
Research on Business Model Innovation of Ecotourism Enterprises

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Abstract

Ecotourism embodies the emphasis on ecology and ecotourism enterprises are the components of modern tourism market. To study the business model innovation of ecotourism enterprises based on different value models, this paper was based on three different forms of value formation of value chain, value ring and value network in the reality. This paper mainly discussed the basic characteristics of different value forming models, and the different effects and constraints analysis on the factors of business model. Under the background of value model, the direction and characteristics of business model innovation of ecotourism enterprises were discussed. The research showed that ecotourism enterprises can have various alternatives.

Keywords: ecotourism enterprises, business model, innovation

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INTRODUCTION

Ecotourism embodies the emphasis on ecological development. It is a mode of modern tourism industry, which is realistic and innovative. Since the 1990s, the rapid development of information technology, represented by the Internet, has provided enterprises with more innovative ways and space than ever before. A great number of new models based on Internet technology emerge as the times require (Baldassarre et al. 2017). They create and provide value for customers in a completely different way from traditional enterprises and get the success that traditional enterprises cannot match (Zhou 2015). It is in this context that the business model, which is first seen in the vocabulary of computer science, has attracted wide attention from all walks of life and has become one of the most popular words in the business and academic circles worldwide in a short time (Waldner et al. 2015). Ecotourism is not only a new direction for the development of tourism industry, but also can affect the attention paid by countries around the world to ecological development. The management mode of ecotourism enterprises is undergoing transformation and should innovate its business model.

THREE FORMS OF VALUE FORMATION

James Thompson's Technical Classification

American scholar James Thompson expanded the research object to the service industry outside the manufacturing industry, and further expanded Joan Woodward's research fruits (Bolton and Hannon 2016). Thompson believes that not only for manufacturing, but also for service enterprises, the type of technology used determines the most efficient internal structure that the enterprise should have (Zhao et al. 2016). To explore the best organizational form of all kinds of enterprises, including service industry, Thompson first reclassified the production technology used by enterprises (Zhang and Yan 2014). He classified the two variables as the standard degree of input and production, and the standardization of production process. According to the degree of standardization, the technology used by organizational units was divided into Long-linked technologies, Mediating technologies and intensive technology (Three types of intensive technologies) (Linner et al. 2017).

The Factor Relationship of Business Model

It is known from the concept of VI business model that, as the component of the enterprise model system, there is an inherent relationship between V, resource portfolio R, operation process P and interface pattern (Carayannis et al. 2015). First, enterprises organize and

arrange various resources (R) for specific activities such as production and processing according to the requirement of providing specific value proposition (V) to the market. These activities are carried out, repeated and stable in some most efficient way. The enterprise specific operation process (P) is formed, and the above three elements are determined. After that, the enterprise interface mode (I) will also be determined according to these internal conditions and external environment (Zhang et al. 2016). We can see that the above four elements show a close relationship between the preceding elements and the latter elements. This relationship, coupled with the use of time (T) to represent changes in various external environments, can be described in the form of multiple composite functions (Ibarra et al. 2018).

If the influence of the external environment changes is considered, that is, without the change in the value proposition, the change of the external resources and the technical environment may bring about the change of the enterprise resource combination, for example, when the environmental pollution is serious, the cost of the coal and other non-renewable energy is rising, but the price of green energy such as the solar energy and wind energy are decreasing. Enterprises may change their power resources choices simply because of changes in the external environment (Freiling 2016). Thus, if the relationship between the value proposition and the resource composition is expressed with the function relation, a time variable t representing the change of the external environment can be introduced, and the time variable t represents the results of various environmental factors, so that the resource combination R can be expressed as the function of the value proposition v and the time t :

$$R = R(v, t) \quad (1)$$

The meaning of formula one is that the enterprise's resource combination R is a function of value proposition and time t , and $R=R(v, t)$, in which the value proposition and time are independent variables, and the combination of resources is the function of the value proposition v and time t , and the different value claims will determine the corresponding different resource combinations; for the same value proposition R , the change of time t may also lead to a different combination of resources.

In a specific time and environment background, when the value of the enterprise is determined, the corresponding resource combination will be determined, and the determination of the resource

combination will directly determine the way of the effective organization of resources for production, that is, the formation and stability of the operation process. That is, the production and operation process of an enterprise depends objectively on its value proposition and resource combination. Specific resource combinations will determine the scope of the design and selection of the operational processes that use resources to create value effectively. Therefore, when the resource portfolio is determined, the corresponding operation process will be determined. In this way, the intrinsic link between the three values, resources and operation processes can be expressed in the form of multiple composite functions:

$$P = P(r, v) \quad (2)$$

The r in formula two represents the resource combination, and v stands for value proposition.

Three Different Forms of Value Formation

From the perspective of value analysis, the process of enterprise operation is the process of value creation and transmission. Therefore, through the analysis of value formation, it can effectively link up every link of the business operation and provide the direction and basis for the realization of the integration and innovation of the various elements of the business model based on the innovation of value (Spieth and Schneider, 2016). The first is value chain. The mode of creating value by vertical correlation technology is called chain value formation mode, referred to as value chain. The logic of value formation in value chain is to transform value from raw materials into finished products. Generally, manufacturing enterprises have a typical chain value formation mode; the second is value chain. Value ring, also known as value store, refers to the value formation mode of creating value through solving the problem by using integrated technology for customers or clients. It has the characteristics of customizing value activities, order of activities and resources needed according to the needs of customers; the third is value network. Value network refers to a value formation model that enables customers to connect and support each other to create value by using media technology.

In addition, the status of four rent sources created by the business model is unequal. Relatively speaking, resource-based Ricardo rent and bear rent based on dynamic capability are even more prominent. In order to observe the differences in value creation and rent acquisition of different business models, it is assumed that there are two business models or activities that can

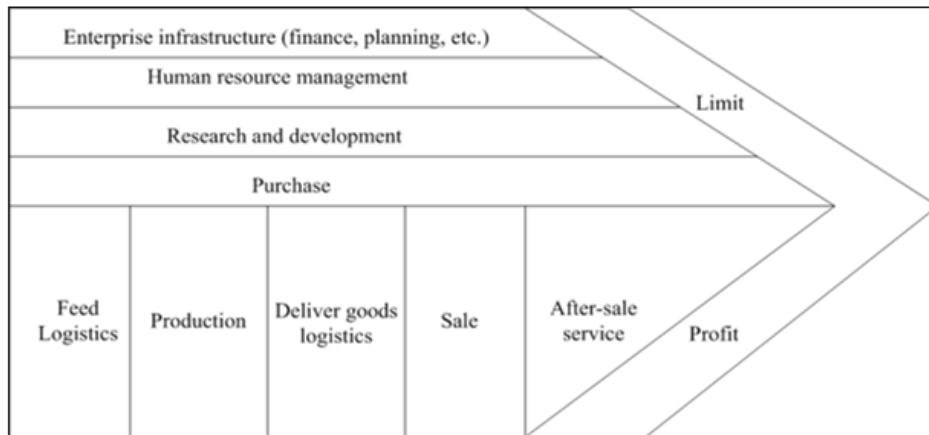


Fig. 1. Potter value chain

be used, and each business model or activity has its own resource selection mechanism and capacity building mechanism. In this way, after the process of resource selection is completed, and the capability and internal resource of enterprises are combined and configured, the value created by business models or activities is:

$$\bar{Z} = \bar{Y} - (\mu_1 + \gamma) + \theta^{-1}\bar{X} \quad (3)$$

In the above formula, $\theta > 0$ represents the reliability of this signal, and \bar{X} indicates the standard normal distribution noise, independent of \bar{Y}_1 . Obviously, \bar{Z} also shows positive distribution with a mean value of zero.

In this way, the value and rent creation effect of the resource selection mechanism and capability building mechanism of business models or activities are abstracted into two values: θ and γ .

According to the definition of conditional probability distribution function, there is:

$$F(\bar{M} < m) = \frac{F(\bar{M} < m)}{F(z < \bar{Z} < z + \Delta z)} \quad (4)$$

When $\Delta z \rightarrow 0$, there is:

$$F(\bar{M} < m | \bar{z}) = \frac{f_{\bar{M}}(m)f_{\bar{N}}(z - m)}{f_{\bar{Z}}(z)} \quad (5)$$

VALUE CHAIN AND BUSINESS MODEL INNOVATION

Analysis of Value Formation

The logic of value formation in value chain is to transform value from raw materials into finished products. Usually, manufacturing enterprises have a typical chain value formation mode. Here, products serve as a bridge for value transfer, linking companies, companies and customers.

As shown in Fig. 1, Michael Porter's value chain diagram describes the value creation process of chain

enterprises using vertical correlation technology, including value activities and profits. The value chain framework helps to understand the source of cost behavior and value difference by decomposing the enterprise value creation process from the basic material to the end user as an independent process. By analyzing the cost, income and value contribution of each process system, the business sector can get the source of cost difference and value advantage.

Business Model Innovation of Ecotourism Enterprises based on Value Chain Model

According to the analysis of the process of the value formation, we know that the value chain framework has laid the main structure foundation for the construction of the new business model of the enterprise under the premise of the value proposition. The conversion of standardized input into the value creation process of standardized production determines the main link of the basic content and the operation process of the enterprise resource portfolio. What's more, the standardization of the vertical correlation technology and the driving factors of the key cost value also restrict the selection of the boundary model.

According to the creation of new enterprises, the innovation of resource combination can be divided into two cases. One is to create a new enterprise and form a new combination of resources. The other is that the combination of resources is reorganized and innovating based on the original enterprise. In the latter case, it needs to be divided into a new value proposition according to the change of the value proposition. One is to realize the innovation of the resource combination under the new value proposition, the other is to realize the innovation of the resource combination under the condition of the original value proposition. It is as shown in Table 1.

Table 1. Innovation classification of resource combination

	New value proposition	The original value proposition
New enterprise	New resource combination	—
Original enterprise	Resource portfolio adjusted according to the new value proposition	Resource portfolio adjusted according to the new environment

operation process. Changes in the resource portfolio inevitably lead to the corresponding adjustment of the operating process, but generally, the change in the resource portfolio is relatively rare compared to the interface pattern. Therefore, the innovation of the operation process is more influenced by the interface

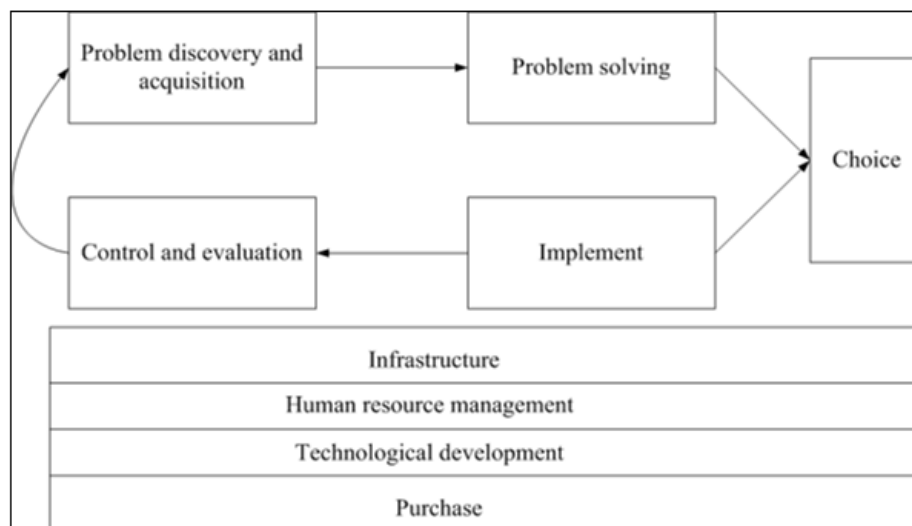


Fig. 2. Basic activities and supportive activities of the value ring

Among them, the formation of new enterprise’s new resource combination is based on the value proposition selected by the enterprise and the constraints of various internal and external environment conditions, and the new combination of new resources can be realized most efficiently to realize the new value proposition. The same is true for new ecotourism enterprises.

As shown in **Fig. 2**, in the value chain model, on the one hand, the basic activities and support activities of the value formation model itself provide the basic framework and main content for the design of the internal operation process of the enterprise, and the design of the related operation process can also be arranged directly according to the specific content of the process of the formation of value. On the other hand, the operation process of enterprises is also affected and restricted by two aspects: resource combination and interface mode. Among them, the resource combination represents the internal constraints from the production technology, and the interface mode represents the external demand and supply environment of the enterprise. The operation process should be designed and determined on the premise that the above two aspects are satisfied. Therefore, in general, the creative power of the operation process also comes from the above two aspects. When the influence of the external environment leads to the change of the interface pattern, it may require the change of the

mode. For example, because of the diversification of consumer demand and the trend of personalized development, enterprises need flexible operation mode, which will inevitably require the corresponding adjustment of the operation process of the enterprise. So ecotourism enterprises must adjust their operational processes to meet the diversified and personalized needs of customers.

BUSINESS MODEL INNOVATION BASED ON VALUE RING

Analysis of Value Formation

Value ring, also known as value store, refers to the use of integrated technology to create value for the customer or client to solve the problem, that is, to customize the value of the content, order, and the required resources to create value for the customer according to the needs of the specific customer problem (Giovacchini et al. 2016). The value creation logic of value ring is to create value through solving problems for customers. The production process of ring value formation mode is flexible and changeable.

In value shops, the problem that needs to be solved can be defined as the difference between the existing state and the state needed, and the solution of the problem or the creation of the value is to change the existing state into a more needed state. Many

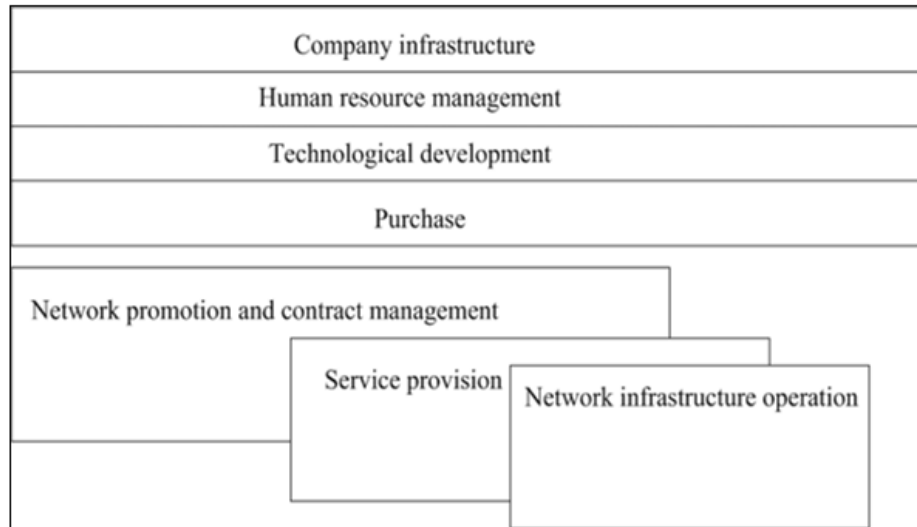


Fig. 3. The basic activities and supporting activities of the value network

professional services have a great number of companies relying on integrated technology with ring value formation mode. In addition, main activities of some other industries in companies may belong to the chain logic using vertical association techniques, while other functional activities use integrated technology to create value and have a ring type value formation model. For example, in the petroleum industry, the production process in the upstream exploration area is understood to be a ring value formation model based on integrated technology. Although the exploration business itself is regarded as the supporting function of the whole oil industry chain value formation mode. Therefore, sometimes the ring value formation model can also be used to describe the key supporting activities in the logic of value formation.

Value ring enterprises generally belong to the field of professional services, with many professional brokers and experts. In general, the basic activities of value ring enterprises are expressed by different professional terms and have unique forms of industry, for example, professional consultation on ecotourism. However, for the basic activities of a value ring company, a generic term can also be used to classify it abstractly into a series of activities associated with the discovery and solution of the problem.

Business Model Innovation of Ecotourism Enterprises based on Value Ring

The basic characteristics of value chain enterprises are the basis for deciding the innovation and choice of business models of value ring enterprises. Therefore, the basic characteristics of value ring enterprises are the

premise and conditions for choosing the direction of business mode innovation (Lindström 2015).

The business models innovation of ring enterprises should be based on the full exploitation and utilization of these characteristics. For example, due to the large demand for high quality and high price service caused by asymmetric information, it sets up requirements for enterprises to establish an authoritative image and brings opportunities. Ring type enterprises should attach importance to this basic feature and take it as the direction of innovation of interface mode. For example, expert leverage points out that the use of experts can greatly improve the value creation level of value ring enterprises. Therefore, ecotourism enterprises should pay full attention to the selection of talents, hire senior talents with high social prestige and professional technical level to give full play to the leverage of experts.

As shown in **Fig. 3**, the basic activities of value network and supporting activities are designed. This design is a kind of operation mode that helps to solve problems and is an effective mode innovation choice of value ring companies. For the ring type enterprise, the merger problem can effectively reduce the uncertainty, improve the professional communication and study efficiency. At the same time, the merger problem is also an effective means to reduce the cost and improve the value. The degree of merger is related to the size of the company's resources portfolio. For ecotourism enterprises, the highly consolidated problem requires the company to have comprehensive and relevant professional resources.

CONCLUSION

Ecotourism is an innovation for tourism market and embodies the emphasis on ecology, so should innovate business mode of ecotourism enterprises. Based on the three different models of value formation of value chain, value ring and value network in the enterprise, this paper mainly discusses the basic characteristics of different value forming models, and the direction choice of business model innovation and related characteristics under the background of different value modes of different influence and constraint analysis on the factors of business model. In short, the innovation of business mode based on value network is mainly

manifested in the adjustment or expansion of company size in vertical and horizontal direction. Depending on the nature of the company's services and market demand and the specific circumstances of competition, ecotourism enterprises can have various alternatives.

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REFERENCES

- Baldassarre B, Calabretta G, Bocken NMP, Jaskiewicz T (2017) Bridging sustainable business model innovation and user-driven innovation: a process for sustainable value proposition design. *Journal of Cleaner Production*, 147: 175-186. <https://doi.org/10.1016/j.jclepro.2017.01.081>
- Bolton R, Hannon M (2016) Governing sustainability transitions through business model innovation: towards a systems understanding. *Research Policy*, 45(9): 1731-1742. <https://doi.org/10.1016/j.respol.2016.05.003>
- Carayannis EG, Sindakis S, Walter C (2015) Business model innovation as lever of organizational sustainability. *Journal of Technology Transfer*, 40(1): 85-104. <https://doi.org/10.1007/s10961-013-9330-y>
- Freiling J (2016) Editorial: business model innovation – a concept between organizational renewal and industry transformation. *Journal of Entrepreneurship Management & Innovation*, 11(1): 3-10. <https://doi.org/10.7341/20151111>
- Giovacchini E, Rosenkranz NA, Teigland R (2016) Being different by being yourself: identity as a driver of business model innovation. *Academy of Management Annual Meeting Proceedings*, 2016(1): 17707. <https://doi.org/10.5465/ambpp.2016.17707>
- Ibarra D, Ganzarain J, Igartua JI (2018) Business model innovation through industry 4.0: a review. *Procedia Manufacturing*, 22: 4-10. <https://doi.org/10.7341/20151111>
- Lindström J (2015) A model for value-based selling. *Journal of Multi Business Model Innovation & Technology*, 2(1): 67-98. <https://doi.org/10.1016/j.promfg.2018.03.002>
- Linner T, Solcanu G, Boom CVD, Lingegard H, Istamto T, Proctor G (2017) Business model innovation for value and technology based preventive health care. *Gerontechnology*, 16(3): 200-206. <https://doi.org/10.1080/08956308.2016.1161401>
- Spieth P, Schneider S (2016) Business model innovativeness: designing a formative measure for business model innovation. *Journal of Business Economics*, 86(6): 671-696. <https://doi.org/10.1007/s11573-015-0794-0>
- Waldner F, Poetz M, Grimpe C, Eurich M (2015) Antecedents and consequences of business model innovation. *Academy of Management Annual Meeting Proceedings*, 2015(1): 347-386. <https://doi.org/10.5465/ambpp.2015.16790>
- Zhang C, Yan J (2014) Business model innovation on the photovoltaic water pumping systems for grassland and farmland conservation in china ☆. *Energy Procedia*, 61: 1483-1486. <https://doi.org/10.1016/j.egypro.2014.12.152>
- Zhang Y, Zhao S, Xu X (2016) Business model innovation: an integrated approach based on elements and functions. *Information Technology & Management*, 17(3): 303-310. <https://doi.org/10.1007/s10799-015-0225-5>
- Zhao X, Pan W, Lu W (2016) Business model innovation for delivering zero carbon buildings. *Sustainable Cities & Society*, 27: 253-262. <https://doi.org/10.1016/j.scs.2016.03.013>
- Zhou M (2015) Research universities science and technology achievement transformation based on business model innovation. *Jiangsu Commercial Forum*, 56(2): 217-226. <https://doi.org/10.2991/msetasse-16.2016.221>