic process of value creation consisting of design, production, sales, distribution and a series of activities, namely the value chain^[5], which provides effective guidance for analyzing corporate value and formulating strategy at the time. With the development of network economy, the survival environment of corporates has undergone

tremendous changes: the globalization of business activities, the diversification of consumer demand, the diversification of production factors, the customization of production methods, etc., which make the basic logic of an corporate's value creation change radically. The value chain theory can no longer meet the needs of the times, then the value network theory has been recognized by people gradually. After the 1990s, many scholars studied the connotation and constituent elements of the value network. Brandenburger and Nalebuff emphasized that companies should build a value-added network with the concept of cooperation and mutual benefits as well as symbiosis, followed by adding a new factor named as complementor to the value network model in the book *Co-opetition*.^[6] An American scholar David Povel made a more in-depth interpretation of the value network in *Value Nets*, who pointed out that value net was a new value creation model linking customers' personalized requirements to a flexible and efficient supply system. Value net uses digital information technology to connect all parties seamlessly, providing solutions in an efficient and flexible way.^[7] In the value network model constructed by Kathandaraman and Wilson, they take superior customer value, core competence and interrelationship as three core elements of value network, emphasizing that value net aims to pull the network with customers as the core^[8].

Concerned to the research on the network value creation mode, scholars at home and abroad have made fruitful researches on the connotation, mechanism and corporate implementation. However, there are some insufficiencies existed as a whole such as: emphasizing corporate's role in value creation itself, neglecting the influence of external factors on value creation^[9], unitary perspective of research, lacking of comprehensive understanding of common creation of value, etc.^[10]. It is difficult for these companies to provide effective guidance for the practice of corporate value co-creation systems under the network economy. At present, some scholars have begun to explore the corporate value co-creation systems^[11] from the perspective of value network. However, these relevant studies are discussed from the perspective of value exchange and realization mostly, which lack of systematic thinking on the corporate value co-creation systems and the investigation on the whole process of corporate value activities, so it is unable to build an effective value creation systems to meet the requirements of corporate value creation systems competition. Based on this, this paper studies the

network value creation based on the perspective of systems engineering, which defines the network value creation as corporate value co-creation systems, and studies the connotation and characteristics of its new era from the systems engineering theory. It aims to deepen the research on the area of corporate value creation and improve the competitive abilities of VCS.

II. CONCEPTUAL CONNOTATION

The systems is called System of Systems (SoS), which is an ubiquitous phenomenon ^[12] of most large-scale integrations (including systems, organizations, natural environments, ecosystems, etc.) at the present. The systems is not a simple system integration which owns five characteristics ^[13], including independent operation of the systems, independent maintenance of the systems, regional distribution of the systems, emergent behaviors and evolving development of the systems. The systems is linked by mutual systems, whose overall capability is greater than the sum of its constituent systems capabilities ^[14]. It can better reflect the structure and characteristics of value creation systems when combining the systems engineering theory to it.

The corporate value co-creation systems (VCS) is a complicated common destiny-featured systems established to create value for enterprises and customers under the mechanism of common value concept and effective network governance, which aims to satisfy the individual needs of customers in the form of social value of the whole society. The implementation of VCS constitutes the technical guarantee for the operation of it by using information technology, the Internet and the computer software and hardware. Compared with the general corporate value network systems, the corporate value co-creation systems has the following characteristics ^[14]:

- 1) The autonomy and management independence of constituent systems behavior
- 2) The heterogeneity of constituent systems;
- 3) The overall evolution of the systems;
- 4) Geographical distribution of the systems;
- 5) The systems can emerge;
- 6) The systems has the ability to adapt to uncertainty.

The components of VCS include the corporate value network resources and capabilities, value creation strategy, laws and regulations, and human resources. Corporate value network resources and capabilities are various corporate organizations, value network resources, corporate value network facilities and information guarantee systems for carrying out value creation tasks. The strategic idea of value creation is the rational understanding of the law of corporate value creation in the information age. Regulatory systems are mechanisms for organizing, directing, coordinating, managing, maintaining, and developing the value creation capabilities of a corporate. Human resource is a group that knows well about the command, coordination, management and operation of value creation.

The VCS is changing the form of the corporate competition model and the generated model of value

creation ability. From the perspective of value network thinking and theory, the VCS is leading the value chain's creation thinking to shift from the traditional mode of "static, linear, plane and closed" to the one of "dynamic, non-linear, open and three-dimensional". The VCS congregates the main body of wider ranges to carry out the systems value creation in order to become the main corporate value creation style of future corporates. From the perspective of the consistent elements of value creation ability, the VCS integrates all co-creation subjects in the business environment to let it constitute a whole one, then changes the connection mode of value co-creation subjects. The whole systems changes from the internal hierarchical mode to the networked mode of value creation in the whole society, which greatly expands the connotation of enterprise creative ability elements and multiplies its value creation ability. From the perspective of corporate value creation ability, the value network systems of the whole society promotes the creation systems to change from the controlled idea to the innovative idea. The organizational structure changes from "tree-shaped" and extensive one into a "flat" and fine one. The creation method of enterprise value changes from the internal leadership of the enterprise to the coordinated leadership of the whole society. The value creation method of VCS shifts from the "hard tangible strength of enterprises" to the integration of tangible products and intangible services with the emphasis on "both tangible and intangible capabilities of enterprises". The creation process of VCS displays the time strategy to the maximum extent, in order to expand the creation abilities of VCS from the inside of enterprises to the whole society. In the view of the creation effect of VCS, it changes the capability structure of value creation, enterprises' operation process and value creation method, which causes the change of the value creation winning mechanism and brings great competitive advantages.

III. BASIC CHARACTERISTICS OF THE CORPORATE VALUE CO-CREATION SYSTEMS

A. Networked Components

The organization survives in an infinite "link" space. The inside of a corporate is an open, community-based organizational form, while the outside is customer-centered and interconnected value community. The basic characteristics are: multiple division of labor within the corporate, multi-directional interaction between customers and corporates. The role of each corporate in the value creation systems changes with the consumption demand and plays a diversified role in different value creation systems. The relationships between the roles in the systems are hyperlinks and loosely coupled relationships, rather than controls and commands. The new concept of the value creation systems is to establish a new value systems with at least two value chain interactions to form a network effect. The systems can simultaneously satisfy the needs and desires of the two-sided market (one side is the direct

benefit of the concept value, and the other side is all the economic members who can provide value for this concept).

The typical representation of VCS is the network of component elements in physical domain. The systems components of geographical distribution form an overall integration through network integration, which improves the interaction and integration between systems elements, and is the basis and guarantee for the emergence of systems capacity as well as the improvement for systems capability. Through the networking of systems elements, the systems has network enablement.

The network is embodied in three aspects: first, the components are networked and the systems elements are physically interconnected through the network. Second, Information resources are networked so that they are distributed among different elements of the network. Third, network of functions and business, strategic information network of VCS, charge coordination network and production operation network enhance the efficiency of VCS's creation activities through the network of business. They also improve the service efficiency of systems elements through the network of functions (realized by service-oriented technology).

The value creation systems is centered on a task, project or order, and quickly emerges and aggregates a group of companies or individuals who can work together. Each role is similar to the special forces with their own expertise. Participants quickly fade after completion of the task and the temporary flexible community dissolves automatically. Corporates can focus on consumers completely, combine effective value synergists quickly, let different elements work under a common goal, and accomplish this goal. Once the new demands of consumers emerge, it is also possible to build a new value network around this new demand and provide new value with new value synergists, which will build a flexible value network.

B. Value Flow Orderly and Direct Use of Value Information

The typical representation of VCS is "orderly flow of value flow led by information, and each systems uses value information directly" at the level of information domain. Value information users use the value flows directly and form value advantages.

Systems networking provides the foundation and physical basis for the formation of systems capabilities, and truly utilizes the effectiveness of the network systems, and also requires the comprehensive utilization of value information flows. Only when the value information flows reasonably in the network systems can the value information flow produce the value increment. The value information flow is formed by orderly flow and direct use to form value information. Value information empowerment means that the value of the systems elements is interoperable and interoperable, so that the value is increased, and the value creation activities of the corporate value creation systems can perform better so that the systems capability can be exerted effectively.

The value stream takes the information flow as the

expression form. From the perspective of the value information processing process, the processing of the value information constitutes the activity loop of value information. The activity loop of value information can be abstracted into the transformation process of signal, symbol, knowledge and other forms. The transformation process of the activity loop is supported by the value creation activity, which consists of strategic observation, judgment, command decision-making and production. On the one hand, the value creation activity loop is driven by the value information activity loop, and the results obtained by the value information activity provide support for the value creation activity loop, and the value information activity loop plays the role of "driving shaft". On the other hand, the value creation's activity loop puts forward the demand for the value information's activity loop. The systems promotes the value information flow orderly through value information activities, then the application value of value information is improved and the systems ability is achieved. The speed and accuracy of the value information's activity loop determine the timeliness and precision of the value creation activities of the VCS.

C. Mutual Understanding and Mutual Compliance Based on the Community of Destiny

At the cognitive level, the VCS shows the components of system's mutual understanding on the situation of the business ecological environment and the goal of value creation. At the social domain level, the VCS shows the components of system's mutual compliance of rules and norms by various components of the systems. The common goal of value creation is to satisfy the desire and interest of other members in the systems. The consistent components here include systems, personnel, and so on. Mutual understanding is to form a consistent understanding of information and knowledge in the VCS, and reach a consensus on the situation of business ecological environment and value creation tasks and goals of the VCS. Mutual compliance is what the stakeholders follow the same processes, rules, and regulations^[7]. Under the same systems and normative constraints and guidance, the personnel and systems in the VCS follow the construction rules, value creation's execution rules, and operational norms consciously.

Mutual understanding and mutual compliance are the basis for realizing the synergy and synchronization of the value creation of the VCS. Through mutual understanding and compliance, value creation's information and decision-making advantages are transformed into value creation's action advantages ultimately. The VCS is the basis for realizing the network value creation in the whole society, whose typical features can be summarized as interconnection, interoperability, interoperability, mutual understanding and mutual compliance.

III. CONCLUSION

The concept and characteristics of the corporate value co-creation systems, which can provide support for the

construction of corporate value co-creation systems, are analyzed in this paper. As the key point of building and developing future corporates, the construction of building VCS is a complex systems engineering. On the one hand, it is necessary to deepen the research on the connotation as well as construction needs of the VCS further, especially analyzes its features from the systems level. On the other hand, it is necessary to strengthen the top-level design of the VCS according to the characteristics of the VCS construction, study the engineering methods suitable for the VCS design and management, and guide the construction of the VCS.

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Gongli Luo (1964), male, Han nationality, Zibo, Shandong, professor, doctoral tutor, research direction: technology economy and management, innovation and entrepreneurship management

Qiongqiong Wei (1979), female, Han nationality, Harbin, Heilongjiang, lecturer, doctoral student, research direction: technology economy and management.