

Research on Sustainable Product Design Strategy in Sharing Economy in Post Epidemic Period

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ABSTRACT

The allocation model of economic resources with the goal of sharing has gradually formed a sharing economic ecosystem in China and played an important role in the development of green economy. COVID-19 has brought a heavy blow to the new economic industry. The digitalized enterprises have ushered in structural changes in the epidemic situation, breaking through the time and space boundaries of the online and offline industries, especially in online education, telecommuting, fresh electricity providers and the Internet healthcare industry. Through literature reading and data induction, sort out the concept and development context of sharing economy, and put forward sustainable strategies for product safety service and effectiveness maintenance, that is, people-centered, digital technology to optimize products and reduce management costs, adhere to the common development of product service and environment-friendly, implement international and localized services, and highlight regional characteristics, This paper expounds the innovation of sharing mode and the construction of sharing society from a new perspective.

Keywords: Post epidemic period, sharing economy, Sustainable products, Strategy.

1. INTRODUCTION

The spread of the novel coronavirus pneumonia has seriously disrupted the 2020 agenda for sustainable development, but has not cut the importance and urgency of sustainable development. By studying the development situation of shared products in the post epidemic period, exploring the optimal development strategy of sustainable shared products, and realizing the expansion of the shared platform from the C-end consumer business market to the B-end enterprise service market, the enterprise product service market has become a new battlefield of competition. It is of great significance to further expand the market and cultivate new competitive advantages. Therefore, in the post epidemic period, the product service strategy in the optimized sharing economy has become the focus of social attention.

2. CONCEPTUAL INTERPRETATION

2.1. Sharing Economy

In 1978, American sociologists Marcus Felson and Joel Spaeth first put forward the concept of sharing economy. The remarkable feature of sharing economy is that resource providers use the network platform to share resources and meet individual needs with less cost. In short, sharing economy aims to build a low-cost and sustainable nature through the integration of organizations and resources between different departments or business units.

2.2. Sustainable Design

The concept of sustainable development first appeared in the outline of world natural resources conservation of IUCN in 1980, and the concept of sustainable design is a strategic activity derived from the idea of "sustainable development". Ezio Manzini of Milan Polytechnic University believes that sustainable design is a strategic activity that uses systematic

integration and planning of products and services, with the ultimate goal of utility and services replacing material products. Therefore, this paper will comprehensively consider the planning of sustainable product design strategy from three dimensions of economy, society and environment.[1]

2.3. Sustainable Design In Sharing Economy

Idle resources are an important feature of sharing economy, and the significance of sharing economy is to deconstruct the problem of idle resources and take it as an opportunity to establish better products, systems, services, experiences or business networks. [2] Sustainable design is in line with the development law of data operation. Through the redistribution of goods, tangible product services, collaborative sharing of non tangible resources and open collaborative sharing as the main business mode, optimizing and integrating resources has gradually become an important business form in the design field, realizing the optimal allocation of resources in a larger scope, at a higher level and in a deeper degree. [3]

3. BACKGROUND ANALYSIS

The epidemic not only has a negative impact on the operation of the macro-economy and various industries of the national economy, accelerating the transformation of the enterprise economic model, but also has a serious impact on the platform economy and various new industries represented by the sharing economy.

During the epidemic period, the offline consumption and production activities are limited and forced to shift to the online, thus cultivating people's online consumption habits, and stimulating the demand in some areas of sharing economy. From the extension of products to professional skills, it has expanded in the fields of transportation, space, life services, knowledge and innovation platform. Among them, the number of users and transaction volume in the fields of shared medical care and education are on the rise, which is the key industry for the development of new formats of sharing economy in the future.

3.1. Foreign Development Status

Uber builds a sharing economy platform through mobile applications, breaking the traditional car rental field controlled by taxis or rental companies. During the epidemic period, Uber's car calling service suffered a serious loss, and the loss caused by the epidemic was alleviated through the "cross industry" of "excellent food" distribution food business. In the same field, LYFT rapidly turned to medical aid and short-term government services to alleviate the impact when the demand for buses dropped sharply during the epidemic

period. In the post epidemic period, social distance becomes normal, which reduces the overall operational efficiency. However, cross domain sharing industry can maximize personnel efficiency, reduce the cost of suppliers and demanders, and maximize benefits.

3.2. Domestic Development Status

"Cross industry" group heating has become a new idea to solve the plight of enterprise distribution industry during the epidemic period. HEMA announced to cooperate with multiple platforms to solve the problem of manpower shortage and job waiting personnel in the catering industry. Subsequently, various industries continue to join the ranks of "sharing", and the sharing mode gradually develops from the consumption field to the production field. The report of China's sharing economy development (2020) points out that sharing economy is the most urgent and challenging issue at present. [report on the development of China's sharing economy (2020) March 4, 2020] after the epidemic, China's sharing economy innovation is active, but the current society's understanding of the sustainability of economy and environment is still insufficient. When the economic environment changes and enterprises are facing transformation and upgrading, consumer awareness can only passively accept the change.

4. THE DEMAND OF PRODUCT SUSTAINABLE DESIGN UNDER THE MODE OF POST SHARING ECONOMY

Reducing cost and increasing efficiency and increasing revenue and reducing expenditure have become the first choice of platform enterprises' business strategy in the post epidemic period. Under the mode of sustainable sharing economy, users have the dual identities of content producers and consumers, that is, users share energy, information and physical objects on the Internet platform, and realize the sharing mode of "sharing value" instead of "exchange value". [4]At the same time, enterprises began to examine the traditional track of scale and speed, and found that quality, service and safety will become the key elements of sustainable market competition in the post epidemic period.

4.1. Research On The Optimization Of Product Design And Safety Sustainability Under The Mode Of Sharing Economy

Professor Sun Feng, doctoral advisor of Sociology Department of Tsinghua University, pointed out that the epidemic has spawned a new sharing economy model, which takes cloud media as the core and takes participation, interaction and sharing between users as the basic characteristics. It focuses on people's psychological changes to safe and sustainable products

and opens up the links of production, supply and marketing. Therefore, by combing the security related scenarios, the security related product requirements are derived, and the security related product function points are targeted, including the security at the visual level, the security at the data level, and the security at the capital level (as shown in Figure 1), so as to achieve the balance between the security and the experience of the product.[5]

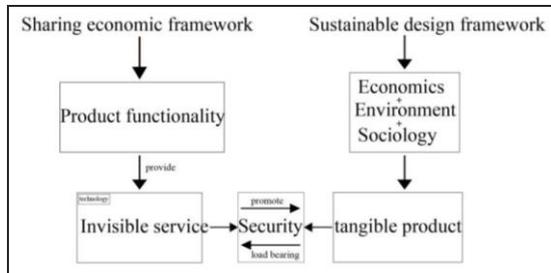


Figure 1 Service security optimization path
Photo source: author's own painting

4.2. Human Centered Product Design Innovation Under The Mode Of Sharing Economy

During the epidemic period, the low efficiency of resource allocation among various industries leads to the shortage of products and energy supply. The advantage of cross industry cooperation lies in effective labor filling. Sharing economy is based on the Internet thinking to maximize the use of idle resources. This paper optimizes the new path of sustainable development by combining with the product life cycle model of American scholar Raymond Vernon. The development path of the new path is called the "second curve" (as shown in Table 1).

Table1 product life cycle of people centered sharing economy

	Product budding period (growth)	Product growth period (Development)	Product maturity (achievements)	Second curve
product development	Product goal: grasp the direction	Product positioning: difference positioning	Commercial value: profit maximization	Product continuity: cost minimization
User centered product service	Find the demand contact and pain point	Innovative experience mode of channel contact	Expression of core values	The embodiment of sustainable value
Shared product direction	Maximize benefits and minimize costs			

Source: author's own drawing

5. SUSTAINABLE PRODUCT DESIGN STRATEGY UNDER THE BACKGROUND OF SHARING ECONOMY

The combination of sharing and sustainable design forms a systematic operation mode to promote the circular development of economic ecosystem. On the one hand, the core goal of sharing economy is consistent with the 3R principle of sustainable design; on the other hand, the social form of sustainable design and the cooperative mode of economic mode cannot be separated from the problem of resource restructuring in sharing economy. Therefore, the corresponding relationship between the two should be through cross-border thinking, resource integration, and systematic consideration of user needs, enterprise management, social resource allocation and other issues.

5.1. In the Era Of Digital Intelligence Of Internet Of Things, Adhere To The Persistent Service Situation Mode

In the future, the most critical asset of sharing economy is not only users, but also data. Reasonable application of Internet and big data related technologies for all-round data calculation in advance, during and after the event can reduce product life cycle cost and improve resource utilization and production flexibility.

Case description: Atlas Copco, a Swedish manufacturer of industrial machinery, is committed to making products intelligent, such as air compressors. After the implementation of the Internet of things scheme, the sales volume of compressors is changed from single unit sales to contracts signed with customers. During the contract period, the manufacturer ensures the operation time, compression quality and energy efficiency of the equipment, and grasps the parameters of the equipment at any time by using the data transmission of compressors, so as to realize the docking of the company's product life cycle and the user's business life cycle.

5.2. In All Aspects Of Sharing Products And Services, We Should Consider The User's Experience And Feelings, And Shape The Professional Service Attitude

Differentiated professional service attitude is the characteristic of shared products to distinguish from other products, and the quality of service experience is the direct factor that affects users to choose or give up shared projects.

Case description: Mobai company aims at the pain point of "the last kilometer" of urban traffic, and provides users with car borrowing and returning service. In the commercial sharing design, the durability of

products should be fully considered to avoid the impact of product quality problems on a user's experience. In addition, Mobai introduces the Internet of things technology into the shared car rental scheme, and integrates GPS communication module in the body lock, so that the company can monitor the bicycle data in real time through the cloud system.

5.3. Adhere To The Direction Of Collaborative Development Of Shared Product Services And Environment-friendly Services

Under the Internet plus sharing economy mode, we should adhere to the concept of "green, open and sharing", and persist in the development of collaborative products and environment friendly collaborative innovation, from products or production processes to intelligent business services, and work together in the direction of recycling and environmental protection.

Case study: in 1994, North American carpet manufacturer infield reduced the negative environmental impact by changing the composition, source, production process and sales channel of raw materials, and promoted a series of technological and ecological business changes within the group. By collecting old fishing nets as raw materials, we can provide customers with square carpet repair service, extend the product life cycle, and change the traditional "production sales Scrap" linear mode to "rent but not sell" PAAS cycle mode. After that, the company's annual net profit increases and carbon emissions decrease rapidly.

5.4. Implement localized Service Module To Highlight Regional Service Characteristics

Under the trend of industrial value chain reconstruction and industry integration, localization is not an image problem, but an internal factor to maximize benefits. We should fully consider the demand of different periods, and push characteristic services combined with regional characteristics. First of all, we should excavate the local product service language. Secondly, we should make differentiated services according to the local consumption level and aesthetic requirements, aiming at the needs of local users. Finally, we should maximize the enthusiasm of residents on the premise of respecting local cultural habits and religious beliefs.

6. CONCLUSION

In the post epidemic period, practical and high-quality shared products and services replace the consumption tendency of "private possession" and move towards the road of sustainable development in the new era. The sustainable product design of shared

economy needs to apply digital, intelligent and automation technologies and adhere to the concepts of persistence, localization, environmental friendliness and intangible culture in order to grasp new opportunities and start the overall resources of society, Build a friendly shared cultural community to provide important direction guidance for the sustainable development of shared products in the post epidemic period.

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