Product Service System of Individual Customization Based on Internet

Ying Zhao
Beijing Institute of Graphic Communication, Beijing, China

ABSTRACT: Objective it analyzes the present situation, development about product service system (PSS) of individual customization in the internet age. By determining the unchangingly user-centered principle and three changing aspects of individual customization from handicraft era to the age of the Internet, we summarized the reason of product service system (PSS) of individual customization in the internet age are technical plebification, product service plebification and user plebification. Method It is based on the case analysis explained the classification and characteristic of PSS. Result PSS of individual customization based on internet can be divided into three categories: integrated platform network media, enterprise brand network media and specialized network media. Conclusion this paper proposed some existing problems from the aspects of users and sellers. Then end with development thinking of individual customization.

1 INTRODUCTION

Individual customization has traditionally been defined as the highly personalized product or service that is made exclusively for aristocrats and the rich. However, the development of society and the progress of Technology, especially the rapidly expanding popularity of the Internet have greatly broadened the scope of individual customization customers, so that the average person can obtain products and services customized for him/herself. The young generation, which makes up majority of the internet users, has become one of the key customer groups of customized products and services in modern age. Numerous domestic and foreign companies and institutions have joined the selling and research of individual customization in the Internet age. They are not only finished products but also the full range product service system, which including design, printing, carving, packaging, express delivery, after-sales service, etc. On this basis, wide diversity of business models for the product service system was created and such design strategy deserves discussion and study.

2 THE PRODUCT SERVICE SYSTEM OF INDIVIDUAL CUSTOMIZATION IN THE INTERNET AGE

System of products and services (and infrastructure), to jointly cope with the needs and demands of customers in a more efficient way with better value for both businesses and customers, compared to only offering products [...] PSS can decouple the creation of value from the consumption of materials and energy and thus significantly reduce the environmental impact in the life cycle of traditional product systems[1]. So the key point of PSS is no longer the product, but the whole system of product and service. We should not only focus on the result, but also the progress.

In addition, Product service system design (PSSD) is a concept based on PSS that conducts systematic planning and design on strategy, concept, product (tangible and intangible), management, process, service, use and reclamation of the product service system. We proposes three level strategy for design of product service system, namely responsibility driving, function driving and user driving [2]. Apparently, most product service system for individual customization on line particularly focuses on the third level or user driving.

Besides the characteristics of the user driving, with the rapid development of the Internet, personal customized product service system has also been a lot of new properties. It performances mainly in the following areas: The type of product and service is increasingly various. The users can choose different types of customization according their need. Traditional customized products are always luxuries and corporeal products, such as haute couture, luggage and bags and so on. But now they almost have been involved in the product and service all aspects of life. Otherwise, the level of customization is flexible. In the past, customized products are often
made by artisans’ hands, and at present, there’re different level of customization, which including complete user DIY, modulated assembly and automatic push etc. Moreover, with the development of manufacturing technology and the decrease of handmade, costs are greatly reduced. Consequently, the price of customized product and service is more and more cheap.

3 FROM HANDICRAFT TO THE INTERNET – WHAT UNCHANGED AND WHAT CHANGED ABOUT INDIVIDUAL CUSTOMIZATION

3.1 The constant principle of individual customization

As time changes, both connotation and denotation of individual customization have changing, but its fundamental principle, customer-orientation, respect and servicing remain unchanged. From the time-honored manual workshop in which tailors custom-made suits for customers to the internet age when big data analysis technology is used to analyze and design customized products, design and production are similarly carried out by focusing on customers’ needs, and such principle is even more significant in the Internet age when customers drive the development enterprises, and enterprises in turn improve and upgrade the products and services according to customers’ feedback [3].

3.2 Analysis on changes

From past to present, individual customization has been greatly changed with the prevalence of the Internet, such changes are outlined in the following aspects:

Change of media: The change from “face to face” communication to Internet-based remote communication is doubtlessly the most fundamental difference between individual customization of the past and present, and great changes were brought about by the Internet. In 2005, Thomas L. Friedman suggested in his book <The World is Flat> that the Internet and software create new opportunities for individuals, allowing them to participate in competitions and cooperation on global basis [4]. The customers are no longer required to visit shops or factories even by times, and the convenient express delivery service makes it easy for sellers to deliver goods. Meanwhile, in the big data age, personal preference and shopping habits of customers are no longer controlled by sellers, but by large e-commerce platforms and companies with abundant Internet-based resources and they become new leaders of the market.

Change of target customers: Main customers change from the elite to the civilian class. All along, most people think that personal customization is mainly for the nobility or the rich. However, the cost of customized products are constantly reduced. More and more civilians can afford to customize products.

In addition, major user groups have changed from middle-aged and elderly group to young people. In the Internet age, the younger generation becomes the major target group of such products and services. One of the reasons is that their familiarity with PCs and mobile devices. According to a CCNIC report, as of December 2014, majority of, or 78.1% of Internet users in China are within the age bracket from 10 to 39, among which, the age bracket from 20 to 29 accounts for the majority or 31.5% of all Internet users [5]. Most youngsters of modern age are fond of individuality and diversity. According to a research report on post-90s released by the research firm Horizon Research, most of the post-90s respondents say “I love something different but hate something same with others” (46.7%) and “I like to be different” (43%) [6]. Individual customization echoes youngsters’ needs and wins popularity among this group.

Change of the nature of services: The traditional individual customization services were provided by sellers especially in measurement and matching phases. In contrast, the Internet-based individual customization more incline to a process of DIY in which the customers make self-service according to on-line information including measurement, matching, assembly, etc. provided by the seller. In this way, individual customization’s definition evolves from “tailored for few” in the past to “design and make by oneself” at present. To most youngsters, DIY is an activity without pressure but with enjoyment, leading to an improved user experience.

4 CATEGORIES OF INDIVIDUAL CUSTOMIZATION PRODUCT SERVICE SYSTEM IN THE INTERNET AGE

Internet-based customization business is diversified in terms of types and business models. In this paper, we divide the business into three categories according to types of network media: Integrated platform network media, enterprise brand network media and specialized network media.

4.1 Integrated platform network media

Integrated platform network media is a kind of network media which provide various different products and service for sellers, common customers, skilled designers, dealers, factories, etc. This sort of successful network media usually take quantity to win, and integrate different kinds of stakeholders, so that to establish a comprehensive platform. Most of network media will provide abundant choices of
products and service for customers, and have little limit to the professional skill and favorite style of customers. So they are relatively easy to gather popularity and attract more common customers with different demands compared with other two types of network media.

For example, the 3D printing service with which users can upload their own modeling code to the professional 3D printing website, bulletin or e-commerce platform for sharing of experience and ideas and seeking for producers, and ultimately obtain the customized final products [7]. The world leading 3D printing website Shapeways provide a wide range of product and services to different customers, refer to Fig. 1. Designers can upload their 3D design to order instantly, and the website will produce it with 3D printing machine, then help them sell in the market, get feedback and share with others. Customers who have simple design basic can learn how to turn their idea into reality. Some easy 3D printing apps or 3D modeling and design software on the website will help them create ideal products. Meanwhile, common customers will discover gifts and products designed by their network community. Otherwise, electric business platform such as Amazon, TaoBao and JingDong are also important kinds of integrate network media, which providing various customization products and service for customers to choose.

For instance, customized furniture is mostly modulated assembly, because of the high cost of special style design. Many furniture enterprises provide some customized service. Such as IKEA, they offer customized service in layout design. On their website, customers can find some easy design software for different space, such as kitchen, bedroom, and office. Etc. There’re also some design software for a certain type of furniture, like wardrobe. Most people can use these software to design their own space by inputting dimension of the room, then choosing and putting 3D model of IKEA furniture in the virtual room. By this way, customers will see the general appearance of room in their mind in a short time and know the cost on line. Refer to Fig. 2. Otherwise, there’re also some furniture brand who offer customized service in produce process. After customers’ choosing in existing appearance and color, professional workers will come to measure the exact size in order to produce completely suitable furniture for every single customers.

4.2 Enterprise brand network media

AS the rapid development of individual customization in common customers, many powerful and forward-looking enterprise brand also have found the trend of individual customization, so some of them create the network media of affiliated brand about customization. The major consumers of enterprise brand network media are always the fans of the existing brand or recognize the brand. We can regularly find the link of individual customization part on the official website of the brand. Specific customized product and service is always related to the existing brand, so the sellers can make full use of the brand effect and popularity of existing brand, and broaden the original field. On account of common users are the main customers of these network, so the process of customization on line is often simple and convenient. We call it Modulated Assembly. With this model, sellers provide users to choose from a range of parts freely, the users can select and group the desired parts from the provided ones, and design a custom-made product [8].
4.3 Specialized network media

Specialized network media usually refers to the network media which provide single or characterized products and service. Most of them mainly rely on one or several very characteristics selling point to attract people on line. The popular specialized network media always make a product very small and fine, instead of pursuing large and all.

For example, the App (Application) MYOTee which recorded the most downloads among worldwide non-game iOS APPs on App Store in 2014, allows the users to choose from a range of options including gender, hairstyle, hair color, face shape, skin color, eyebrow, etc. and promptly create a personalized avatar. Such avatar may be posted on social networking sites to share with friends \[9\]. Refer to Fig. 3. Otherwise, there are some other Apps of information, which can select and push appropriate customized information for users regularly according to their preference automatically, and users can subscribe favorite columns in provided ones. The APP will analyze users’ information including personal data, purchase record, reading habit and frequently visited websites. They can also push the selected products and services, such as essays, services and marketing cases by means of text message, reminder, client message and recommendation \[10\], e.g. Chinese information APP Zaker. Refer to Fig. 4.
5 THINKING AND CONCLUSION

The Internet enriches and diversifies the individual customization product service system, but it brings both opportunities and challenges. While people are enjoying the barrier-free freedom and highly personalized services brought by the Internet, some problems and risks must also be taken into account and countermeasures are badly needed to address such problems.

From users’ perspective, currently the on-line privacy protection is far from enough. Some sellers push their message with too much quantity and frequency, making it hardly promote the products but triggering users’ disgust and generating huge amount of spam, such problem should be regulated by applicable laws and regulations [11].

For sellers, return of tangible customized products is a problem. The customized products is made in procedures such as placing order, production, delivery, installation, after-sales service, etc., and such products are unique and some detail is to be determined according to customers’ demand. So return of goods will lead to huge loss of the seller. For this reason, the conditions for return of product shall be further clarified.

Meanwhile, many traditional industries(e.g., retail malls, printing, packaging, etc.) also face huge challenge and they should find new growth drivers, and professionals especially designers are also under severe challenge in terms of knowledge and skills, they shall develop new and critical competitiveness to survive in this new age.

Individual customization is a term of history and novelty, its sustained development is based on its consistent value – customer orientation. Nowadays, in the rapidly changing Internet age without constancy, a new type of individual customization that confronts, evades and solves the existing problems and takes into accounts all kinds of factors will definitely become an integral part of Internet-based business realm of the future and betoken a great potential of growth.

PREFERENCES
