User Experience in the Era of O2O - Service Design Revolution of the Online Education

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Abstract. With the high-speed development of China Internet and great impact of advanced worldwide design minds, Baidu's UED Department design work has developed from traditional interface design to product innovation design based on qualitative research. At the same time, we are carrying out experience measure strategy which is more efficient and more quantitative. To better explain the core concept "experience measure strategy", an application example is described in detail. "Service design" is mentioned and supported to be the key of future user experience in the time of O2O. Two interesting experiences are shared to back up a view that Service design is not only to design a specific "service", from a higher point of view, it should be a systematic product design, including brand, users, products and service, all these connections makes up into a new pattern of optimizing service value.

Keywords: DUXU in developing countries · Education/training for DUXU · Service design

1 Introduction

Based on years of design practices of Baidu products, this article discusses the importance of the experience measurement in the current Chinese Internet. An example is given for explaining how Baidu makes design innovation that is driven by data measurement. Moreover, it brings the thinking and inspiration of the design education in current China, as well as the value of Baidu's promotion of design education. This article sums up practical experiences on service design under China's O2O trend by means of innovative explorations in the area of design education. The following is the structure of this article:

1. User experience redefinition:Experience measure strategy
   (a) The Development of Baidu's User Experience;
   (b) The Evolution from Design to Experience;
   (c) The Application Example of Experience Measure Strategy - The Searching Revision of Baidu Chuanke (www.chuanke.com);
   (d) The future of user experience
2. Internet Trend in China: O2O Is the Trend
   (a) The Emerging of O2O Generation;

(b) Setbacks and Blocks of Design Education;
(c) O2O Revolution in Design Education;

3. The Future of User Experience: Service Design Revolution

2 User Experience Redefinition Experience Measure Strategy

2.1 The Development of Baidu's User Experience

Founded in 2005, User Experience Design Department of Baidu has constantly grown with the development of Baidu Company and China internet in the past decade. In the first 2–3 years, we were mainly responsible for visual graphics, such as sort of searching advertisements and business systems which are similar to Google Adwords and Baidu Ecom. The work value of User Experience Design Department was about basic design category, including graphic, color beautification, format design and so on. We also did parts of front-end development. At that time, we were named as "art worker", not designer (Fig. 1).
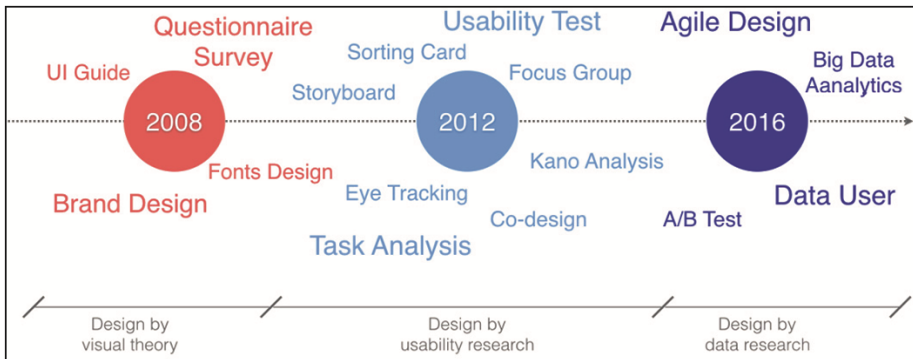

Fig. 1. The development process of user experience in Baidu

With the high-speed development of Baidu and great impact of advanced design concepts and minds from foreign countries (especially, Nielsen's Ten Usability Heuristics, Norman's Availabilities and the Design of Everyday Things), design work of User Experience Design Department has developed from traditional interface design to product innovation design based on qualitative research, which is not only including mature user research, market analysis, interaction design, visual design, but also involving product concept innovation and business program design. At the same time, we are carrying out experience measure strategy which is more efficient and more quantitative.

2.2   The Evolution from Design to Experience

What is experience measure strategy? To put it simply, it aims to use special automaticdatabase platform to analysis a large number of samples efficiently, guide and evaluate products' usability and innovativeness. Through this method, it is objective to reflect products' user experience in current data trend. In addition, compared with traditional qualitative measure methods, automatic database platform could reduce time-cost and resource investment. It is significant for Internet to reduce time-cost because internet may happen revolutions and information explosion in any time.

In Baidu, there are three automatic database platforms help designer to do product analysis and design Innovation. The most important platform (code name: Hunter) is used by User Experience Design Department, which could seasonable monitor users' behavior. Hunter's core system metrics containclick distribution of page elements, the number of clicks, sequence of clicks, browsing depth etc. Moreover, Hunter could make visual analytical graph (The image below is a thermodynamic chart of users' On Clicks, which introduces users' click distribution of page elements and product module) (Fig. 2).

Fig. 2.   The product interface of Baidu hunter

Besides, the other two user experience database platforms: Baidu Tongji and Baidu UFO. Firstly, Baidu Tongji platform has many data analysis functions, for example it could analysis the PV, UV, bounce rate, browsing time of full station. There are three important KPI involved with user experience: user source, distribution of user properties, degree of users' contribution. In addition, Baidu UFO platform is a on-line collection of experience advices and error feedback system. User could submit experience problems by feedback entrance of product to system server. And these feedbacks are collected key words and statistic analysis by UFO, which helps designer to improve product interaction and product tactic. Meanwhile, user experience researcher can select helpful and valuable users to do qualitative research (Figs. 3 and 4).
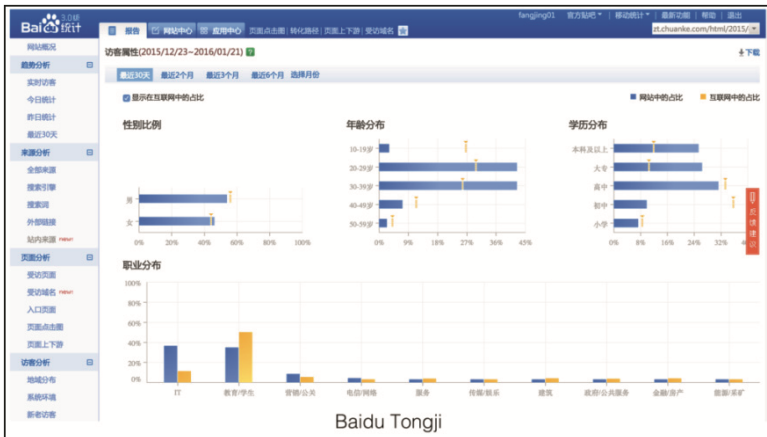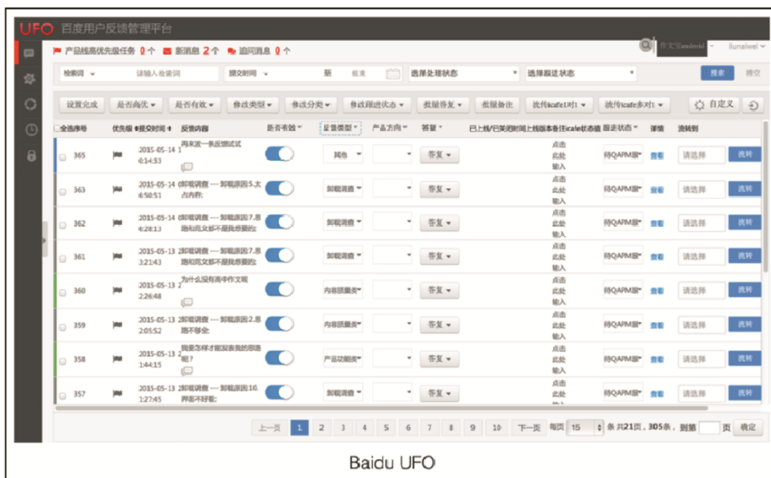
Fig. 3.   The product interface of Baidu Tongji

Fig. 4.   The product interface of Baidu UFO

2.3   The Application Example of Experience Measure Strategy - The Searching Revision of Baidu Chuanke (www.chuanke.com)

To better explain experience measure strategy, there is an example about visual data directing revision design. Baidu Chuanke is one platform for sharing education videos. On this platform, users can search various interesting education content, watch on-line videos, study and discuss knowledge, submit assignments on-line. According to data accumulation in the past, it is can be see that there are more than 20 % users prefer to looking for content by searching entrance on the site. In September 2015, our designers used on-line data system of Hunter to check the data of search engine results page. From

on-line data chart, designers found some serious experience problems: (1) Thermodynamic diagram of clicks indicated that headlineclick rate was much higher than that of course cover which was easier to click. (2) The course which is ranking first could not attract users intensively click it and its visual guide was too intense, while the other courses' click area were intensive. (3) Simple list type visual design made the order too important, which result in the click rate of ranking first course much higher than others (Fig. 5).
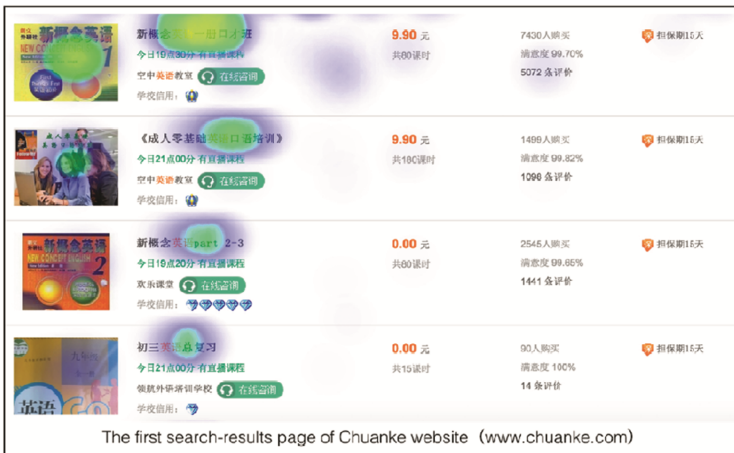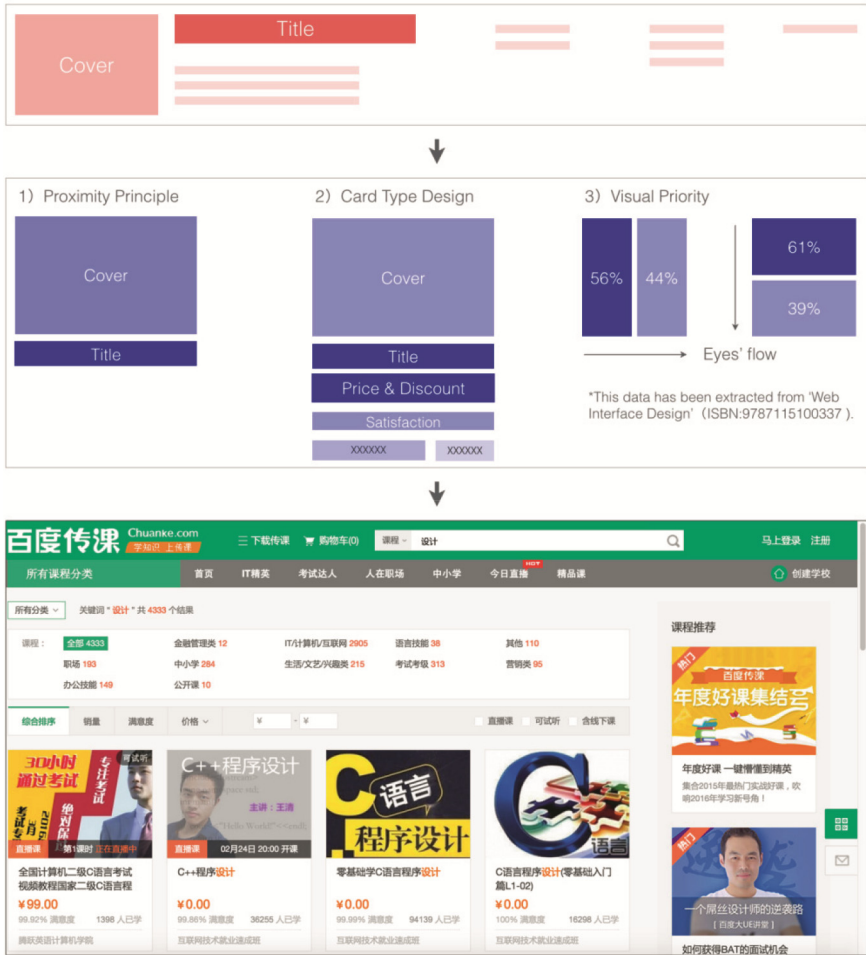

The first search-results page of Chuanke website (www.chuanke.com)

Fig. 5.   The data of search engine results page of Chuanke website; the color represents the number of clicks (Color figure online)

According to the visual data monitoring, we accurately analysis user experience problems rapidly and output optimization scheme: (1) the design defect of the first question was that relevant elements used different design patterns. In view of gestalt principles, adjusting the positional relation between words and pictures could deal with this problem. (2) The second question was that one course had different types of information, which space distributions were too scattered and visual focus could not keep connection. Designers used card type design to order the title, price, satisfaction, the number of users by importance ranking to solve this problem. (3) It is easier to optimize the third question, based on using card type design to arrange information, designers make sure the rationality of card quantity and consider card quantity on the first screen (According to the experience, four cards in one row, two lines of card in one vertical screen) (Fig. 6).

2.4   The Future of User Experience

Could user experience become better in the future? In the view of the business value and Innovation thought created by user experience, I look forward to user experience. If you ask me how long time will new revolution of experience use, I could not answer this question accurately. However, design education may be one method to guide and

The new search-results page of Chuanke website (www.chuanke.com)

Fig. 6. The design idea of new search-results page

stimulate us in the experience future. We analysis the environment of China Internet and the situation design education, which might help us to touch experience future.

3   Internet Trend in China: O2O Is the Trend

3.1   The Emerging of O2O Generation

In the time of PC, the Internet companies in both U.S. and China shared a lot in common, e.g. product forms, business models, key technology. Many people think Google and Baidu are the same or twin brothers due to the similarity of their home pages. And a lot of people say that Baidu copied Google because Google was established before Baidu

(Google was established in 1998, Baidu 1999). In fact, from my point of view, this is the impact of "trend" in a certain period of time. Internet brought high-speed communication and explosive information, there are millions of words and pictures created every day. How to get access to the information you are looking with efficiency? In this case, the birth of searching engine is a corollary. Different user behavior and culture variation lead to different regional market environment. Therefore, the existence of similar searching engines like Baidu, Yahoo, Naver, Google, can be reasonable. There are many companies focusing on the same business, not only in searching field, social and e-commerce as well. In the time of PC, Internet companies in China are playing a role of learning, changing and catching up. Even thought we bring in new concepts from outside, we still pushing the pace of innovation and revelation in this region (Fig. 7).

Fig. 7. The screenshots of Baidu, Yahoo, Naver, Google

The decade after Baidu successfully went public is also the prime ten years of China Internet development. Since Internet has become the catalyst of China economy, in 2015, China government came up with "Internet +" strategy. In short, the goal is to encourage Internet enterprises to reform traditional industries and get rid of inefficiency and low-marketization. China traditional industries have two characteristics, which makes O2O fit all needs: at first, high cost of obtaining customers. Advertising investment from traditional industries takes up more than 50 % of Baidu's annual revenue, while their understanding of Internet stays superficial as website display pages stand for all. Suppose user A wants to learn English, if he or she searches key words "English training", and gets into a website of English Training School B, online service IM and promotion information show up, customer service Rep needs to use all the means to lead user to offline experience, and it is not 100 % certain that this user will actually pay. No matter how is the conversion rate, the expense of a big service team is a huge cost. Secondly, information asymmetry between online and offline, which is harmful to competitiveness of the product on marketplace. Suppose user A wants to apply for a 100,000 CNY loan, he or she needs to go to each bank and consults in person, then compares various offers. If user A can get on to a financial platform and search loaning plans accordingly, fill in and submit application forms online for banks to evaluate risks, and receive feedback plus loaning offers, at the end, user A can quickly go through decision making process, goes to the chosen bank offline and to finish last step of withdrawing money.

With the development of mobile end in the time of O2O, online service can solve multiple-scenario problems, improve conversion rate, match up offline service, and reduce operation cost while enlarging margin. The core value of O2O is to expand user

behavior chain, and impact every steps alternately, to improve user agglutinant, to bring more "cross-subsidies" value, to build a certain product ecosystem.

3.2 Setbacks and Blocks of Design Education

We stepped into many design colleges and universities, such as Tsting hua University, the China Academy of Art, Renmin University of China, for discovering the design education was walking in front of the industry development, which would give us new surprises. However, design education in China is moving forward very slowly, there's a big gap between school education and needs from coperations. As I mention in the first part above, our professional knowledge structure is evolving with the developing and reforming of user experience. Nowadays, it's common of designers working in different disciplines from their college majors. Meantime, curriculum is mainly based on traditional graphic design and art education, theory is more than practice, especially lacking adaptive abilities. The urgent demand of user experience talent caused by Internet development makes this contradiction even more intense.

How about user-experience-oriented professional education? Will it fix the missing part of current design education? I'm afraid it only backfires. Tarena, a NASQ public company, its expertise is internet-related training, it is also the biggest design training organization in China. The main part Tarena's UI training class is Adobe, teachers train students how to use all kinds of design softwares with product case studies. In this way, Tarena attracts students with Adobe certification test. Mastering design software is only a basic technique of a designer, adaptive capability and professional enhancement cannot be acquired via short-term immersive and speculative training. A more severe question is the lectures in design training industry are not Internet practicers, do they really understand the true demand and changes of market (Fig. 8)?

3.3 O2O Revolution in Design Education

We have done a cool thing in 2015. We established online school "Baidu UE Classroom", to explore innovation of online education and promote reform of design training. Within a short time of 3 months, more than 40,000 students enlisted, this is the number of students in a tier-one China university. How did we accomplish this? First: the rising of online education platform. Baidu is an enormous platform product, Baidu Chuanke.com was given birth to focus on online education along vertical process. As C-end designers, we provide high qualify content, and complete teaching functions on the platform, which enables Chuanke.com to enclose user value loop with high speed and low cost. Second: shareable Economic Storm. There is a set of mature criteria of position ranking inside Baidu, it requires designers to sort out and summarize concepts, methods and innovation in work on annual base in order to participate job evaluation. Besides, Baidu offers designer improvement classes for the growth of design team. As long as we convert these useful materials into videos (record + live) and share on online platform, users can learn with us on Internet. Of course we are trying a deeper engagement solution, we are going to make a set of standards and matching system, open upload interface, to let designers get access to related content. It's a win-win for both designer
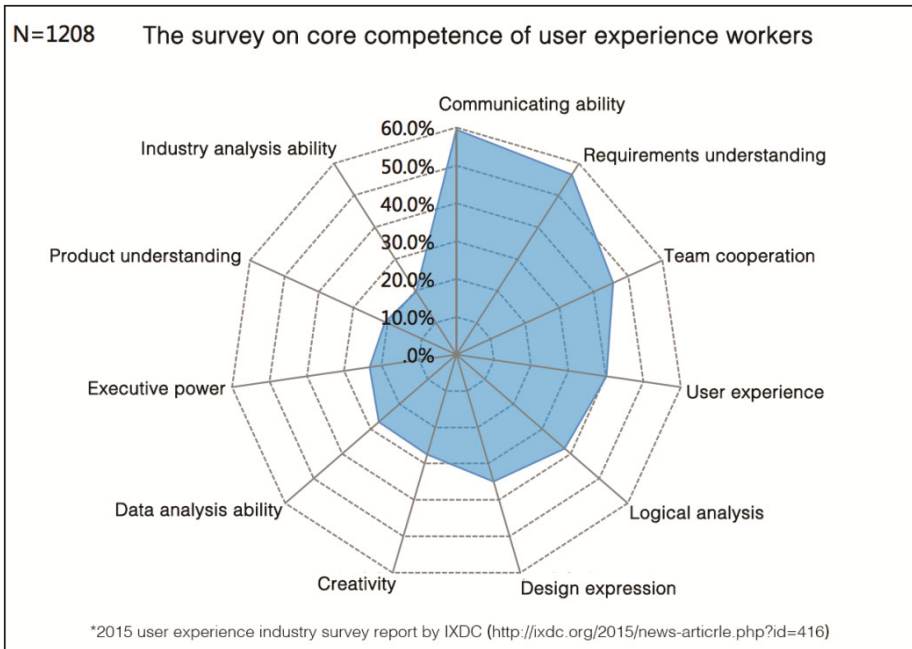
Fig. 8. The survey on core competence of user experience workers

and learners, they can optimize value of obtained knowledge and maximize market response. On the other hand, it urges designers to refine and systemize work experience. If we can achieve profit realization value based on this experiment, it would be a success of shareable economy (http://zt.chuanke.com/html/2015/daue/index.html).

But our breakthrough cannot change the whole industry fundamentally. According to the analyst above, traditional education won't collapse in one second and markets won't shuffle the cards automatically. "Everything real is rational", it's not always true. So we use O2O solution to extend user scenario, to find complementary points between online and offline. The biggest hardship of schools and training organizations is content, second teachers quality. Their biggest advantage is quality control of offline teaching, second immediate and customized teaching services. Baidu export personalized course outline and content, lectures from training organizations to teach, learners use online lessons for complementary review, or taking part in live class teaching by Baidu designers at spare time. To deliver class offline, to complete lessons online, add up into a comprehensive O2O education solution. Baidu has signed frame work agreement with several universities and training organizations, to export knowledge and capability models (divided into 3 levels) of various disciplines. Content is standardized into: key knowledge definition, explain sample, adaptive sample, combined knowledge sample, practical case study, etc. Modularized and standardized solution brings in better online design training, and easier to connect to offline services. For instance, we implant lots of case explanation in live lessons, C-end users can share more practical case study as well.

Fig. 9. The brand VIS of Baidu UE classroom

Baidu UE Classroom is inspiring and motivating to in both near and longer future. We will insist to input more resource, and striving to do a better job. What's more, the process of starting from zero, of building and furnishing this Classroom, is another surprising achievement along the way. We believe service design is the core motivation of O2O time by exploring profitable value of user experience and bringing in innovative design solutions. Service design is the "Destination" of user experience's path.

4   The Future of User Experience: Service Design Revolution

Service Design is not a new concept, it came up earlier in the 90s of 20th Century. At the beginning of 20th Century, a famous American user experience design firm IDEO promoted its methods and drove it into a system with methodologies like emotional design and experience design research. What I'm going to share now is basic experience, not specific application of methodologies. I cannot create a completely different way, my experience is based on the thinking of rebuilding product ecosystem by using service design, in this way to create new service touch points and paths, to search for new possibility of better service design.

Experience One: focus on brand, but focus more on brand operation. As we all know, service design is targeting to a multi-role and multiple scenario system, especially during the constant jumping between online and offline. Users with different natures will have differentiated feedback, emotions and feelings, no matter how, we need to ensure that all recognition of value is concentrated on the brand, rather than get diluted by complex scenario and multiple individuals. At the begging of Baidu UE Classroom, we spent big amount of time and money to establish our visual identify system (VIS), to set the tone of brand via basic colors, logo, slogan etc. and utilize the asset in all service touch point and operations. In order to upgrade service touch points into brand touch points, VIS is implanted both online and offline, from cover page of lessons, video posters, to campus

campaigns, U fans open days, design experience classes, covering all the user interactive media (clicks, visual rest, conversation) (Fig. 9).

Experience Two: Channelization and Digitalization of User Information. It's necessary to build channels "arrive to" users, the ultimate goal off all design is to increase users' amount via channels. The premise of create better participatory service design is to get to know your users, be more accurate on users needs and feedback, use design to improve service quality and status. Digitalization stresses data dimensions, which helps to evaluate user loyalty, and to build user pyramid. We abandoned traffic and PV/PU as product benchmark from the very first day of UE Classroom, instead, we leverage numbers of learners (users that actually watched video), numbers of loyal users (users that collected schools), numbers of active users (users that comment on lessons) as three index, and we built three channels accordingly: in-station mail, Wechat public account, and QQ group. These three channels lead us to actual users, helps collect user feedback and suggestions, and validate new service and product design.

Service design is not only to design a specific "service", from a higher point of view, it should be a systematic product design, including brand, users, products and service, all these connections makes up into a new pattern of optimizing service value. Brand brings spreading of reputation, and attracts more users, while users come through an all-dimensional user-arriving channel. Participatory design will lead us to a treasure vault of business value by the path of consistent interactive product and service design.

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