

Studies on Pleasure Factors in Interactive Design

— An investigation of gender issues in the design of digital application

Politecnico Di Milano
Scuola di Design
Laurea Magistrale in Design della Comunicazione
A.A 2014/2015

Relatore: Pillan Margherita
Studente: Wang Xiaojiao 780481

Index

Abstract	10
Chapter I: Introduction	
1.1 Gender differences	12
1.2 Power of women	13
Chapter II: Basic concept of pleasure	
2.1 Definition of pleasure	17
2.2 Ways to generate pleasure	17
2.3 Classification of sense of pleasure	18
Chapter III: Research on interactive design	
3.1 Definition of interactive design	21
3.2 Objectives of interactive design	22
3.3 Development of interaction design	23
3.3.1 Human-object interaction	
3.3.2 Human-computer interaction	
3.3.3 Brain-computer interaction	
Chapter IV: Researches on pleasure in interaction design (A Case Study of Chinese girls)	
4.1 Norman's emotional design model	27
4.2 Visceral level	30
4.3 Behavioral level	42
4.3.1 Function	
4.3.2 Understandability	
4.3.3 Usability	
4.3.4 Physical feel	
4.4 Reflective level	52
Chapter V: Case study	

5.1	Life of Chinese women	54
5.2	What Chinese women are concerned with	55
5.2.1	Women's magazines survey	
5.2.2	Women's apps and websites survey	
5.3	Women's health app: Dayima	64
5.3.1	User analysis	
5.3.2	Interface analysis	
5.3.3	Functional analysis	
5.3.4	User-centered design of Dayima	
5.4	Photographed app: Meitu xiuxiu	78
5.4.1	User analysis	
5.4.2	Interface analysis	
5.4.3	Functional analysis	
5.4.4	Usability design	
5.4.5	User experience advantage	
5.4.6	Peripheral product design	
5.5	Apparel web site: Meilishuo	97
5.5.1	User analysis	
5.5.2	Interface analysis	
5.5.3	Functional analysis	
5.5.4	Advantages and disadvantages of the user experience	
5.6	Food app: Xiachufang	110
5.6.1	User analysis	
5.6.2	Interface analysis	
5.6.3	Functional analysis	
5.6.4	Advantages and disadvantages of the user experience	
5.7	Social app: Lama bang	124
5.7.1	User analysis	
5.7.2	Interface analysis	
5.7.3	Functional analysis	
5.7.4	Successful image promotion	
5.7.5	Needs that Lama bang satisfies girls	

Chapter VI: How do interactive design products make Chinese girls pleasant

6.1	The selection of the target users: Young women are the main force	137
6.2	Interface	138
6.3	The product contents and product availability	140

6.4 Availability of products	146
6.5 Create unique brand image	147
Conclusion	148

Index Figures

Fig.1 Three levels of processing: Visceral, Behavioral, and Reflective	27
Fig.2 Norman's emotional design model	28
Fig.3 App Weather HD's interface	29
Fig.4 Chinese traditional red lanterns	36
Fig.5 Red Chinese knots	36
Fig.6 Different shaped package of dental floss	37
Fig.7 Round style room	38
Fig.8 Square style room	38
Fig.9 China's Mid-Autumn Festival and moon cake	42
Fig.10 China's Tai Chi	42
Fig.11 Screenshot of Wechat Shake	44
Fig.12 Maslow's hierarchy of needs	45
Fig.13 Screenshot of Weibo	47
Fig.14 Screenshot of iPhone icons when to be deleted	49
Fig.15 Motion Sensing Game	51
Fig.16 virtual kitchen	51
Fig.17 Advertising of Swatch	53
Fig.18 Chinese women's fashion magazine Ruli	57
Fig.19 Chinese women's fashion magazine Xinwei	57
Fig.20 Screenshot of Chinese dating site Baihe	61
Fig.21 Korean variety shows "Running Man"	62
Fig.22 Jung Da Yeon slimming gymnastic	62
Fig.23 Screenshot of Sohu portal, female channel	63
Fig.24 Screenshot of Rayli women website	63
Fig.25 Logo of Dayima	64
Fig.26 Screenshot of Dayima	67
Fig.27 Dayima use of color	67
Fig.28 Different skins and background of Dayima	68

Fig.29 Navigation mode of Dayima	69
Fig.30 Dayima menstrual record function	70
Fig.31 Dayima user's health record function	71
Fig.32 Screenshot of “Sisters' words”	72
Fig.33 Dayima version for couples	73
Fig.34 Dayima version for couples	74
Fig.35 Sunscreen Helper	75
Fig.36 Sunscreen Helper interface	75
Fig.37 Different shapes of Sunscreen Helper	75
Fig.38 Smart Body Scale “Latin”	76
Fig.39 “ No message” page	77
Fig.40 Dayima search page	77
Fig.41 Dayima women centered design	77
Fig.42 Meitu xiuxiu logo	78
Fig.43 Meitu xiuxiu logo's color	80
Fig.44 Meitu xiuxiu use of color	80
Fig.45 Meitu xiuxiu different theme settings	81
Fig.46 Meitu xiuxiu navigation model	81
Fig.47 Before and after comparison of auto enhance	82
Fig.48 Before and after comparison of filters	83
Fig.49 Before and after comparison of magic brush	84
Fig.50 Before and after comparison of auto retouch	85
Fig.51 Before and after comparison of slimming	86
Fig.52 Before and after comparison of taller	87
Fig.53 Before and after comparison of enlarger	88
Fig.54 Meitu xiuxiu collage	90
Fig.55 Meitu xiuxiu application of luck in love affairs	91
Fig.56 Meitu xiuxiu processing schedule indication	92
Fig.57 Meitu xiuxiu filtering special effects	92
Fig.58-59 Meitu2	94
Fig.60 Meitu kiss	95

Fig.61 Meitu 2	95
Fig.62 Meilishuo logo	97
Fig.63 Meilishuo use of color	100
Fig.64 Meilishuo first-grade navigation	101
Fig.65 Meilishuo broadside navigation	102
Fig.66 Meilishuo Screenshots	103
Fig.67 Meilishuo flipping of magazine page	103
Fig.68 Meilishuo big gun page	104
Fig.69 Meilishuo Coupon and Special Offers page	105
Fig.70 Meilishuo fan club page	106
Fig.71 Meilishuo individual page	107
Fig.72 Meilishuo show your list page	108
Fig.73 Meilishuo registration page	110
Fig.74 Xiachufang logo	110
Fig.75 Xiachufang page	114
Fig.76 Xiachufang use of color	115
Fig.77 Xiachufang navigation model	115
Fig.78 Xiachufang navigation model	116
Fig.79 Xiachufang latest trends page	116
Fig.80 Xiachufang trendy menu page	117
Fig.81 Xiachufang ranks page	117
Fig.82 Xiachufang menu page	117
Fig.83 Xiachufang reviews and upload work page	118
Fig.84 Xiachufang create menu function	119
Fig.85 Xiachufang search function	119
Fig.86 Xiachufang all categories	120
Fig.87 Xiachufang save page	120
Fig.88 Xiachufang shopping basket	121
Fig.89 Xiachufang store	122
Fig.90 Xiachufang discussion forum	123
Fig.91 Xiachufang my selection page	124

Fig.92 Lama bang logo	124
Fig.93 Lama bang advertisement	127
Fig.94 Lama bang logo	127
Fig.95 Lama bang page	127
Fig.96-97 Lama bang cartoon image “Lala”	128
Fig.98 Lama bang navigation model	128
Fig.99 Various types of “bang”	129
Fig.100 Global Travel	129
Fig.101 Various types of hot mom group	130
Fig.102 hot mom group chat	130
Fig.103 Lama bang attention function	131
Fig.104 User’s diary	132
Fig.105-106 Lama bang’s hot mom mall	132
Fig.107 Lama bang’s scores page	133
Fig.108-109 Lama bang’s party	133
Fig.110 Lama bang health-promoting video	135
Fig.111 Lama bang health-promoting seminary	139
Fig.112 Favorite decorations of Chinese girls	139
Fig.113 Photo stickers of Chinese girls	139
Fig.114 Sougou input software	139
Fig.115 Dayima’s cartoon image	139
Fig.116 A boy squat for his girlfriend to rest	142
Fig.117 Chinese boys take the bag and umbrella for their girlfriends	142

Index Graphic

Tab.1 Men's Favorite Colors	33
Tab.2 Women's Favorite Colors	33
Tab.3 Men's Least Favorite Colors	34
Tab.4 Women's Least Favorite Colors	34
Tab.5 Different gender preferences of form-sensory	40
Tab.6 Different gender preferences of form- Perceptive	40
Tab.7 Age range of female readers of magazines	55
Tab.8 Employment of female readers of magazines	55
Tab.9 What kind of magazine female readers prefer	56
Tab.10 What kind of magazine articles women prefer	56
Tab.11 popular apps for women, divided per category	58
Tab.12 TOP 10 favorite apps among Chinese girls	59
Tab.13 In TOP 20 popular apps for girls, the proportion of different content	60
Tab.14 The amount of everyday different web access of female users	60
Tab.15 Age of users	65
Tab.16 Users location	66
Tab.17 Users gender	66
Tab.18 Analysis on active user number of similar App by December, 2014	78
Tab.19 User gender	79
Tab.20 User age	79
Tab.21 Meitu xiuxiu Operation Flowchart	82
Tab.22 curve graph of recalling rate and accuracy rate	89
Tab.23 User gender	98
Tab.24 User age	98
Tab.25 Time of using of Meilishuo	99
Tab.26 User gender	111

Tab.27 User age	112
Tab.28 User professional	112
Tab.29 Changes in eating habits	111
Tab.30 Time of use the food app	112
Tab.31 User age	124
Tab.32 User's city top 5	125
Tab.33 Time of use Lama bang	125
Tab.34 Age range of internet female users in China	136

Abstract:

The difference between men and women in behavioral habit and psychological demand brings interaction design experience huge differences as well. Designers gradually shifted their attentions from product function to target customer and user experience. For this reason there's been recently a great increase in the amount of ladies-oriented products. Women constitute groups worthy of notice thanks to their number, purchasing power, and network using habit, especially in app. Currently, in this field, we have seen plenty of products specialized in female products, such as "Etsy", "Pinterest", "My Virtual Boyfriend", etc.

Chinese girls' cultural background is very different from Western girls'. While Chinese economy is growing quickly, Chinese young people struggle between the acceptance of the modern Western culture and Chinese traditions. This is why Chinese female users have some specific psychologic needs that interactive products try to satisfy.

I want to research the emotional model for interactive design that allows to analyze the features of interactive products designed for women. My purpose is to figure out what kind of interactive design brings Chinese women the sense of joy, and to summarize its rules.

Abstract:

La differenza tra uomini e donne per quel che riguarda abitudini comportamentali e necessità psicologiche fa sì che anche l'esperienza di interaction design sia soggetta a enormi differenze. I designer hanno gradatamente spostato la loro attenzione dalla funzione del prodotto al target di clientela e alla user experience. Per questa ragione recentemente si è avuto un grande aumento nel numero di prodotti pensati per un pubblico femminile. Le donne costituiscono un gruppo di notevole importanza per via del loro numero, potere di acquisto e abitudini di utilizzo della rete, specialmente per quel che riguarda le app. Al momento, in questo campo, esistono molti prodotti specialmente pensati per un pubblico femminile: [“Etsy”](#), [“Pinterest”](#), [“My Virtual Boyfriend”](#), ecc.

Il background culturale delle ragazze cinesi è molto diverso da quello delle donne occidentali. L'economia cinese sta crescendo velocemente, ma i giovani cinesi sono combattuti tra l'accettazione della cultura moderna occidentale e le tradizioni della Cina. È per questo che le utenti cinesi hanno bisogni psicologici specifici che i prodotti interattivi tentano di soddisfare.

Il mio scopo è trovare un modello emotivo di interactive design che consenta di analizzare le caratteristiche dei prodotti interattivi progettati per le donne, quindi individuare quale genere di prodotto interattivo soddisfi maggiormente le utenti cinesi e infine riassumerne le regole.

Chapter I: Introduction

1.1 Gender differences

The most primitive and essential difference between men and women lies in the divergence of physiological structure, which originates from natural labor division of reproduction. Women naturally play a leading role in reproduction of human beings, shouldering a main responsibility in breeding and bringing up. Such natural division of labor between men and women is constantly propagated, expanded, extended and developed in social labor division, forming the disparity between male and female in value relationship, which then further constitutes the psychological difference between male and female.

With the development of social productivity, material products are becoming increasing more diversified. On the other hand, population size and quality are growing continually as well. Accordingly, women spend more and more time and energy on breeding and raising children, which in return gradually expands the labor division and cooperation of reproduction between male and female in aspect of time and space, and spreads male-female difference in all fields and the whole process of life. With the constant improvement of labor skills, social labor division between men and women also became increasingly more precise, forming the production and living mode of “breadwinning men and homemaking women”. Owing to the increasing clearer difference between men and women in value relationship, increasing more significant psychological difference is also gradually formed. Such difference gradually extends to all fields in social life. The formation of private ownership urges women’s value relationship to be affiliated to men’s value relationship, so that women derive a series of psychological emotions, such as dependency, inferiority, obedience, jealousy, vanity, conformity, etc. On the other hand, men also generate a series of corresponding psychological emotions, such as self-confidence, dominance, possessiveness, rebellion, independence, etc.

The greatest challenge in human-computer interaction (HCI) is human factor. Compared with computer, human beings are much more complicated. As there is huge physiological and psychological difference between men and women, users of different gender have significantly different demand on product appearance, color, interaction purpose, interaction mode, and function.

For example, with respect to the reason for visiting Facebook, there is disparity between users of different gender.

The difference between men and women in behavioral habit and psychological demand brings interaction design experience with huge difference as well. Designers gradually shifted their attentions from product function to target customer and user experience. As for this, many interactive experience products oriented on women spring up like mushrooms. Women are population groups worthy of being noticed in aspect of base number, purchasing power, and network using habit, especially in app. Currently, in this field, we have seen plenty of products specialized in female products, such as “Etsy”, “Pinterest”, “My Virtual Boyfriend”, “What I wore Today”, “Joyus”, “Spanx”, “Foodspotting”, etc.

I hope to research the emotional model for interactive design to analyze the features of interactive products designed for women, so as to figure out what kind of interactive design brings women with the sense of joy, and to summarize the rules.

1.2 Power of women

In accordance with biological sex and ideological characteristics, feminism may be divided into two major branches. One branch is divided according to biological sex, such as feminism, which rules out all men. This is early stage feminism, with Beauvoir, Helene, and Irigaray as the main representative personage. The other branch is divided by ideological characteristics, which may include men (for example, when a man is considered with feminism ideological characteristics). This is post-modern feminism, with Lacan, Kristeva, and Butler as the representative personage.

With the development of interactive design, femininity is gradually affecting the common ideological characteristics of men and women in this era. 1. Experience-oriented design: men are better at left brain thinking, while women are better at right brain thinking. At present, interactive design takes user experience as the basis. Women are more emotional, and are more adept at experience, with natural advantages. The arrival of reading age is a significant mark of feminism. In *Picture Theory*, Mitchell analyzed that, in accordance with industrialization theory, “language is the essential attribute of human”, while “image is media of demi-human”. These demi-humans include “savages, as well as ‘speechless’ animals, children, women and mass”¹. With the development of multimedia technology, image is liberated, turning women from “demi-humans” into mainstream humans. 2.

1 W.J. Thomas Mitchell, *Picture Theory*, University Of Chicago Press 1995.

Emotional thought: emotion is widely recognized ideological characteristics of female. Nowadays, on the Internet, emotion is no longer a legend. Facebook is just a platform taking love, rather than selfishness, as the link, which connecting people altogether. Facebook and MySpace demonstrate the difference between paradise and hell. The former is designed for acquaintances, while the latter for strangers. The major difference between acquaintance and stranger lies in emotional depth. In places with higher emotional concentration, women always play a leading role.

According to Phil Mark, Co-founder of Applified, Facebook was much too feminized. "Social network's being established on sharing is apparently a feminized thought²." Phil's Applified hang out the catchword of "no entry for non-males". This real men's social network website decided to completely ignore female users. Before that, Phil's first try was a mobile social network application for males, named Jaxx. Male users may share their mood via offline activities to keep male friendship.

Phil's opinion might make you feel rather confused. Is Facebook really excessively "feminine"? There are still 8.5 million male users on Facebook enjoying the pleasure of "Love" button and looking for friends. The only thing consisting with the fact is that, female users are becoming the majority: 58% users of Facebook are female, who contribute 62% data flow of the website, such as status update, comment, etc. Averagely, female users have 8% more friends than male users. According to a research report named *Women are Surfing the Internet: How do Women Affect the Internet* and released by a Market Research Company named ComScore, females spent 30% more time on social networks than males³. Shown by Nielsen's survey, female users accounted for 55% of all mobile social network users. In China, shown by data released by Renren, although male users are 10% more than female users, with superiority in quantity, female users' activeness and contribution are still higher than that of male users.

Since the continual popularization of Facebook, female users' status on social networks is more and more appreciated. Hu Meng, Product Manager of SNS Product Department of Renren, mentioned that, the explosive growth of mobile network in 2010, especially the outbreak of mobile SNS products, had high-lighted feminine characteristic. WeChat and Momo were no doubt typical instances and beneficiaries of the characteristic. Zhang Xiaolong, Product Manager of WeChat and Vice President of Tencent, claimed that, half users of WeChat were female. "The core users of SNS products are young females, who show great passion to

2 Feminine mobile Internet, <http://www.alibuybuy.com/posts/84764.html>

3 ComScore, How do Women Affect the Internet, 2010

communication, relation, emotion, and aesthetics. More intuitively, female users' recognition on emotional design of products exceeds product function⁴."

Females loving communication and shopping also contribute their full zeal to e-commerce. According to the data from Gilt Groupe, a US Shopping Website, female customers accounted for 70% of its customers group, and 74% of its income. 77% customers of Groupon, Originator of Group Purchase, are female. In China, among traditional customers of Taobao, the proportion of males is slightly higher than that of females. However, on mobile networks, the situation is quite different. For merely a year, male-female ration on wireless Taobao took on a great reverse. The consumption amount of female customers grew sharply, becoming the main force of mobile Taobao. Even on Jingdong, an e-shop started with 3C products loved by male customers, the proportion of females also slightly surpassed males.

However, even more radical changes happened in fields related with images. On one hand, the mode of interpreting data with "illustrations" became unprecedentedly popular. Consulting companies and media successively evolved Arabic numeral reports and dull charts into vivid and lively images. On the other hand, image-based SNS and shopping websites with Pinterest, Instagram, Fancy, Path, Meilishuo, and Mushroom Street as representatives sprang up like mushrooms, with great success achieved. Taking Mushroom Street as the example, the company had been established for no more than two years. However, it brought Taobao with 800 thousand to 900 thousand's daily cash flow, 5 million trade volume, and obtained more than 100 thousand's commission from Taobao. If you are male, and plan to register on Meilishuo or Mushroom Street, you should be mentally prepared: you may be rejected from the registration, be tricked to post a micro blog concerning your registration on Meilishuo, or be fouled by unexpected female visitors and the pink girl avatar. When male users are labeled with the opposite sex without rhyme or reason, whether they would think: "when has default gender become 'female'?"

Maybe you might think that, all these websites are constructed to cater to female users. As most users are female, it is reasonable that the default gender is set to be female. Then, how about game field? Mobile game becoming hot in recent years is a good example: among all users of mobile SNS game company Zynga, 60% players are female. Shown by data of PopCap, female players have become the majority in SNS and leisure games. You should know that, female customers are valuable resources to many companies. There is data from 51.com proving that the value of

4 Zhang Xiaolong, Wechat simple beauty, Machinery Industry Press, 2010

one female is equivalent to ten males. Liu Nanshan, COO of Zhangwoo Technology and former Senior Operation Manager of Tencent SNS Division, even shouted that: “Women are the world.” Cooga Coupon, an application product of the company, has sixty percent female users.

Zhang Xiaolong, Product Manager of WeChat once said: “If you are not incisive to female psychology, you lose half of the users. As for this, our product managers are reading a book named *The Descent of Woman*⁵.” WeChat Product Team headed by Zhang Xiaolong had noticed the influence of female psychology on product in product design. They verified the influence and earned benefit from it.

Rationality and function are left brain concerns of men. By contrast, emotion and experience are right brain thinking mode, which women are better at. “The essence of feminization is right brain transformation, with emotional thinking surpassing reasonable thinking.” As for this, in order to be successful in interactive product, it is necessary to study female users’ psychology and demand. The rising of website and application conforming to female characteristic and preference or specially designed for females has proved that, females are motivating interactive products to transform from “reasonable and functional” to “emotional and experience-oriented”.

5 Zhang Xiaolong, Wechat simple beauty, Machinery Industry Press, 2010

Chapter II : The basic concept of pleasure

2.1 The definition of pleasure

Numerous psychologists gives different classification of emotion, while they regarded pleasure as the most fundamental and primitive emotion, which is a major positive emotions.

Many psychologists defined pleasure from their different view, while pleasure is defined by "Oxford Dictionary", in the state of sober or conscious, feel fun, delight, satisfaction and joy. Professor Meng Zhaolan defined pleasure in the emotional psychology, pleasure are those naturally generated, directly caused by nerve and brain activity positive emotional responses, which causes the thrill and even satisfaction⁶. Famous psychologist Donald Norman described in his "the Emotion Design": the beauty, fun and happiness produce feelings of euphoria together, the joy is a state of positive emotions⁷. From a physiological standpoint, pleasure is refers to the outside stimulation on the brain, causing nerve impulses to the brain cells of positive emotions.

Integrated some psychologists point of view, happiness is caused by something and people's psychological cognition, produced by external stimuli, positive emotions, such as happy, interest, enthusiasm, cheerful, confident, etc.

Pleasure, is essentially a spiritual experience. It is characterized by a kind of mood, and characterized by a kind of emotion. Cheerful mood is to need (especially physical need), the body's activity, associated sensory perception, pleasure does not always exist, it will be as the changes of the situation or the meet of need weakening and loss fast, and thus also with impulsivity and chance.

2.2 The production of pleasure

There is a set of circuits in our brains, and its related structure includes: the ventral tegmental area (VTA), ventral septal nuclei (NAC) and the prefrontal cortex. External stimuli and behavior will effect in the ventral tegmental area of the brain, and then the message go through the nerve fibers to ventral septal nuclei and the

6 Meng Zhaolan Emotional Psychology, Peking University Press, 2005

7 Donald Norman, The Emotion Design, Apogeo Education, 2013

prefrontal cortex, while increased dopamine in the brain, causing pleasure.

Dopamine is a brain secretion, belongs to the neurotransmitter, which can affect a person's mood. The cerebral endocrine is mainly responsible for passing the flesh, feeling, excited and happy message. In theory, increasing the material can make people exciting, even addictive. Just like smoking, it is the same as the pleasant sensation from alcohol. And the sweetness of tasting chocolate, the experience of happiness in love, is almost the same mechanisms at work. But a person can never in the peak of the tachycardia state, so strong secretion of dopamine, can make the person of the mind from sensations of fatigue. The neurotransmitter dopamine is as a fuel. It can be "toward the goal of enthusiasm," the neuroscientist Panksepp of Washington state university writes⁸.

However people are willing to fall in this state. When we find out something, that feeling is very good, we will make the system running, "like we search on Google one by one, even though we are aware of these information is not that important and we should stop." As long as you sit there and your desire to continue will continue to produce. , "Berridge explains⁹.

2.3 The classification of pleasure

Famous psychologist Ekman classify the pleasure into 16 kinds, first of all is the joy of the five senses (sight, touch, hearing, taste, and smell), such as something it feels very comfortable, the wave sounds very relaxed, and most people prefer sweet taste, while they requires a period of time to use to acid, bitter, spicy things. Other 11 kinds of pleasure are, happiness, satisfaction, excitement, relieved, surprise, ecstasy, proud, delighted, respect, gratitude and crow over.

Amusement

One of the simplest enjoyable emotions is *amusement*. Most of us like to be amused by something that we find funny; some of us are very amusing, with jokes effortlessly flowing forth. Large parts of the entertainment industry are dedicated to bringing forth this emotion, so we can easily choose when we want to be amused. Amusement can vary from slight to extremely intense, with peals of laughter and

8 Jaak Panksepp, The neurobiology of positive emotions,2006

9 Kent C. Berridge, Morten L. Kringelbach, Pleasures of Brain, Oxford University Press, 2010

even tears.

Contentment

When everything seems right in the world, when there is nothing we feel we need to do, we are contented or, in the vernacular, we are laid-back, for those moments.

Excitement

Excitement arises in response to novelty or challenge. Excitement has its own unique flavor, different from any of the other enjoyable emotions. Although it may be felt alone, it often merges with one or more of the other enjoyable emotions. It is not easy to specify a universal excitement trigger or theme. For example —downhill skiing, shooting stars—are probably, for some people, terrifying. There is often a close relationship between excitement and fear, even if the fear is only vicarious and not brought about by actual danger.

Relief

Relief often accompanied by a sigh, a deep inhalation and exhalation of breath, is the emotion felt when something that had strongly aroused our emotions subsides. We are relieved to find out the test for cancer was negative, to find our child who was lost for a few minutes in the mall, to know that we passed a difficult test on which we thought we might have done poorly.

Wonder

The defining characteristics of wonder are its rarity and the feeling of being overwhelmed by something incomprehensible. It is an intense, intrinsically enjoyable state. Nearly anything that is incredible, incomprehensible, and fascinating can be a source of wonderment.

Admiration

Admiring people or finding them inspiring or charismatic generates feelings that are related to wonderment, but admiration does not generate the same internal sensations as feeling wonder—the goose bumps, respiration changes, sighs, or head shakes. We want to follow inspiring people, we feel attracted to them, but when we feel wonder, we stand still, we are not impelled to action.

Ecstasy

Ecstasy or bliss, that state of self-transcendent rapture, achieved by some through meditation, by others through experiences in nature, and by still others through a sexual experience with a truly loved one, can be considered another enjoyable

emotion. Similar to excitement and wonderment, ecstasy is an intense experience, not something one can experience in small amounts, just slightly.

Fiero

Fiero requires a difficult challenge, and a very good feeling one has about oneself at the moment of accomplishment. Triumph would not be the right word to describe this emotion, because that implies winning a contest, and that is only one of the contexts in which fiero will be felt.

Naches

How do you feel when you hear that your son or daughter was accepted by the best college, performed beautifully in a recital, got an award from the scout troop, or accomplished anything else that matters? We could say proud, but it isn't specific enough to the pattern of physical sensations parents feel when their child accomplishes something important, perhaps even exceeding the parents themselves. In Yiddish, however, there is a specific word for just this experience: naches.

Elevation

Anthropologist Jonathan Haidt has suggested that what he calls elevation be considered another one of the enjoyable emotions. He describes it as "a warm, uplifting feeling that people experience when they see unexpected acts of human goodness, kindness and compassion." When we feel elevated, we become motivated ourselves to become a better person, to engage in altruistic acts.

Gratitude

Richard and Bernice Lazarus describe gratitude as "appreciation for an altruistic gift that provides benefit." They point out that when someone does something nice for us, and it is an altruistic act, not one that seems to benefit them, we are likely to feel gratitude.

Schadenfreude

The feeling you experience when you learn that your worst enemy has suffered may also be enjoyable, a different kind of enjoyment than the ones we have considered so far. In German it is named *schadenfreude*. Unlike the other enjoyable emotions, *schadenfreude* is disapproved by some, at least, in Western societies.

Chapter III: Research on Interaction Design

3.1 Definition of Interaction Design

As an emerging subject that focus on interactive experience, interaction design turned up in the 1980s when Bill Moggridge, one of IDEO's founders, first realized that the software interface shared an equal importance with industrial design. He named it SoftFace at a design Meeting in 1984, and then renamed is as Interaction Design.

Interaction design master Alan Cooper believes that interaction design is the behavior of artifact, environment and system, as well as the design and definition of shape elements that convey this behavior¹⁰. First, interaction design plans and describes the behavior and manners of things, and then describes the most effective manner of conveying this behavior. Based on user experience, human-computer interaction design is to consider the user's background, using experience and feelings during operation. By doing so, designers are intended to design product that will meet the needs of final users so as to ensure that the final users can use the product pleasantly, effectively and efficiently, as well as in accordance with their own usage habits.

Interaction design originates in psychology, computer, industrial product design, visual design and other fields. Specifically, interaction design is the design regarding human "behavior". For Internet products, you can tell the computer to finish a search either through entering the web address and pressing the Enter button, or, of course, through the non-input manner of scanning the QR code by cellophane. This kind of behavior of interactive modes between human and computers is the core of interaction design. In the course of human-computer interaction, it is surprising whether the process is successful, convenient and interesting. User's operation feeling is the user's experience of the product. This kind of user experience directly affects the user's impression and emotion of the product. Therefore, in order to create a product with high customer loyalty and satisfaction, designers must get to know what kind of interaction behavior brings more satisfaction to the user.

10 Alan Cooper, About Face: The Essentials of User Interface Design, 1995

3.2. Objectives of Interaction Design

The objectives of interaction design include two major aspects: the availability objective and the user experience objective. Availability is a basic and important indicator of interaction design, it is the overall evaluation of the availability, and also a quality indicator to measure whether the product is effective, easy to learn, safe and efficient from the user's point of view. However, the objectives of interaction design are more than this. They also include the consideration of user expectations and experience. Availability ensures product usability and the completeness and convenience of its basic functions, while the user experience is to give the user some distinctive or unexpected feelings. That is to say, availability is what the product should manage to do and user experience is the extra surprise and harvest.

Of which, availability objective includes: feasibility, effectiveness, security, generality, learnability and memorability.

Feasibility

Feasibility is the most common and the most basic objective. It refers to whether the product is "feasible" or not. That is to say, whether the user can achieve his intention through the product and the degree of intention achieved.

Effectiveness

Effectiveness refers to whether the mode of product supporting user is effective or not when the user performs a task in order to avoid tedious operation.

Security

Security is to protect the user from errors as well as unpleasant situations. Products should be able to avoid damage caused by the user's accidental activities or misuses.

Generality

Generality refers to whether the product provides the correct functional interface, so that the user can do what they need or want to do.

Learnability

Learnability refers to the difficulty level of learning and using the product. For any product, the user always wants to be able to start immediately and without too much effort.

Learnability

Learnability refers to whether the user is able to recall the usage quickly after

learning to use a product. If the operation of the product is vague, illogical, or unreasonably ordered, then it may be hard to remember, and the user will often need help.

User experience refers to the feeling of the user when interacts with the system. Subjective terms are used to describe the essence of user experience, such as: satisfying, enjoyable, interesting, thought-provoking, full of beauty, creativity-stimulating, sense of accomplishment, emotional satisfaction and so on.

3.3 Interaction Design Development

With the development of Internet and new technologies, there are more and more new products and interactive modes, and people are paying more and more attention to interactive experience. Interactive devices have developed from punched tapes, panel switches and display lights in the early stage to today's interactive devices with a variety of perceptual skills such as eye-tracking, voice recognition, touch feedback and augmented reality, etc., and to virtual reality of the future. The interactive experience of products has always been changing. The development of interaction design is generally divided into the following three phases: human-object interaction, human-computer interaction and brain-computer interaction. At present our product interaction design is mainly concentrated on the second stage.

3.3.1 Human-object interaction

Human-object interaction refers to the interactive behavior of human with the product itself; the interaction object is the product, such as hardware tools, toys, and instruments, etc. Such interaction is more intuitive, and mainly refers to the direct physical contact with the product. Besides, the interaction between people and product is also more in line with people's cognitive habits, thus interactive obstacles won't occur under normal conditions. Strike with a hammer, twist with a screwdriver and look through the lens of the magnifier to see magnified objects. All these interaction designs belong to the category of hardware design or industrial design, which have certain requirements to product process and metaphorical mapping when considering whether the shape conforms to people's usage habits and operation comfort.

3.3.2 Human-Computer Interaction

Human-computer interaction (HCI) is a means to establish communication links as well as a process of transmitting and exchanging information between human and electronic products. Due to the presence of human-computer interaction interface in electronic products, the basic interaction process is a process of inputs and outputs through this interface. This is an indirect interaction with the human-computer interface as the medium. Human consciousness and instruction are input via the human-computer interaction interface, and then the feedback is output through this interface after the product receiving the input. I will talk about the human-computer interaction in the following ways according to its input and output distance.

a. Interaction through the product itself

Due to the nearest distance to the interaction object, the most direct interactivity and the relatively low learning cost, this kind of interaction is relatively easy for the user to grasp. Especially for electronic products, the presentation of all contents and performance of all functions all depend on the I/O interface. This kind of interaction is generally realized through guiding people to find the operation rules by taking the I/O interface on the product as the interaction object and the physical interface as the interaction interface. Such as switches, buttons and touch screen on electronic products such as the calculator, instrument and mobile phone. The interaction of switch is single and effective, and purpose-oriented but not rich enough. Many functions cannot be determined by the simple 0 and 1. Buttons can provide direct and effective instruction starting mode so as to easily avoid ambiguity. However, buttons cannot meet the requirements of high-precision positioning quickly. The emergence of touch screen greatly optimizes the user's interactive experience. Not only the display contents can change with the screen, but also the positioning is relatively convenient and easy to learn either by hands or by the stylus. As a result, many portable devices now adopt the touch technology as the preferred interaction mode.

b. Interaction through the controlling device connected to the product

The emergence of controlling devices connected to the product frees people from the product itself, and focuses more on user experience. This kind of methods

include: remote console, handle, remote control, keyboard and mouse, etc. Due to the deviation caused by distance, the human-computer interaction process is not natural. Moreover, long-term and repeated operation of the controller is likely to lead to diseases such as "mouse hand" and "handle finger" caused in the process of operating computers.

c. Remote interaction with the product directly through human body

The basic human sensory perception can be divided into vision, hearing, olfaction, taste and touch. Human can distinguish various attributes of external things through senses, such as the contents conveyed by sound, movement, texture, weight and smell, so as to form complex cognitive processes. We can say that the ultimate human-computer interaction is transmitted by induction, which is mainly manifested as somatosensory interactions including eye tracking, gesture recognition, voice control, touch interaction and geospatial tracking. It allows people to make better use of their own actions to issue instructions by infrared scanning, thermal sensing, voice and image recognition analysis, image tracking algorithm and space physics positioning technology, so as to achieve the perfection of human-computer unity.

For the pursuit of somatosensory interaction, we can get to know that from the game industry. Microsoft launched Kinect - the somatosensory peripheral of game machine XBOX360 in November 4, 2010. Kinect completely abandoned all external devices, and integrate somatosensory interaction into the player's life in a revolutionary way. It can identify not only the player's body movements, but also the player's voice. Although defects still exist in somatosensory interaction, such as insufficient accuracy, misrecognition and fatigue-prone, yet it is still the highest sense of the interactive experience of the human-computer interaction phase.

3.3.3 Brain-computer interaction

Brain-computer interaction includes mind control and brain virtual reality mind control mainly makes use of brain wave detection technology to establish brain-machine interaction, and then the machine detects the idea of the brain to predict the next action. Brain virtual reality is the ultimate experience mode existing in many science fiction films, that is to say, using computer to generate a variety of organ perceptive functions in order to let people immersed in the virtual world. In

this case, the primary interaction occurs between human brain and the perceptive functions of various organs. The electronic pulse or sensor transmits different perceptions to the human body through the brain, creating all kinds of wonderful lifelike experiences. Under the circumstances, people can interact in the brain without the physical object, and the magical and fascinating live experience it brings is also the ultimate objective pursued by user experience. This is a new technology of newly developed with far-reaching potential application direction. In movie "The Matrix", the Matrix is a huge network where the system assigns different roles to human. Placed in a vessel filled with nutrient solution, the human body is inserted with many plugs to accept sensory stimulation signals from the computer. Just relying on these signals, human lives in a completely virtual world created by computer...

Brain-computer interaction is still in its infancy. Due to the technical complexity and ethical controversy, brain-computer interaction is attention-grabbing. As a result, we can only find a little of their shadow in science fictions, movies, video games and some other entertainment. Just due to its double-edged sword effect, the prospect of this technology in the diplomacy, war, politics and religion fields is immeasurable, and its development in civilian use, life, communications and other fields is also worth waiting.

In general, the three interactive modes will not replace each other but with long-term coexistence and constantly intertwined development. With the in-depth understanding of interaction, and constant development of related disciplines such as machinery, electronics and computer technology, interaction design is playing a more and more important role in the information exchange between human and the outside world, and users will also truly experience the convenience brought by interaction progress.

Chapter IV: Researches on pleasure in interaction design

4.1 Norman's emotional design model

The computers and psychology professor of Northwestern University, Donald Norman, believes human behavior in the interactive process is caused by three different levels of the brain: the automatic, prewired layer, called the visceral level, the part that contains the brain processes that control everyday behavior, known as the behavioral level and the contemplative part of the brain, or the reflective level. Each level plays a different role in interactive process.

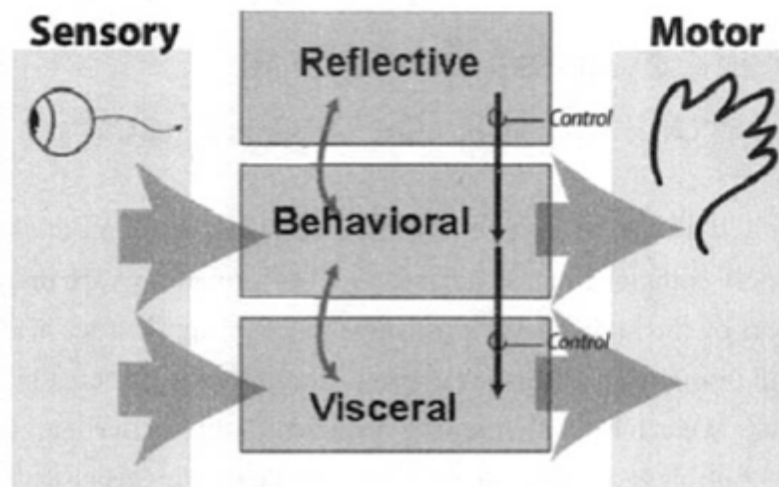


Fig 1. Three levels of processing: Visceral, Behavioral, and Reflective.

The three levels in part reflect the biological origins of the brain, starting with primitive one-celled organisms and slowly evolving to more complex animals, to the vertebrates, the mammals, and finally, apes and humans. For simple animals, life is a continuing set of threats and opportunities, and an animal must learn how to respond appropriately to each. The basic brain circuits, then, are really response mechanisms: they analyze a situation and respond. This system is tightly coupled to the animal's muscles. If something is bad or dangerous, the muscles tense in preparation for running, attacking, or freezing. If something is good or desirable, the animal can relax and take advantage of the situation. As evolution continued, the circuits for analyzing and responding improved and became more sophisticated. Put a section of wire mesh fence between an animal and some desirable food: a chicken

is likely to be stuck forever, straining at the fence, but unable to get to the food; a dog simply runs around it. Human beings have an even more developed set of brain structures. They can reflect upon their experiences and communicate them to others. Thus, not only do we walk around fences to get to our goals, but we can then think back about the experience—reflect upon it—and decide to move the fence or the food, so we don't have to walk around the next time. We can also tell other people about the problem, so they will know what to do even before they get there.

Animals such as lizards operate primarily at the visceral level. This is the level of fixed routines, where the brain analyzes the world and responds. Dogs and other mammals, however, have a higher level of analysis, the behavioral level, with a complex and powerful brain that can analyze a situation and alter behavior accordingly. The behavioral level in human beings is especially valuable for well-learned, routine operations. This is where the skilled performer excels.

At the highest evolutionary level of development, the human brain can think about its own operations. This is the home of reflection, of conscious thought, of the learning of new concepts and generalizations about the world.

The behavioral level is not conscious, which is why you can successfully drive your automobile subconsciously at the behavioral level while consciously thinking of something else at the reflective level. Skilled performers make use of this facility.

The ways in which the three levels interact are complex, but it is possible to make some very useful simplifications. The three levels can be mapped to Interactive product characteristics like this:

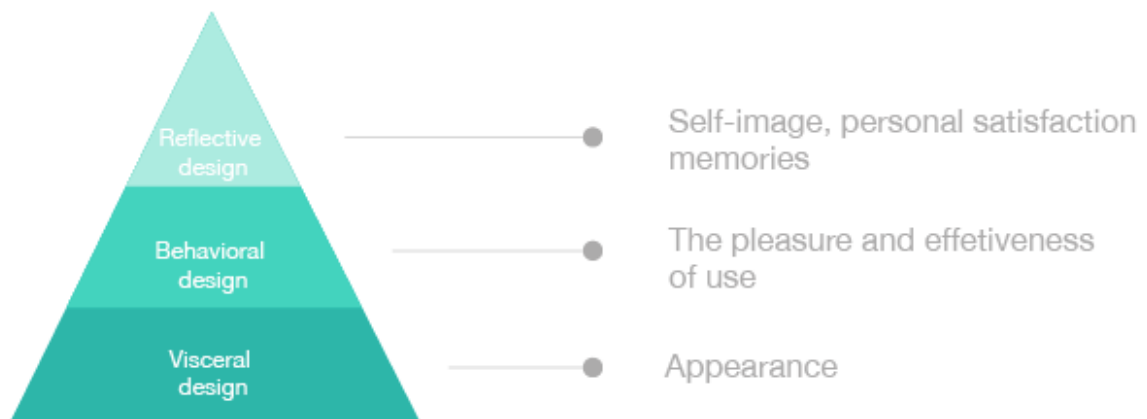


Fig 2. Norman's emotional design model

The visceral level is pre-consciousness, pre-thought. This is where appearance matters and first impressions are formed. Visceral design is about the initial impact of a product, about its shape, color and texture. Humans are visual animals, the observation and understanding of the shape is derived from instinct. Visual design is more in line with the visceral level, the more to be accepted and liked.

For example, Weather HD is a very popular iOS app, it is able to use the iPad or iPhone as a window to get into the beautiful weather conditions. It allows users to experience the feeling of being surrounded by nature. It simulates the real nature scenes, by using dynamic weather effects, allowing users to generate the pleasant feeling of being close to nature.

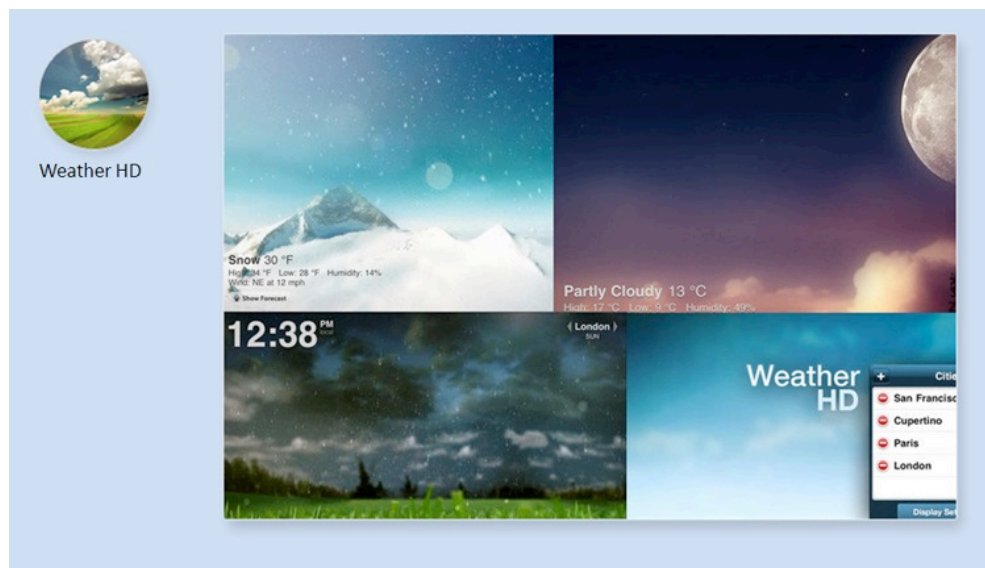


Fig 3. App Weather HD's interface.

The behavioral level is about use, about experience with a product. But experience itself has many facets: function, performance, and usability. A product's function specifies what activities it supports, what it is meant to do—if the functions are inadequate or of no interest, the product is of little value. Performance is about how well the product does those desired functions—if the performance is inadequate, the product fails. Usability describes the ease with which the user of the product can understand how it works and how to get it to perform. Confuse or frustrate the person who is using the product and negative emotions result. But if the product does what is needed, if it is fun to use and easy to satisfy goals with it, then the result is warm, positive affect.

It is only at the reflective level that consciousness and the highest levels of feeling,

emotions, and cognition reside. It is only here that the full impact of both thought and emotions are experienced. At the lower visceral and behavioral levels, there is only affect, but without interpretation or consciousness. Interpretation, understanding, and reasoning come from the reflective level.

Of the three levels, the reflective one is the most vulnerable to variability through culture, experience, education, and individual differences. This level can also override the others. Hence, one person's liking for otherwise distasteful or frightening visceral experiences that might repel others, or another's intellectual dismissal of designs others find attractive and appealing. Sophistication often brings with it a peculiar disdain for popular appeal, where the very aspects of a design that make it appeal to many people distress some intellectuals.

There is one other distinction among the levels: time. The visceral and behavioral levels are about "now," your feelings and experiences while actually seeing or using the product. But the reflective level extends much longer—through reflection you remember the past and contemplate the future. Reflective design, therefore, is about long-term relations, about the feelings of satisfaction produced by owning, displaying, and using a product. A person's self-identity is located within the reflective level, and here is where the interaction between the product and your identity is important as demonstrated in pride (or shame) of ownership or use.

4.2 Visceral Design

Visceral design is what nature does. We humans evolved to coexist in the environment of other humans, animals, plants, landscapes, weather, and other natural phenomena. As a result, we are exquisitely tuned to receive powerful emotional signals from the environment that get interpreted automatically at the visceral level. This is where the lists of features in chapter 1 came from. Thus, the colorful plumage on male birds was selectively enhanced through the evolutionary process to be maximally attractive to female birds—as, in turn, were the preferences of female birds so as to discriminate better among male plumages. It's an iterative, co-adaptive process, each animal adapting over many generations to serve the other. A similar process occurs between males and females of other species, between co-adaptive life forms across species, and even between animals and plants.

Fruits and flowers provide an excellent example of the co-evolution of plants and

animals. Nature's evolutionary process made flowers to be attractive to birds and bees, the better to spread their pollen, and fruits to be attractive to primates and other animals, the better to spread their seeds. Fruits and flowers tend to be symmetrical, rounded, smooth, pleasant to the touch, and colorful. Flowers have pleasant odors, and most fruits taste sweet, the better to attract animals and people who will eat them and then spread the seeds, whether by spitting or defecation. In this co-evolution of design, the plants change so as to attract animals, while the animals change so as to become attracted to the plants and fruits. The human love of sweet tastes and smells and of bright, highly saturated colors probably derives from this co-evolution of mutual dependence between people and plants.

The human preference for faces and bodies that are symmetrical presumably reflects selection of the fittest; non-symmetrical bodies probably are the result of some deficiency in the genes or the maturation process. Humans select for size, color, and appearance, and what you are biologically disposed to think of as attractive derives from these considerations. Sure, culture plays a role, so that, for example, some cultures prefer fat people, others thin; but even within those cultures, there is agreement on what is and is not attractive, even if too thin or too fat for specific likes.

When we perceive something as "pretty," that judgment comes directly from the visceral level. You can find visceral design in advertising, folk art and crafts, and children's items. Thus, children's toys, clothes, and furniture will often reflect visceral principles: bright, highly saturated primary colors. Is this great art? No, but it is enjoyable.

Adult humans like to explore experiences far beyond the basic, biologically wired-in preferences. Thus, although bitter tastes are viscerally disliked (presumably because many poisons are bitter), adults have learned to eat and drink numerous bitter things, even to prefer them. This is an "acquired taste," so called because people have had to learn to overcome their natural inclination to dislike them. So, too, with crowded, busy spaces, or noisy ones, and discordant, nonharmonic music, sometimes with irregular beats.

The principles underlying visceral design are wired in, consistent across people and cultures. If you design according to these rules, your design will always be attractive. At the visceral level, physical features—look—dominate. Visceral design is all about immediate emotional impact. It has to look good. The shape and color are the most important. Sensuality and sexuality play roles.

Although existence the differences of the cultural and individual preferences on the visceral level, but about “pretty” or “not pretty” the human has common physiological, here we discuss the common visual preferences that based on human instinct and the women visual preferences based on gender differences.

a. Color

Carolyn Bloomer, the contemporary psychologist on visual art once said, “colors arouse different kinds of emotions, express affections and even influence human normal physical sensations”¹¹. The related studies on psychology show that when human’s visual organs are observing objects, color feelings takes up 80% while form feelings only takes up 20% in the first 20 seconds. However, color feelings and form feelings occupy half and half respectively, which reflects that colors play an important role in interaction between human and objects.

Color itself is a physical phenomenon. People can get feelings from color because color endows objective things and the aesthetical nature of beauty. Different colors stimulate people’s visual sense differently thus arousing people’s association and memory which are the aesthetical experience and eventually leading to the occurrence of aesthetical affections. The fact that people live in a world of colors for a long time and accumulate much visual experience will draw forth a certain emotion psychologically once the visual experience acts in cooperation with the outside color stimulation.

A research group led by Anya Hurlbert, Professor of UK Newcastle University, found in experiment that the most preferred color of males was light blue, while females light purple pink. They believed that, such color preference was inherent, and was gradually formed in human evolution.

Totally 208 persons participated in the color comparison test of Hurlbert's research group. They were aged between 20 and 26, from different countries around the world.

The test was simple. Hundreds of colors were successively displayed by a computer. Participants only had to click the mouse, and chose their most preferred color.

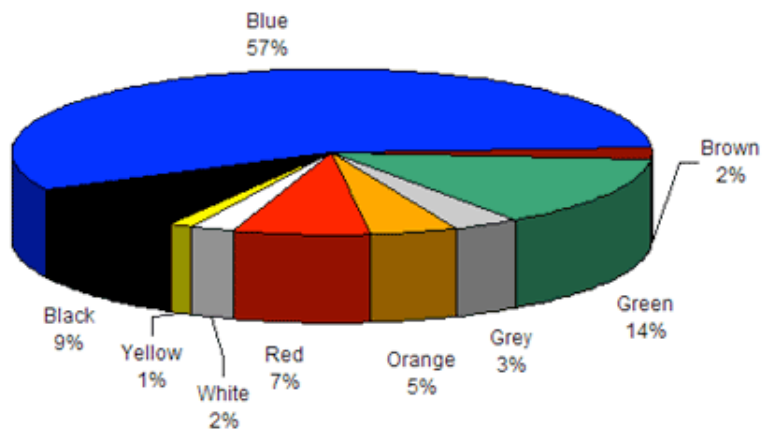
Shown by the result, there was a gender-based difference between all participants

11 Carolyn M. Bloomer, Principles of Visual Perception, Design Pr, 1990

from whatever country they came when choosing the color. Females were fond of pink, yet, also holding a favorable impression on blue, while males preferred blue.

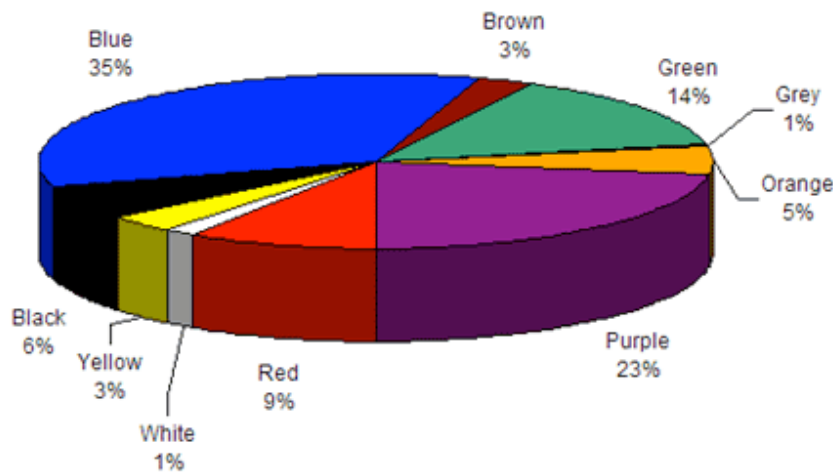
Professor Hurlbert stated that, whatever the reason was, according to the experiment, such reason ought to be caused by physiological factors, rather than cultural factors.

One of the better studies on this topic is Joe Hallock's Colour Assignments. Hallock's data showcases some clear preferences in certain colors across gender.



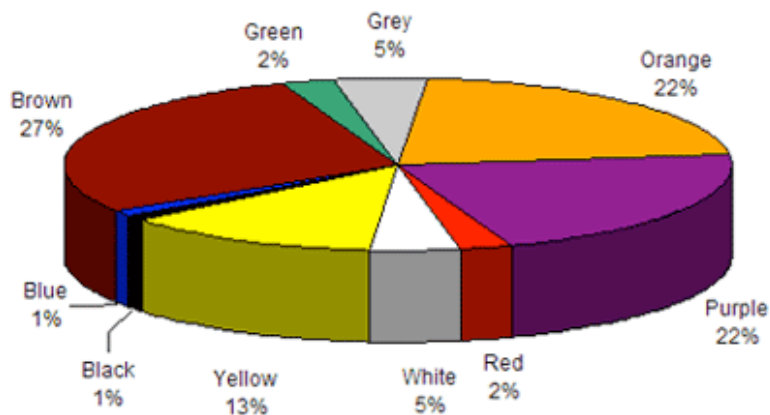
Tab.1 Men's Favorite Colors

Source: The experimental results of Anya Hurlbert



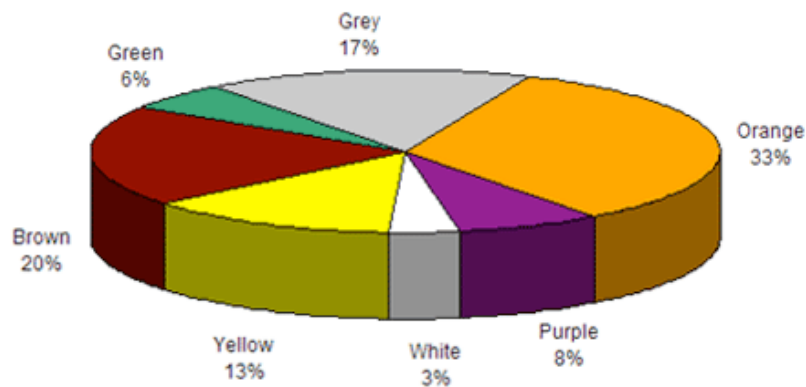
Tab.2 Women's Favorite Colors

Source: The experimental results of Anya Hurlbert



Tab. 3 Men's Least Favorite Colors

Source: The experimental results of Anya Hurlbert



Tab. 4 Women's Least Favorite Colors

Source: The experimental results of Anya Hurlbert

According to the analysis, regarding the preference on color pink, the difference has shown more than any other color the distance between women and men. 23% of women believe that pink is more beautiful than any other color, but there are also 8% of women completely rejecting pink. 22% of men don't like pink, which is typically associated to female characteristics.

Researchers also discovered that females preferring pink was the result of human evolution, and there was tangible historical foundation. Hurlbert pointed: the reason

should be traced back to ancient times when human beings lived on hunting and picking.

He said: "In that period, women were responsible for picking fruits, so they need to differentiate red fruits from green plants. For this reason, they are born sensitive to pink red." When choosing companion, the red face of males indicated a healthy body, which was attractive to females. Hurlbert also mentioned: "In that period, looking for food and choosing companion were two important factors for existence¹²." Pink is also associated to human emotions, especially care and comfort. Researchers found that: "In the long-term evolutionary process, females might have gradually acclimatized themselves to a role of care and comfort."

In the modern symbolism, the blue is the color of the male, a symbol of the spirit that blends calmness and rationality. Blue is 57% of men and 35% of women's favorite color, almost no one does not like blue.

Professor Hurlbert stated that there is also a deep natural origin for males to be fond of blue. In ancient times, human beings loved to see cloudless blue sky, which promised a good weather for hunting. People also would like to see blue water, which symbolized cleanness and limpidity.

In 2007, Doctor Anya Hurlbert and Yazhu Ling made an experiment to explore the way men and women differ in their perceptions of color. The experiment showed that men and women both preferred blue out of the sets of colors. When asked to choose from mixed colors, women liked colors that are closer to the red end of the spectrum, where shades of pink are found. In the experiment, both men and women had the same general preference when it came to light and dark colors. However, the experiment showed that women gravitate toward soft colors, while men like bright ones. As a general rule, men tolerate achromatic colors more than women. Achromatic colors are those which have no hue-like black, white and shades of gray. A McInnis and Shearer experiment found that women preferred tints more than shades. It's often proposed that the reason is due to their higher consciousness of specific colors. A "tint" is simply any color with white added. A color scheme using tints is soft, youthful and soothing. A "shade" is simply any color with black added. Shades are deep, powerful and mysterious. What may be simply "purple" to a man could be grape, plum, or any other fruit-like variant to a woman.

12 Hurlbert, *Current Biology*, Cell Press (United States), 21 aug 2007.

Color preference is affected by innate factors, as well as acquired factors. Among all participants, Chinese people love red most. In China, red symbolizes good luck and happiness. For example, Chinese knot, lanterns, and the Shanghai World Expo China Pavilion Design. This shows that, cultural background is also a significant influential factor.

With regard to the view, Hurlbert insisted that, early period labor division and natural selection in human society were the roots for the fact that females loved pink, and males preferred blue. She said, "This is just my speculation. Yet, I still consider the theory of evolution to be more reasonable. Culture might have utilized or combined people's fondness of color. Yet, this is not a decisive factor¹³."



4



5

Fig.4 Chinese traditional red lanterns

Fig.5 Red Chinese knots

b. Forms

1. Rounded Corners are Easier to Process

Anyone can appreciate the aesthetic beauty of rounded corners, but not everyone can explain where exactly that beauty comes from. The answer to that is literally in your eye.

Some experts say that rectangles with rounded corners are easier on the eyes than a

13 Hurlbert, Current Biology, Cell Press (United States), 21 aug 2007.

rectangle with sharp edges because they take less cognitive effort to visually process. The fovea is fastest at processing circles. Processing edges involve more “neuronal image tools” in the brain. Thus, rectangles with rounded corners are easier process because they look closer to a circle than a regular rectangle.

Scientific research done on corners by the Barrow Neurological Institute found that the “perceived salience of a corner varies linearly with the angle of the corner¹⁴. Sharp angles generated stronger illusory salience than shallow angles”. In other words, the sharper the corner, the brighter it seems. And the brighter a corner appears, the more it’ll affect visual processing.

2. Why Our Brains Love Curvy Architecture

Time and again, when people are asked to choose between an object that’s linear and one that’s curved, they prefer the latter. That goes for watches with circular faces, letters rendered in a curly font, couches with smooth cushions—even dental floss with round packaging.

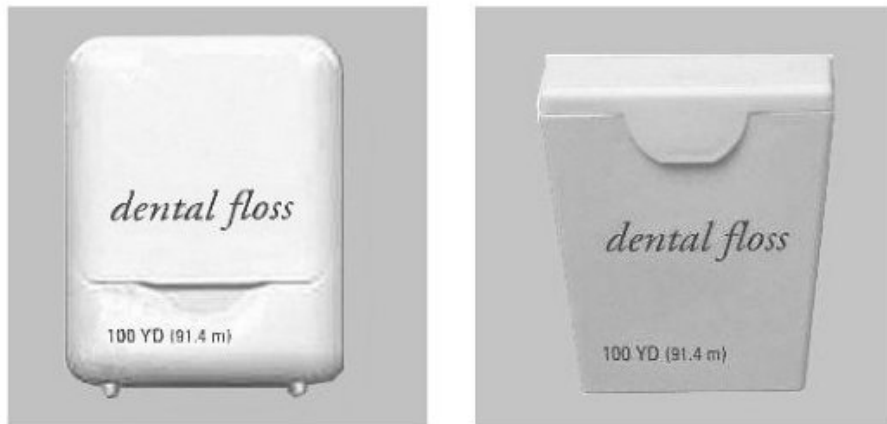


Fig.6 Different shaped package of dental floss

The Cognitive Neuroscience Laboratory at Harvard Medical School Recently neuroscientists have shown that this affection for curves isn’t just a matter of personal taste; it’s hard-wired into the brain. Working in tandem with designers in Europe, a research team led by psychologist Oshin Vartanian of the University of Toronto at Scarborough compiled 200 images of interior architecture. Some of the rooms had a round style like this:

14 Barrow Neurological Institute, Corner salience varies linearly with corner angle during flicker-augmented contrast: a general principle of corner perception based on Vasarely’s artworks, 2005.



7



8

Fig.7 Round style room

Fig.8 Square style room

Fig.7, Fig.8 : 2 of the 200 interior architecture images of research by psychologist Oshin Vartanian."why our brains like curvy"

Source: <http://www.fastcodesign.com/3020075/why-our-brains-love-curvy-architecture>

Vartanian and collaborators slid people into a brain imaging machine, showed them these pictures, and asked them to label each room as "beautiful" or "not beautiful." In a study published earlier this year, they reported that test participants were far more likely to consider a room beautiful when it was flush with curves rather than full of straight lines. Oblong couches, oval rugs, looping floor patterns--these features got our aesthetic engines going.

It's worth noting this isn't a men-love-curves thing; twice as many women as men took part in the study. Roundness seems to be a universal human pleasure.

Beauty ratings were just the first step in the study. The researchers also captured the brain activity that occurred when the study participants in the imaging machine considered the pictures. Turns out people looking at curved design had significantly more activity in a brain area called the anterior cingulate cortex, compared to people who were looking at linear decorations. The ACC has many cognitive functions, but one is especially noteworthy in the context of Vartanian's study: its involvement in emotion.

"We prefer curves because they signal lack of threat¹⁵." So curved design uses our brains to tug at our hearts. Some of us cry outside great buildings as a result. Some of us reach for another brand of dental floss. Some of us, beyond all rational judgment, type in Comic Sans font. "Our preference for curves can not be explained entirely in terms of a 'cold' cognitive assessment of the qualities of curved objects," Vartanian tells Co.Design. "Curvature appears to affect our feelings, which in turn could drive our preference."

The Bilbao-sized question is why exactly curves give us a visceral pleasure. Some neuroscientists believe the answer may have adaptive roots. Another brain imaging study, conducted several years ago by Moshe Bar of Harvard Medical School, found that viewing objects with sharp elements--once again, square watches, pointy couches, and the like--activated the amygdala. That's the part of the brain that processes fear. Bar and collaborator Mital Neta proposed that since sharp objects have long signaled physical danger, human brains now associate sharp lines with a threat. Curves, meanwhile, may be seen as harmless by comparison.

"In other words," says Vartanian, "we prefer curves because they signal lack of threat, i.e. safety¹⁶."

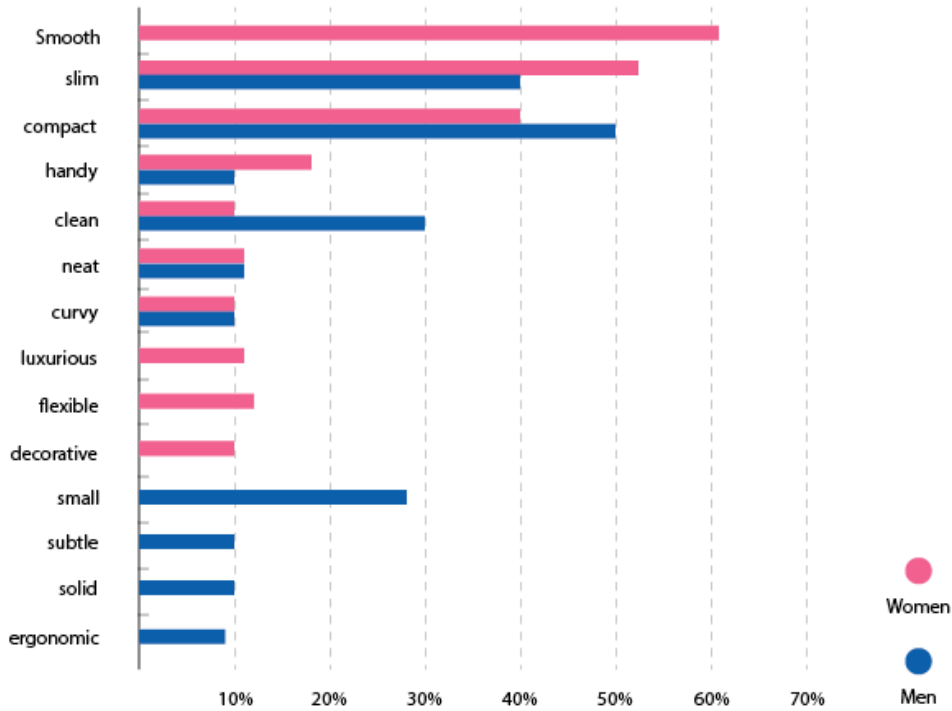
3. Female preferences and perception of shape

Researchers from the National University of Singapore made an analysis: they picked some everyday objects, such as mobile phones, perfumes, razors and so on.

15 Oshin Vartanian, James C. Kaufman, Adam S. Bristol, *Neuroscience of Creativity*, The MIT Press, 2013

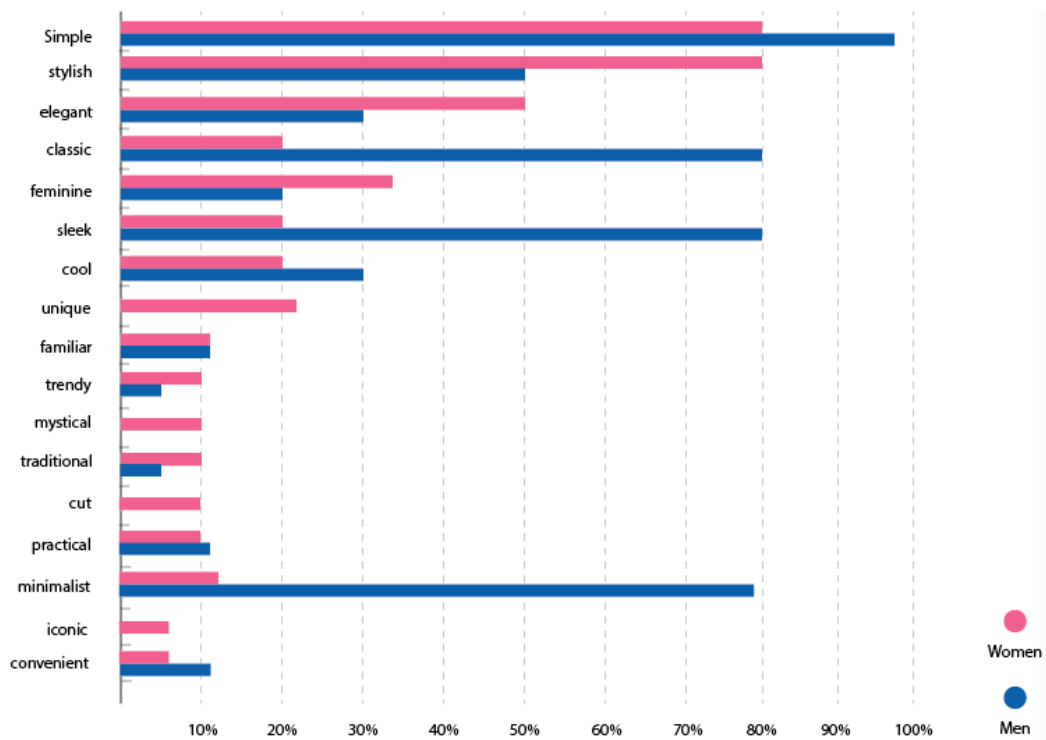
16 Oshin Vartanian, James C. Kaufman, Adam S. Bristol, *Neuroscience of Creativity*, The MIT Press, 2013

Then, they selected 10 different shapes and asked some men and women to choose the shape they preferred. In this way, the researchers identified the different tastes and preferences of men and women. Finally they asked those people to choose some key words to describe the products they had chosen. The occurrence of such words helped the researchers to define the preferences of women regarding shapes.



Tab. 5 Different gender preferences of form-sensory

Source: Analysis of National University of Singapore, Department of Architecture “Female Preferences in Design”, 2007



Tab. 6 Different gender preferences of form- Perceptive

Source: Analysis of National University of Singapore, Department of Architecture “Female Preferences in Design”, 2007

First figure demonstrates that men seem concerned with characteristics such as compactness, slimness, and cleanliness. They suggested keywords such as solid, ergonomic, and relevant, ones that women did not mention at all. This may suggest men’s preference form that look sophisticated and reliable, with an emphasis on overall structure. Women on the other hand seem to be especially concerned with smoothness, slimness, and compactness. Along with words such as curvy, flexible, decorative, luxurious, and neat, this tends to show their preference toward organic forms, texture-based details and materials. Other figure shows that both genders place much emphasis on simplicity when it comes to perceived aesthetic. Other than that, women seem concerned with products being stylish, followed by elegant and feminine. Women think that it is important for things to be feminine-looking.

4. Culture can influence our perception of contour

Although studies have shown that we like the curvy is common humanity, but culture, context, and familiarity can all influence our perception of contour. For example, the most of curves feel warm and welcoming, but some curves are plenty

scary, such as rattlesnake.

In all forms, the Chinese people preference the circle, in Chinese culture, the circle stands for “fulfilled”, “oneness”, “perfection”, “unity”. More specifically, it’s the process of something coming full circle that bears the most importance. Family members get together to celebrate the day that the moon is at its fullest (Mid-Autumn day). Two halves of a broken round mirror symbolizes the reunion of spouses who were separated. Yin and Yang forms a perfect circle divided by a sinuous line and stands for the oneness of conflicting forces inside everything.



9

10



Fig.9 China's Mid-Autumn Festival and moon cake

Fig.10 China's Tai Chi

4.3 Behavioral Design

Behavioral design is all about use. What matters here are four components of good behavioral design: function, understandability, usability, and physical feel.

4.3.1 Function

In most behavioral design, function comes first and foremost; what does a product do, what function does it perform? If the item doesn't do anything of interest, then who cares how well it works? Even if its only function is to look good, it had better succeed. Some well-designed items miss the target when it comes to fulfilling their purpose and thus deserve to fail. If a potato peeler doesn't actually peel potatoes, or a watch doesn't tell accurate time, then nothing else matters. So the very first

behavioral test a product must pass is whether it fulfills needs.

On the face of it, getting the function right would seem like the easiest of the criteria to meet, but in fact, it is tricky. People's needs are not as obvious as might be thought. When a product category already exists, it is possible to watch people using the existing products to learn what improvements can be made. But what if the category does not even exist? How do you discover a need that nobody yet knows about? This is where the product breakthroughs come from.

As Herbst LaZar Bell properly emphasizes, the real challenge to product design is "understanding end-user unmet and unarticulated needs¹⁷." That's the design challenge—to discover real needs that even the people who need them cannot yet articulate.

How is it possible to know the desires people have not expressed, yet? It is necessary to start with the deeper needs of human beings. The father of Wechat, Zhang Xiaolong said that when they make a product, they study humanity, not the logic of a product¹⁸.

Steve Jobs said we don't need to make research, nor to check statistics, because we know what the user desires¹⁹. For this, rather than asking ten thousands of people what they desire, the designers must learn to observe people and grasp in this way what they really want. The reason why so many interactive design projects fail is the inability to understand people's wishes. Usually designers and engineers are rather egocentric while developing a project – they make a product that corresponds to their own preferences, instead of the final users'.

Zhang Xiaolong made an interesting example about Wechat to explain how their product manager didn't know well the needs of women. When Wechat first introduced the “shake” function (shaking the iPhone allows the user to find other people who are shaking their iPhone in that specific moment), the manager feared this function would have led to problems with women being harassed. The designers felt sorry for this and rather guilty, however the consequences were very different: Women didn't care about male users molesting them, they just enjoyed to compare privately who among them received more greetings from men. It was a

17 Donald Norman, *The Emotion Design*, Apogeo Education, 2013

18 Zhang Xiaolong, *Wechat simple beauty*, Machinery Industry Press, 2010

19 Gregory Ciotti, *Why Steve Jobs didn't listen to his customers*,
<http://www.helpscout.net/blog/why-steve-jobs-never-listened-to-his-customers/>

way to test their charm.

This example shows how a good interactive product has to fulfill the psychological needs of the users.



Fig.11 Screenshot of Wechat Shake

Maslow's hierarchy of needs

What motivates behavior? According to humanist psychologist Abraham Maslow, our actions are motivated in order to achieve certain needs. Maslow first introduced his concept of a hierarchy of needs in his 1943 paper "A Theory of Human Motivation" and his subsequent book *Motivation and Personality*. This hierarchy suggests that people are motivated to fulfill basic needs before moving on to other, more advanced needs.

While some of the existing schools of thought at the time (such as psychoanalysis and behaviorism) tended to focus on problematic behaviors, Maslow was much more interested in learning more about what makes people happy and the things that they do to achieve that aim. As a humanist, Maslow believed that people have an inborn desire to be self-actualized, to be all they can be. In order to achieve this ultimate goal, however, a number of more basic needs must be met first such as the need for food, safety, love, and self-esteem.

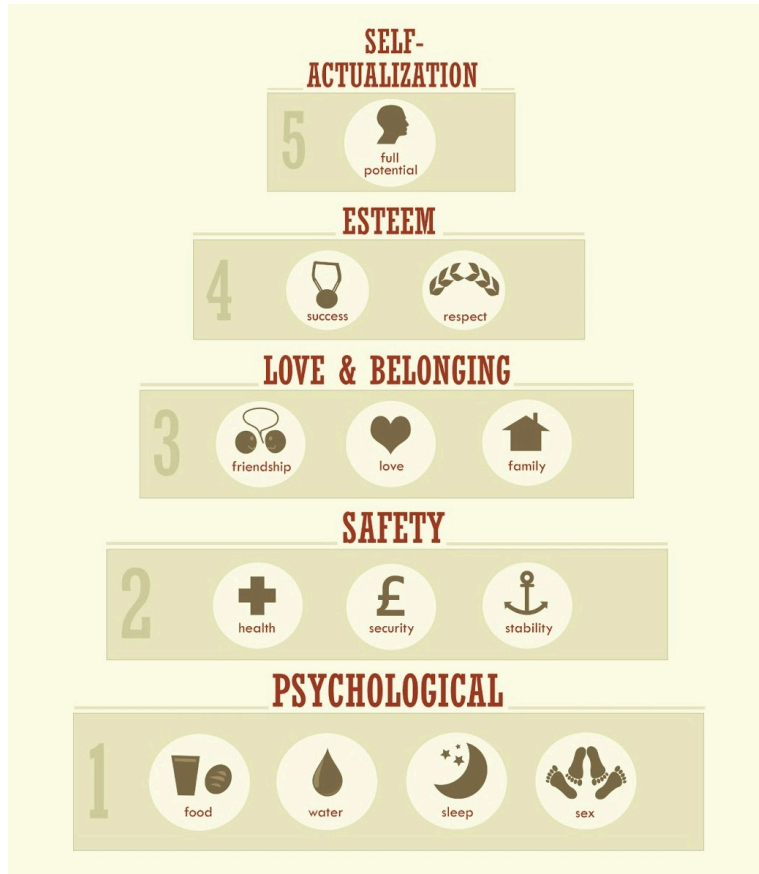


Fig.12 Maslow's hierarchy of needs

1. Physiological Needs

These include the most basic needs that are vital to survival, such as the need for water, air, food, and sleep. Maslow believed that these needs are the most basic and instinctive needs in the hierarchy because all needs become secondary until these physiological needs are met.

2. Security Needs

These include needs for safety and security. Security needs are important for survival, but they are not as demanding as the physiological needs. Examples of security needs include a desire for steady employment, health care, safe neighborhoods, and shelter from the environment.

3. Social Needs

These include needs for belonging, love, and affection. Maslow described these needs as less basic than physiological and security needs. Relationships such as friendships, romantic attachments, and families help fulfill this need for companionship and acceptance, as does involvement in social, community, or religious groups.

4. Esteem Needs

After the first three needs have been satisfied, esteem needs becomes increasingly important. These include the need for things that reflect on self-esteem, personal worth, social recognition, and accomplishment.

5. Self-actualizing Needs

This is the highest level of Maslow's hierarchy of needs. Self-actualizing people are self-aware, concerned with personal growth, less concerned with the opinions of others, and interested fulfilling their potential.

This hierarchy is most often displayed as a pyramid. The lowest levels of the pyramid are made up of the most basic needs, while the more complex needs are located at the top of the pyramid. Needs at the bottom of the pyramid are basic physical requirements including the need for food, water, sleep, and warmth. Once these lower-level needs have been met, people can move on to the next level of needs, which are for safety and security.

As people progress up the pyramid, needs become increasingly psychological and social. Soon, the need for love, friendship, and intimacy become important. Further up the pyramid, the need for personal esteem and feelings of accomplishment take priority. Like Carl Rogers, Maslow emphasized the importance of self-actualization, which is a process of growing and developing as a person in order to achieve individual potential.

Maslow believed that these needs are similar to instincts and play a major role in motivating behavior. Physiological, security, social, and esteem needs are deficiency needs, meaning that these needs arise due to deprivation. Satisfying these lower-

level needs is important in order to avoid unpleasant feelings or consequences.

Maslow termed the highest-level of the pyramid as growth needs (also known as being needs or B-needs). Growth needs do not stem from a lack of something, but rather from a desire to grow as a person.

The user experience design allows to understand the psychological needs of users. According to Maslow's theories, for example, the main target population of Weibo is young people. Young people need to assess their presence and they do this through their circle of friends. Once this is clear, it is simple to understand the basic needs of the users. For this reason, Weibo is not just a website where users can share their feelings - it is a platform that offers to them support against loneliness. Weibo fills the social need and at the same time provides a sense of realization, giving an answer to the esteem need.



Fig.13 Screenshot of Weibo

4.3.2 Understandability

After function comes understanding. If you can't understand a product, you can't use it—at least not very well. Oh, sure, you could memorize the basic operating steps, but you probably will have to be reminded over and over again what they are. With a good understanding, once an operation is explained, you are apt to say, "Oh, yes, I

see," and from then on require no further explanation or reminding. "Learn once, remember forever," ought to be the design mantra.

An important component of understanding comes from feedback: a device has to give continual feedback so that a user knows that it is working, that any commands, button presses, or other requests have actually been received. This feedback can be as simple as the feel of the brake pedal when you depress it and the resultant slowing of the automobile, or a brief flash of light or sound when you push something. It is amazing, though, how many products still give inadequate feedback. Most computer systems now display a clock face or an hour-glass to indicate that they are responding, if slowly. If the delay is short, this indicator suffices, but it is completely inadequate if the delay lengthens. To be effective, feedback must enhance the conceptual model, indicating precisely what is happening and what yet remains to be done. Negative emotions kick in when there is a lack of understanding, when people feel frustrated and out of control—first uneasiness, then irritation, and, if the lack of control and understanding persists, even anger.

4.3.3 Usability

Usability is a complex topic. A product that does what is required, and is understandable, may still not be usable. Thus, guitars and violins do their assigned tasks well (that is, create music), they are quite simple to understand, but they are very difficult to use. The same is true of the piano, a deceptively simple-looking instrument. Musical instruments take years of dedicated practice to be used properly, and even then, errors and poor performance are common among nonprofessionals. The relative unusability of musical instruments is accepted, in part because we know of no other alternative, in part because the results are so worthwhile.

But most of the things you use in everyday life should not require years of dedicated practice. New items appear every week, but who has the time or energy to spend the time required to learn each one?

For example, in Windows OS there is a "Program Manager" to install or uninstall programs. This method is however not intuitive. In Macintosh systems, moving a program to the trash bin is enough to delete a program. And on an iPhone? Deleting an app is as simple as touching its icon and then the small "x" in the upper-left corner. There is no "Program Manager" nor the word "delete". On iPhone, once the user presses the icons, they begin to shake. Why do they shake? To express their

unstable status. According to an interesting explanation, this shaking means the apps are begging not to be deleted.

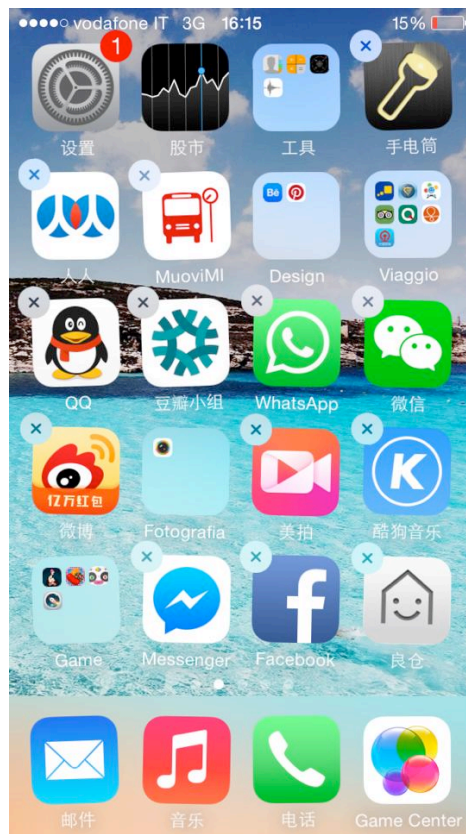


Fig.14 Screenshot of iPhone icons when to be deleted

Usage is the critical test of a product: Here is where it stands alone, unsupported by advertising or merchandising material. All that matters is how well the product performs, how comfortable the person using it feels with the operation. A frustrated user is not a happy one, so it is at the behavioral stage of design that applying the principles of human-centered design pay off.

4.3.4 Physical feel

Good designers worry a lot about the physical feel of their products. Physical touch and feel can make a huge difference in your appreciation of their creations. Consider the delights of smooth, polished metal, or soft leather, or a solid, mechanical knob that moves precisely from position to position, with no backlash or dead zones, no wobbling or wiggling.

Physical objects have weight, texture, and surface. The design term for this is "tangibility." Far too many high-technology creations have moved from real physical controls and products to ones that reside on computer screens, to be operated by touching the screen or manipulating a mouse. All the pleasure of manipulating a physical object is gone and, with it, a sense of control. Physical feel matters. We are, after all, biological creatures, with physical bodies, arms, and legs. A huge amount of the brain is taken up by the sensory systems, continually probing and interacting with the environment. The best of products make full use of this interaction. Just imagine cooking, feeling the comfort of a balanced, high-quality knife, hearing the sound of cutting on the chopping board or the sizzle when you drop food into the skillet, smelling the odors released from the fresh-cut food. Or imagine gardening, feeling the tenderness of a plant, the grittiness of the earth. Or playing tennis, hearing the twang of the ball against the racket's strings, its feel in your hands. Touch, vibration, feel, smell, sound, visual appearance. And now imagine doing all this on a computer screen, where what you see may look real, but with no feel, no scent, no vibrations, no sound.

The world of software is to be commended for its power and chameleon-like ability to transform itself into whatever function is needed. The computer provides for abstract actions. Computer scientists call these environments "virtual worlds," and although they have many benefits, they eliminate one of the great delights of real interactions: the delight that comes from touching, feeling, and moving real physical objects.

The virtual worlds of software are worlds of cognition: ideas and concepts presented without physical substance. Physical objects involve the world of emotion, where you experience things, whether the comfortable sensuousness of some surfaces or the grating, uncomfortable feel of others. Although software and computers have become indispensable to daily life, too much adherence to the abstraction of the computer screen subtracts from emotional pleasure. Fortunately, some designers of many computer-based products are restoring the natural, affective pleasures of the real, tangible world.

For example, in Motion Sensing Game the users have perception of the Physical feel: In the archery game, the users can feel the tension of the bow, the force of the wind; In the tennis game, the user feels the impact of the ball against the racket and the sound, conveying a strong Physical feel.



Fig.15 Motion Sensing Game

Another example is the “virtual kitchen tool”: It works in a way that's similar to a Motion Sensing Game. In this situation, the force feedback function simulates properly the motion of pans, the cooking and other actions. The user feels the weight of foods in the pan, hears the sound of cooking and meanwhile the virtual food change colors to show whether it is raw or not. The cooking process seems almost real.



Fig.16 virtual kitchen

4.4 Reflective Design

Reflective design covers a lot of territory. It is all about message, about culture, and about the meaning of a product or its use. For one, it is about the meaning of things, the personal remembrances something evokes. For another, very different thing, it is about self-image and the message a product sends to others. Whenever you notice that the color of someone's socks matches the rest of his or her clothes or whether those clothes are right for the occasion, you are concerned with reflective self-image.

Whether we wish to admit it or not all of us worry about the image we present to others—or, for that matter, about the self-image that we present to ourselves. Do you sometimes avoid a purchase "because it wouldn't be right" or buy something in order to support a cause you prefer? These are reflective decisions. In fact, even people who claim a complete lack of interest in how they are perceived—dressing in whatever is easiest or most comfortable, refraining from purchasing new items until the ones they are using completely stop working—make statements about themselves and the things they care about. These are all properties of reflective processing.

Did you ever consider buying an expensive, hand-crafted watch? Expensive jewelry? Single malt scotch or a prestige vodka? Can you really distinguish among the brands? Blind-tasting of many whiskeys, where the taster has no idea which glass contains which drink, reveals that you probably can't taste the difference. Why is an expensive original painting superior to a high-quality reproduction? Which would you prefer to have? If the painting is about aesthetics, then a good reproduction should suffice. But, obviously, paintings are more than aesthetics: they are about the reflective value of owning—or viewing—the original.

These questions are all cultural. There is nothing practical, nothing biological, about the answers. The answers are conventions, learned in whatever society you inhabit. For some of you, the answers will be obvious; for others, the questions will not even make sense. That is the essence of reflective design: it is all in the mind of the beholder.

Attractiveness is a visceral-level phenomenon—the response is entirely to the surface look of an object. Beauty comes from the reflective level. Beauty looks below the surface. Beauty comes from conscious reflection and experience. It is influenced by knowledge, learning, and culture. Objects that are unattractive on the surface can give pleasure. Discordant music, for example, can be beautiful. Ugly art can be

beautiful.

Advertising can work at either the visceral or the reflective level. Pretty products—sexy automobiles, powerful-looking trucks, seductive bottles for drinks and perfume—play with the visceral level. Prestige, perceived rarity, and exclusiveness work at the reflective level. Raise the price of Scotch, and increase the sales. Make it difficult to get reservations to a restaurant or entrance to a club, and increase their desirability. These are reflective-level ploys.

For example, Swatch, was not a watch company; it was an emotions company. Sure, they made the precision watches and movements used in most watches around the world, but what they had really done was to transform the purpose of a watch from timekeeping to emotion. Their expertise, their president boldly proclaimed, was human emotion, as he rolled up his sleeves to display the many watches on his arm.

Swatch is famous for transforming the watch into a fashion statement, arguing that people should own as many watches as ties, or shoes, or even shirts. You should change your watch, they proclaimed, to match mood, activity, or even the time of day.



Fig.17 Advertising of Swatch

Chapter V: Case study

5.1 Life of Chinese women

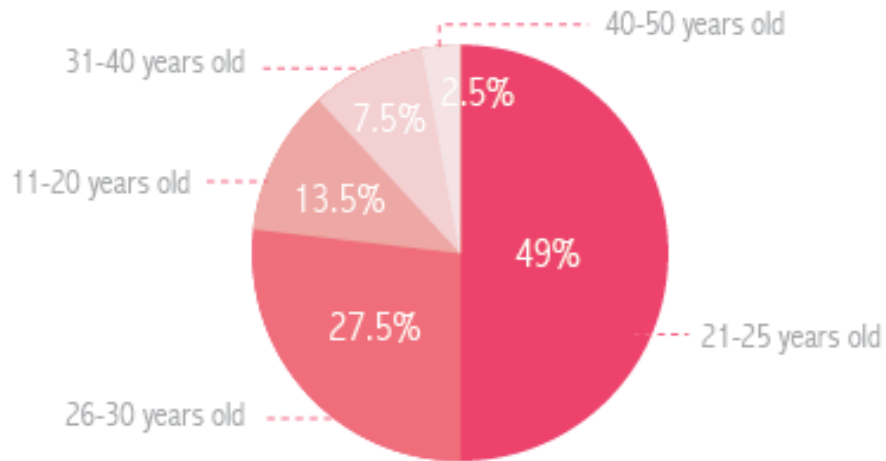
Thanks to the huge economic growth that China is experiencing, the life of its population is improving. Chinese people's lifestyle and attitude is very different from 20 years ago and women's life has become much more frenetic: Nowadays Chinese women study, work, take care of their family but also have their own hobbies and want to enjoy life.

According to the "Survey about the life of Chinese female students" of the University of Chinese Academy of Sciences, the activity Chinese female students enjoy the most in their spare time is shopping, then watching movies, hanging out with friends, practicing sports and other activities. More than 50% of the participants to the survey state the most important thing in life is health and love/family. Working women instead have to face the problems of a stressful life and lack of spare time. According to the "Survey about the life of Chinese working women", 36% of them have almost no spare time, 20% say that besides the time they spend to work and sleep, they have only 2-6 hours of spare time a day. For these reasons they prefer to stay home and enjoy online shopping or watching movies online. 7% spend their spare time in traveling and going to the gym to relax. Most women believe having a job means fulfilling the purpose of their life. However they also confirm health is a fundamental necessity. The survey also shows Chinese women now spend more time "enjoying what they like" rather than doing houseworks. Married women and mothers focus their life mostly on family and spend their spare time helping the kids studying. 21% of this group also enjoy shopping, watching movies and shows, joining activities but for sure they are less willing to do such things than women who have no children.

According to the data collected with these surveys, the "Order of most valuable elements in life" for women is: A happy married life (Love); Stable income; A job that can fulfill their potential; A happy life; Staying away from pollution; Living in a safe society.

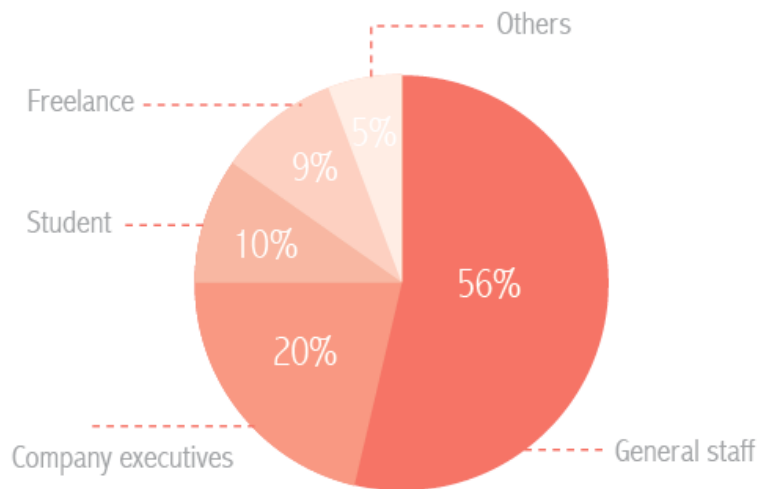
5.2 What Chinese women concerned

5.2.1 Women's magazines survey



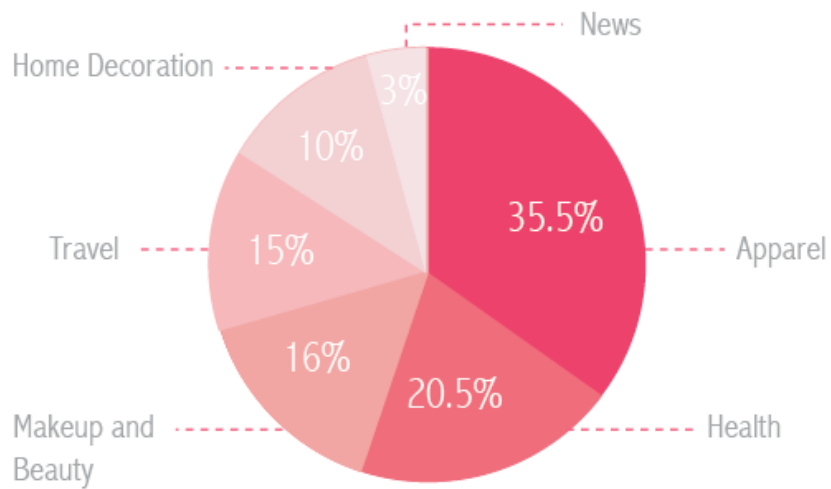
Tab. 7 Age range of female readers of magazines

Source: 2013 Comprehensive Analysis Report of Chinese female readers

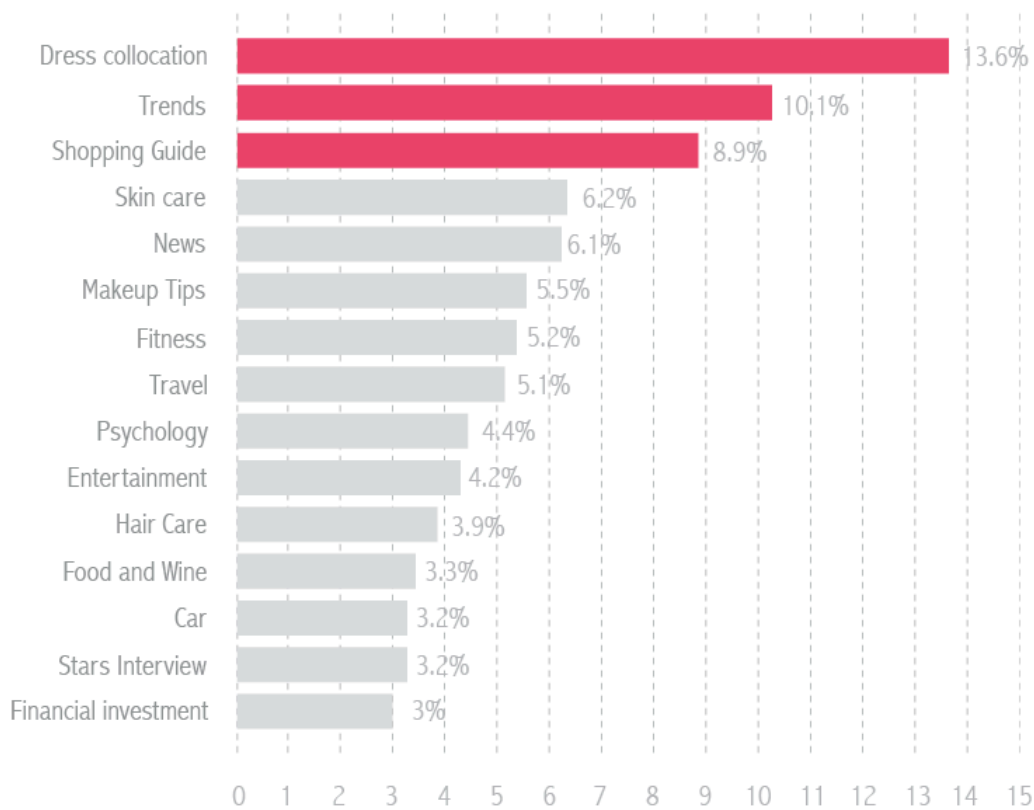


Tab. 8 Employment of female readers of magazines

Source: 2013 Comprehensive Analysis Report of Chinese female readers



Tab. 9 What kind of magazine female readers prefer
 Source: 2013 Comprehensive Analysis Report of Chinese female readers



Tab. 10 What kind of magazine articles women prefer
 Source: 2013 Comprehensive Analysis Report of Chinese female readers

According to the results of this analysis, the favorite topics among Chinese girls are dress matching and fashion trends; women's health is also very popular, especially

in the 20-30 years-old range. Young readers mostly buy such magazines to learn to get dressed and use make-up in a fashionable way. The survey shows 56.9% of women follow the pieces of advice of the magazine. However, there's a difference between girls and more mature readers: teenagers buy these magazines to learn about dresses and beauty; female readers in the 21-35 years-old range want to check the latest trends and finally readers who are above 35 years old want to read how to preserve and enhance their appearance.




























Fig.18 Chinese women's fashion magazine RUILI
 Fig.19 Chinese women's fashion magazine XINWEI

5.2.2 Women's apps and websites survey

a. Applications for women

At the moment, the amount of apps targeting a female public in China is 47%. There are many apps for selfie photo-shooting, make-up and health, which are really popular among Chinese girls. In China, the quality of life is improving quickly and many women are constantly caring about showing off their new status. Many other apps are focused instead on shopping and picture editing.

Menstruation Care :				
	Meet you	Dayima	Period Diary Pro	
Shopping Guide :				
	Meili shuo	Mogujie	Youke	Chaoliu nvzhuang
Pictures, video editing :				
	Meitu Xiuxiu	Camera360	Beauty Camera	Meipai
Female social :				
	Lamabang	Haoyun		
Maternal and Child :				
	Babytree	Zaoren	Huaiyun guanjia	
Make up :				
	Meizhuang	Meizhuangxiu		
Nail :				
	Xiumeijia	Beautymemo		
Hairdressing :				
	Meifatong	Fashioncat	Bo	
Plastic surgery :				
	Xinyang	Meirong		

Tab. 11 popular apps for women, divided per category

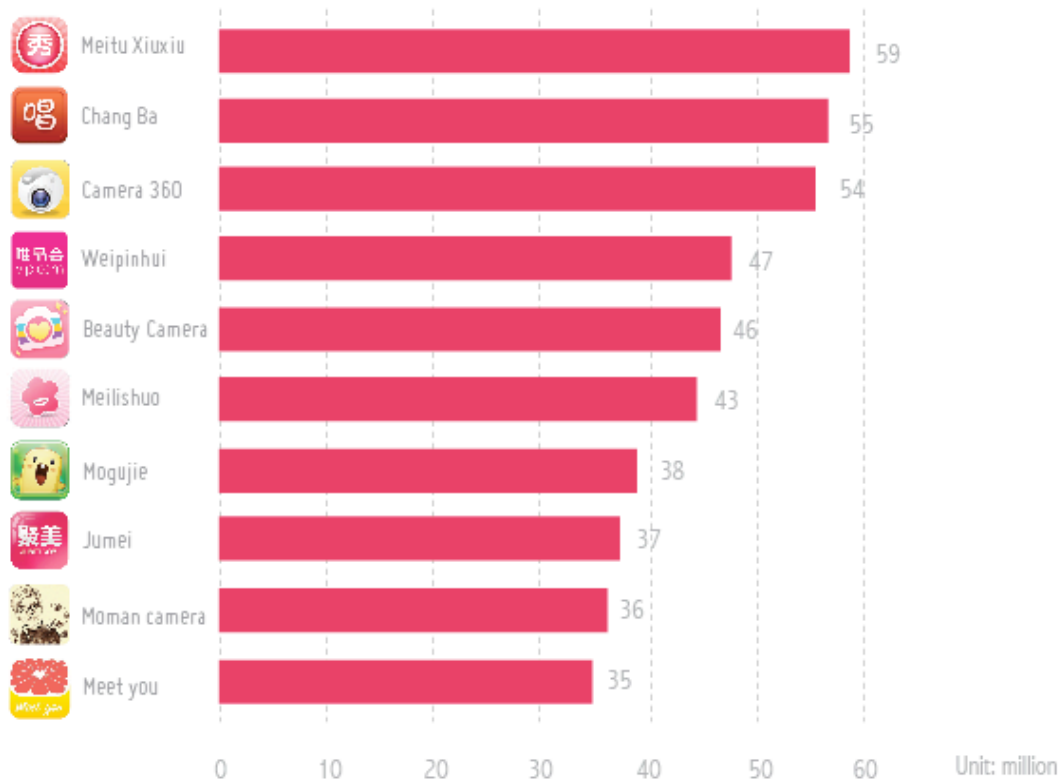
Source: EnfoDesk, Analysys International

Shopping, Health Management (or health care), maternity: These are the app categories that are quickly spreading in the recent years. Following them, there are apps that help girls shopping online, taking care of their beauty. In modern China, female users are very busy, so they have little spare time. These apps help them choose quickly what they need.

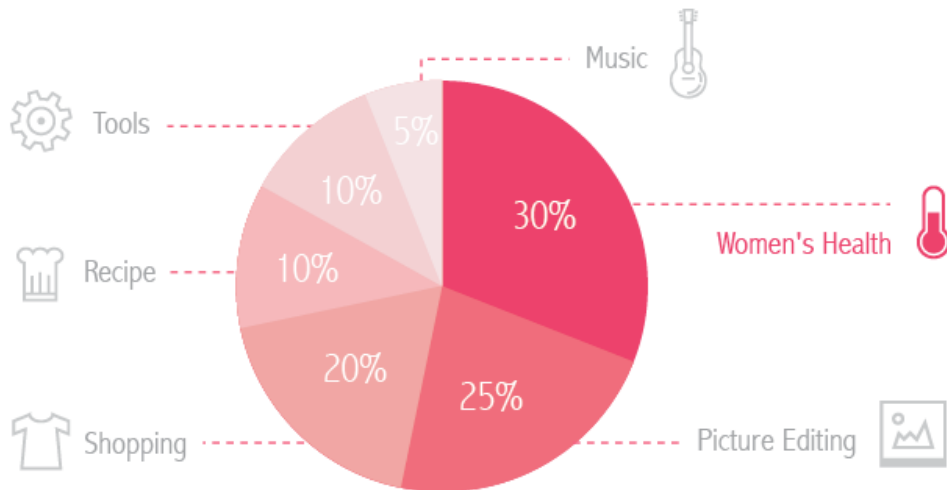
Also menstruation care apps have become very popular. Women care much more about their body and these apps help them reminding what to do during the month to be in good health.

Young moms like a lot maternity apps: In China most women have a child in their 20s, so these apps can target a specific group of women sharing a special moment in their life.

Picture editing apps have always been popular among Chinese women. Editing a photo with the mobile phone has become common practice and that's the reason why “Mei Tu Xiu Xiu” app is always in the top spot of any apps ranking.

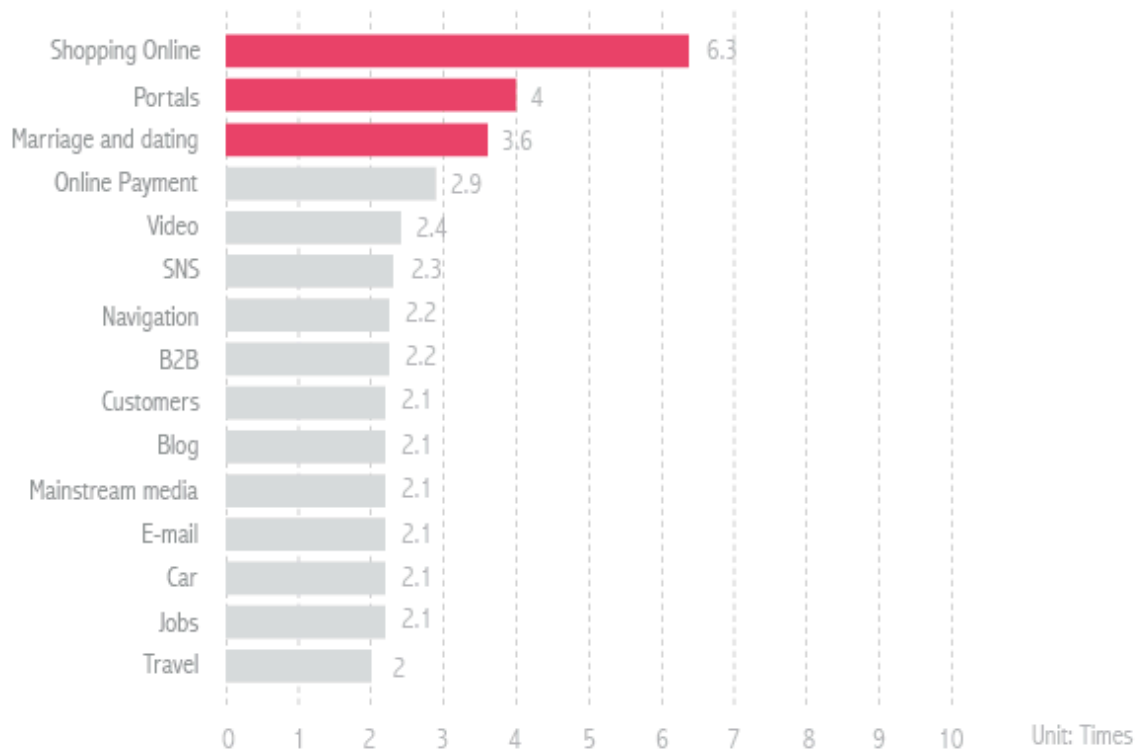


Tab. 12 TOP 10 favorite apps among Chinese girls
Source: EnfoDesk, Analysys International



Tab. 13 In TOP 20 popular apps for girls, the proportion of different content
 Source: EnfoDesk, Analysys International

b. Web site



Tab. 14 The amount of everyday different web access of female users
 Source: EnfoDesk, Analysys International

In China, online shopping is the main activity of girls while navigating the net. Online shopping of foreign products has become a social phenomenon in China: the amount of products that Chinese girls buy and import from abroad is the greatest in the world. This kind of shopping is very popular among girls who're born in 1980s and know well the internet. They love sharing, posting pictures and publishing news regarding newly discovered products, making it widely popular. The main importation from abroad is powder milk and other childcare products.

Chinese girls are also very interested in matchmaking websites: in China, girls usually get married when they are 23-27, so those who're in such age range and have no boyfriend yet get a lot of pressure, both from their parents and the society. Matchmaking websites have been created to answer these needs.



Fig.20 Screenshot of Chinese dating site Baihe

Another popular category of websites is video publishing websites. Korean dramas have become increasingly popular in China and there are many websites uploading them. Data of the last three years shows the popularity of Korean dramas is constantly increasing among Chinese girls. The increase rate is 25%. The popularity of such dramas leads to a consequential popularity of Korean variety shows.



Fig.21 Korean variety shows “Running Man”

In 2014 the most searched word on Baidu (by female Chinese users) is “lose weight”. This phenomenon is however different from the idea of diets in the West: Chinese girls are never satisfied with their weight and body-shape and losing weight becomes a never ending struggle for women of any age. Buying online slimming products, searching for new diets or doing sport to lose weight are also all obsessions linked to Korean dramas: when searching online for information about losing weight, the first result is Jung Da Yeon slimming gymnastic.



Fig.22 Jung Da Yeon slimming gymnastic.

Nowadays there are on internet two kind of websites targeting only women: one consists in women sections on web portals such as Sina, 163, Sohu, QQ (the four main web portals in China, each one featuring a section for ladies.)

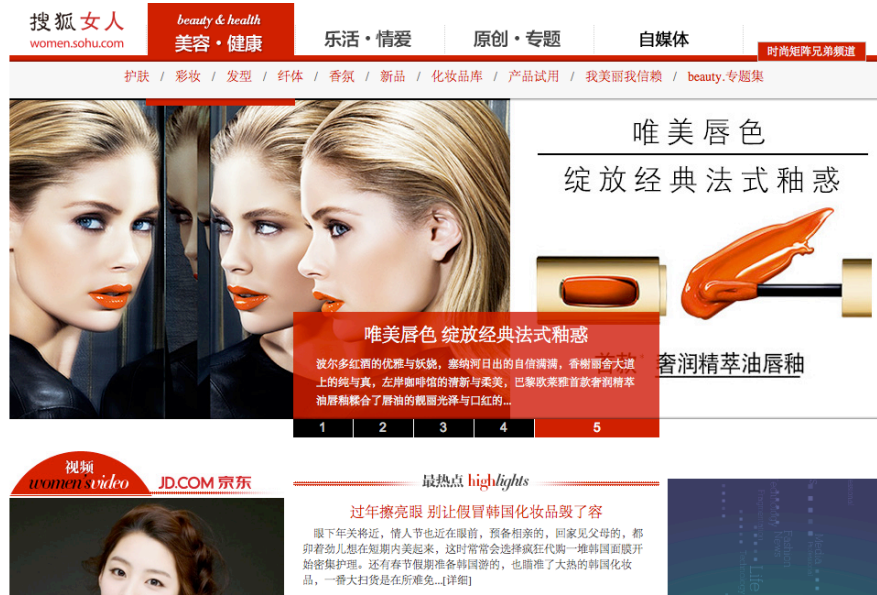


Fig.23 Screenshot of Sohu portal, female channel

The other one is websites for women like Rayli or Onlylady, which include all kind of contents regarding fashion, make-up, love, health, work, etc.



Fig.24 Screenshot of Rayli women website

In conclusion, the favorite topics of Chinese women in their everyday life are online

shopping, dress matching, health, selfie photography, losing weight, social media and food. Among these topics, online shopping, dress matching and health are what they care most.

5.3 Women's Health app: Dayima



Fig.25 Logo of Dayima

Dayima, an app which focuses on women health, was launched two years ago and has since established itself as the leading app for women's healthcare, accumulating over 100 million downloads, a registered user base of over 45 million, and monthly active users exceeding 3.2 million. Dayima's features include menstruation tracking date logs, menstruation date predictions, care advice, beauty and healthcare suggestions etc. Dayima also provides a private social network for its female users, creating a platform for them to speak and share some women's topics anonymously.

Regarding menstruation, Chinese girls and girls from other countries are the same: they've invented different names to call the menstruation, such as "auntie", "grandmother", "captain". American girls call it "aunt Flo", English girls "aunt Irma", however the most common name is "period". Chinese girls call it 大姨吗 (dayima), which means "aunt", while they call the menstrual pad "band-aid", "little angel", "vampire", etc.

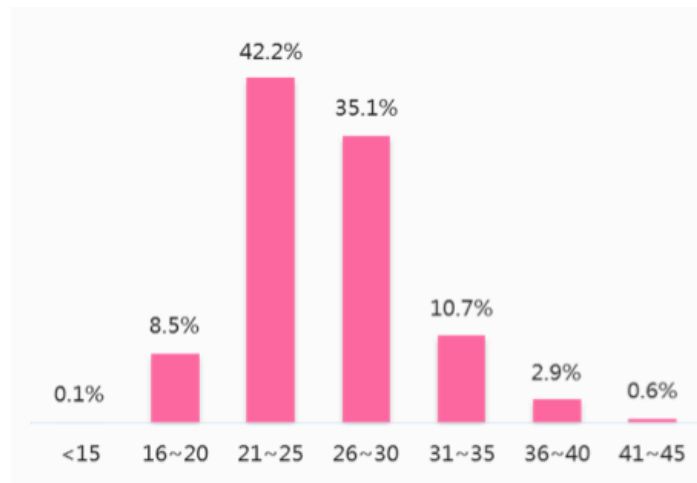
Chinese girls are shy, so talking about things such as menstruation or giving a menstrual pad to a friend in a public place make them very uncomfortable. However the app's name, Dayima is rather different and brave, it directly makes girls transform into the psychological liberation from the psycho-social shyness.

Chinese girls live their period in a way that's rather different from Western girls. In China, the symptoms of menstruation are supposed to hint at the health of the whole

body, which means the girls can understand their health condition and eventually apply solutions coming from traditional Chinese medicine. Chinese girls have to follow an important set of rules regarding diet and rest during the menstruation period. For example, they should drink ginger tea with red sugar.

A survey shows 92% of Chinese girls suffer from dysmenorrhea. The modern lifestyle is very stressful and girls don't always have the time to search for information about the symptoms of menstruation and precautions. Dayima helps girls to face this problem.

5.3.1 User analysis

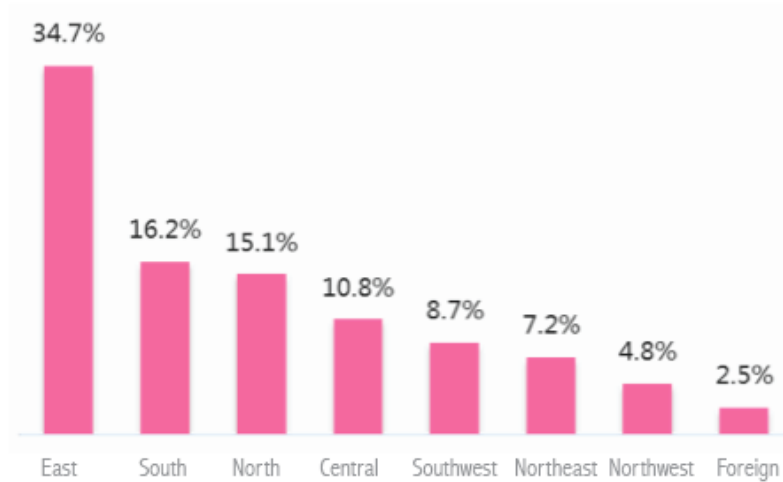


Tab. 15 Age of users

Source: Dayima 2013 Chinese women's physical health white paper

According to statistics, about 80% of Dayima users are girls in their 20s-30s, who are in fact the target of this app. Girls in their 20s are slowly moving from adolescence to adulthood and their physical conditions of their bodies are at their best. That's why they start caring about their health.

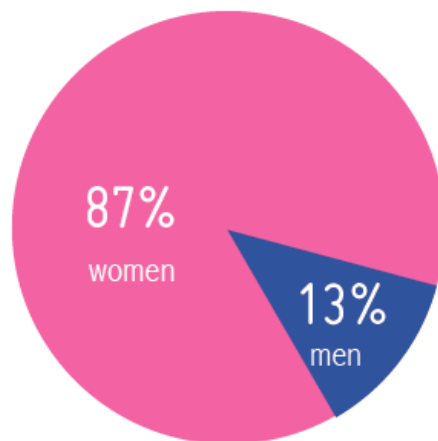
Dayima is a popular, trendy app sporting a precise and detailed service with a cute style and funny choice of words. The information in Dayima are very useful but it's the whole approach that make this app so popular among young girls.



Tab. 16 Users location

Source: Dayima 2013 Chinese women's physical health white paper

Through the analysis of geographical data of more than 20 million registered users, it appears that most users are located in Eastern, Southern and Northern China, since these are the most populated areas, where the economy is rather developed. In these regions, mobile phones and smart-phones services are also spreading very quickly. For these reasons, Chinese girls living in these parts of the country are very careful and interested in menstrual health.



Tab. 17 Users gender

Source: Dayima 2013 Chinese women's physical health white paper

In a second moment, Dayima released a version of its app for couples. Male users are about 5.8 millions, 13% of the total users. This means women health apps are not

just for ladies anymore since also men care and want to understand the health of their partners.

5.3.2 Interface analysis



Fig.26 Screenshot of Dayima

Fig.27 Dayima use of color

a. Visual experience

Regarding Dayima's logo, website and interface, the main color is pink; the background is light grey; green, yellow and purple are auxiliary colors. This pattern allows the users to immediately understand it's an app for women.

The graphic style is flat design.

In the design of Dayima, the cartoon images is also very close to the female preferences and characteristics. In addition, Dayima also creates a series of the family members: the little entanglement, and great uncle, etc. However, these cartoon images also appear in Dayima APP as the leading actors in the cartoon and animation stories, "the dayima has arrived" is a series of popular videos on internet These videos have been viewed more than 30 million times, the language is full of everyday words, they are funny and very cute. The purpose is to reach the female users but also to help men to understand women health.

b. Skins and background personal settings

Users can change the skins and backgrounds according to their preference. Each skin has a different theme so, when changing a skin, also the icons and background color change automatically as well. Each theme features a vivid color, with cartoony images, super-cute style, adapting to all women. Users can also change the background picture with the one they prefer, to further customize the aspect of the app.

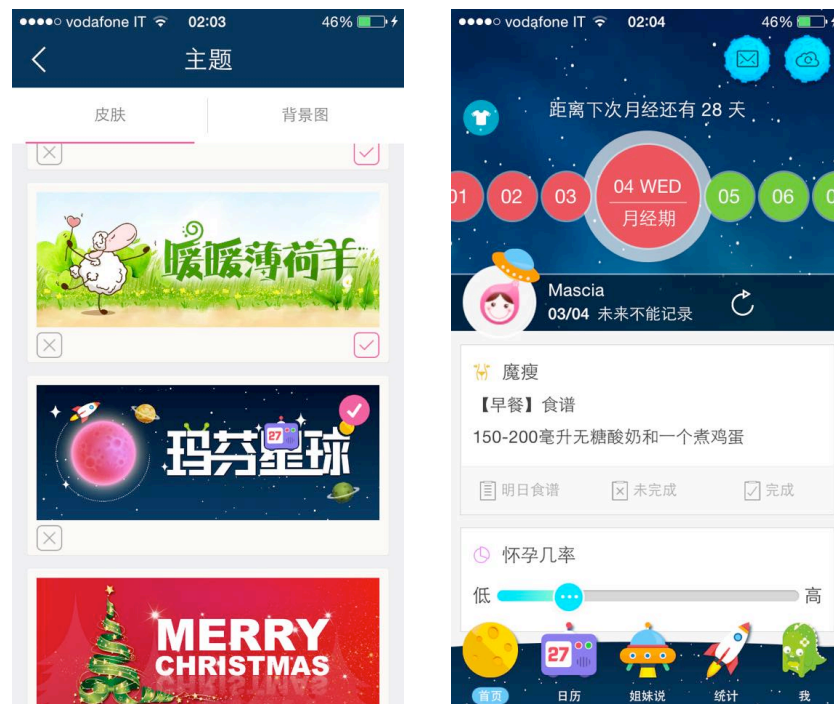


Fig.28 Different skins and background of Dayima

c. Navigation mode

The main navigation mode in Dayima is the tab menu. It allows the user to see clearly how to access the contents and return to the main selection. In this way the user does not get lost and immediately sees the most important information.

Secondary navigation modes are the gallery and list menu. They are both intuitive in the way they present the contents, so that the user can easily remember the navigation path to an article.

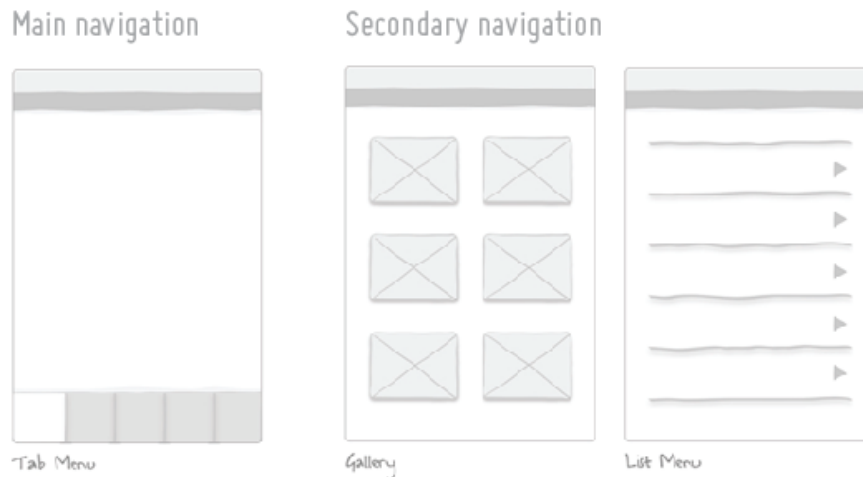


Fig.29 Navigation mode of Dayima

d. Information Visualization

Dayima shows information regarding weight, body temperature, hours of sleep, physical exercises and mood through infographics. In this way, it is simple for female users to view the changes in their body in a certain period of time.

5.3.3 Functional analysis

a. Menstrual Professional Analysis

Calculate the four stages of the menstrual cycle, including the menstruation and ovulation, according to their own records, so as to provide the required health knowledge and the solutions to the common problems in this stage for the girls according to the different physiological stages.



Fig.30 Dayima menstrual record function

b. Your own health expert

Besides functions regarding menstrual records and future periods, Dayima provides the user a way to sort such information and view them. The user just has to enter her weight, body temperature, physical activity and mood and Dayima shows a complete analysis of the user's health.

The app collects the data of all users and sends pieces of advice regarding cosmetology, diet, healthcare, mood shifts and psychological help. For example, it is possible to see through Dayima when the skin gets more dry and sensitive. In this case, the app suggests to add more moisture the skin. Other features show when it's more likely to lose weight, or calculate the period and pregnancy.

The app offers pieces of advice to prevent and solve gynecological conditions in a quick way.

Furthermore, the users can also contact online a real gynecologist to ask for more help. Dayima offers customized health service to all women.



Fig.31 Dayima user's health record function

c. Humanized reminder service

Dayima provides the functions including the daily water-replenishing reminders, magic slimming recipe push, pill reminder for the users; for instance, the users open the magic slimming function, Dayima will exclusively customize a weight-losing recipe for three meals and give a regular reminder according to the specific conditions of the users.

With Dayima, the users can keep track of their daily weight and add picture, to view in an easy way the changes in their bod. If a user wishes to interact with others, she can post a picture in a group and share her feelings. When a user wants to lose weight, Dayima sends her cheers to encourage her. After some time, Dayima checks the results of the diet in a rather caring way.

d. Pregnancy mode

Once a user starts the pregnancy mode, Dayime helps her calculating the possible date of the birth. It also checks the body temperature and the symptoms of pregnancy, suggesting what she should do and what she should not do. The app is designed to help and lead the user through the whole pregnancy.

e. The private community where you can speak out freely

The girls are full of curiosity naturally, fond of gossiping, and more focused on the privacy than the boys; "Sisters' words" function sets the interactive community in terms of the constellation, emotion, gossip tittle-tattle and body shape, and builds an absolutely private environment for female users by virtue of availability to anonymous posting. Meanwhile, this also makes them become more willing to pour forth their feelings, and speak more about various private topics freely, including the women health, family dispute, emotional problems and gynecology dispute, etc. At the moment, on Dayima, everyday about 100,000 new topics are posted.

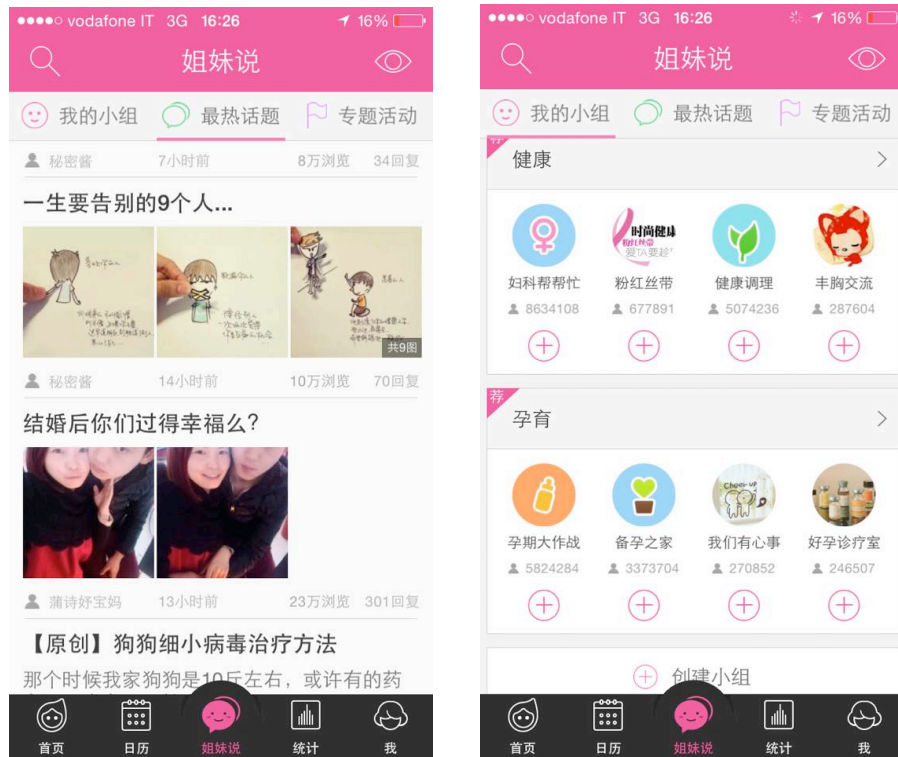


Fig.32 Screenshot of "Sisters' words"

f. Version for couples

In March 2014, Dayima released a version for couples. It's the first app developer that has created a version for couples of a women health app.

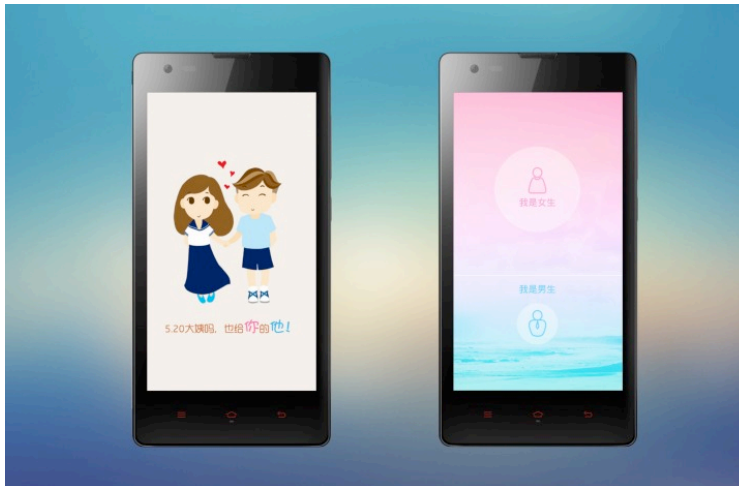


Fig.33 Dayima version for couples

Connecting and unlocking: The woman controls everything

The version for men of Dayima cannot be installed at will. The male user must ask for permission to connect to his female partner, otherwise the downloaded installation file will not prompt the setup. There are currently two ways to connect: 1. Within the same city. When a male user clicks on Dayima app, the system generates an automatic QR code which can be used to connect the accounts; 2. When the users are in two different cities it becomes difficult to meet and scan the code. In this case, the male user can send his partner an invitation code. The female user who receives it can add it to her app and connect the accounts. In both cases, the power of choice and control is completely on the side of the female user.

Automatic Menstrual Records:

The main feature of the male version of Dayima consists in showing to the male users information about menstruation, so that they know how to behave and take care of their female partner. Before the beginning of the period, Dayima reminds men to bring warmbags, ginger tea with red sugar, rose tea and even menstrual pads, to help the girl getting prepared for her period. When a girl enters her period, Dayima teaches men to cook a soup, to cure menstrual edema, to prevent dysmenorrhea and improve her mood. With Dayima, girls no longer need to ask and explain their male partners what to do.

Calculating Safe Periods:

Dayima reminds men which days are safe and when the woman is ovulating. It also shows the chances of pregnancy and tells men to take eventual precautions.

Private Chat:

There are many apps for chatting and they usually are full of contacts. The integrated chat feature in Dayima is designed instead for couples' chat-rooms, where the couple can talk about their private life without fearing other people might read what they write.

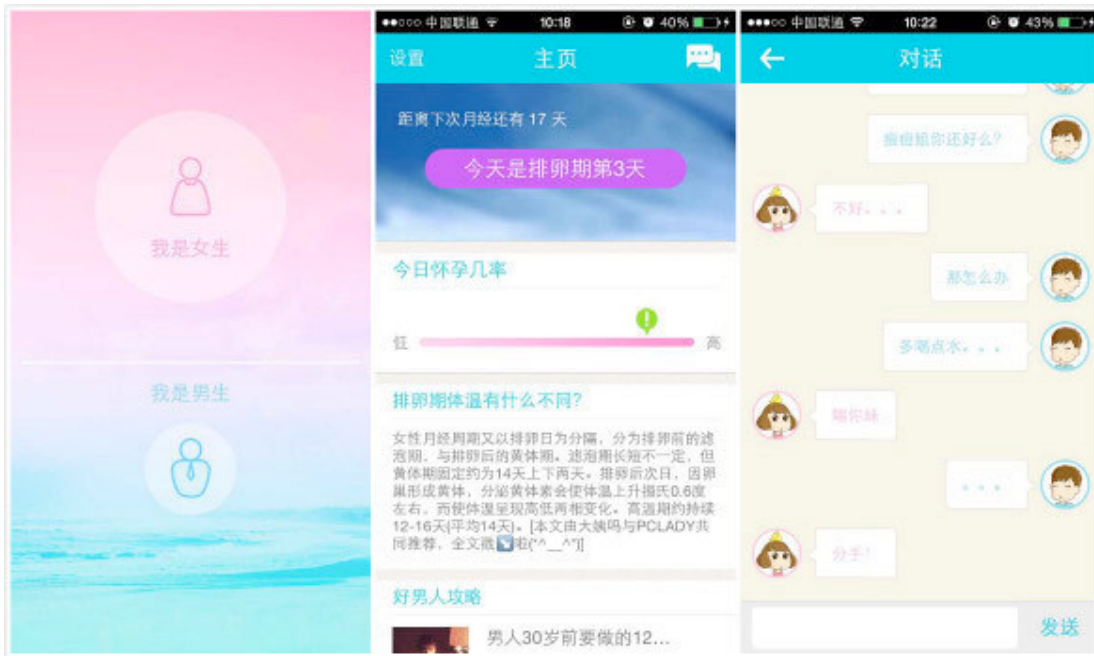


Fig.34 Dayima version for couples

g. Software + Hardware

Sunscreen Helper

In China, the fashion habits regarding suntan are the opposite of the Western ones. Chinese girls do not want to get tanned, since having a perfectly white skin is synonymous of great beauty. That's why in summer, girls usually go out with a parasol umbrella or sunscreen cream to avoid getting tanned.

Sunscreen Helper is a product from Dayima. It's only 2.8g and 23mm long but it can detect the UV rays and rate them on a scale from 0 to 11. It's small, simple to carry,

it's made of ABS and it's waterproof and washable. This product is designed for girls who have a sensitive skin, wide skin pores, oily skin. It helps in a scientific way to protect their skin.

The user selects her skin type and skin color, then Sunscreen Helper will give suggestions about what cream to use, considering the UV values. It also reminds the user to apply the cream. To meet the tastes of all women, Dayima has designed different shapes.



Fig.35 Sunscreen Helper
Fig.36 Sunscreen Helper interface



Fig.37 Different shapes of Sunscreen Helper

Smart Body Scale “Latin”:

Dayima, in collaboration with the company Digital Health PICOOC, has produced the smart body scale “Latin”, a scale that manages in a more precise way the data regarding women's health.

Latin is different from normal body scales: it can measure the weight but also different health indicators, such as body fat mass, water, bone mass, muscle mass, basal metabolism, etc. The PHMS™ (a data analysis processor) then sends all data to the app, so that the user can easily check them.

In this way, a user no longer needs to check everyday her health data. She just has to check her weight on the scale and Latin will check more than 10 fundamental parameters automatically. It's a simple habit and not time consuming at all. Also in this case, through precise data regarding health, Dayima helps women to take care of their body.

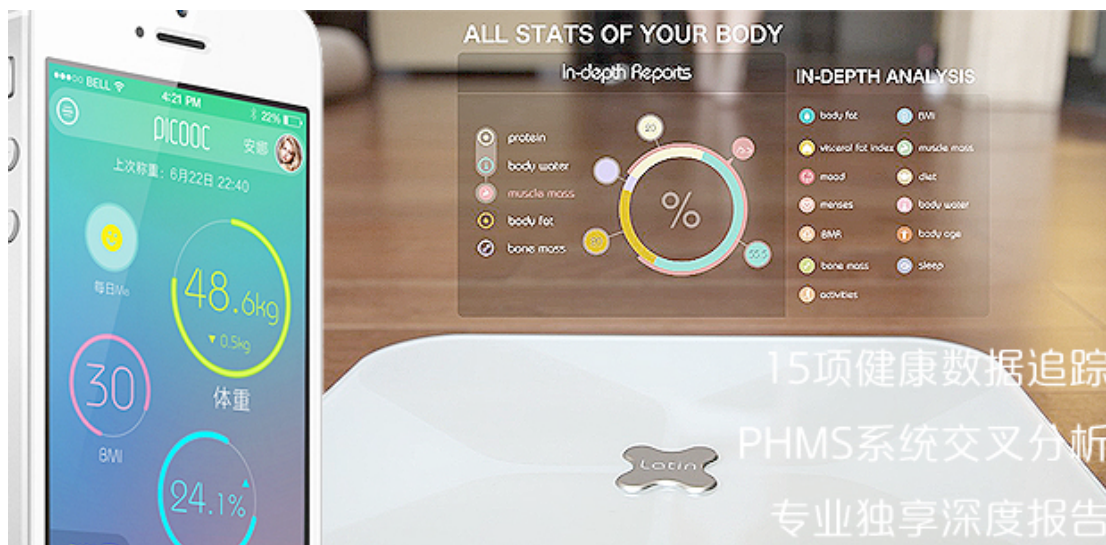


Fig.38 Smart Body Scale “Latin”

5.3.4 User-centered design of Dayima

Dayima results user-friendly also regarding its usability; when a user checks the new messages and sees she has received none, the system sends her a cute cartoony

character to say there are no new messages; if the user searches information or a specific health problem, Dayima immediately shows her many keywords she can select; the same happens when searching for a topic in the group area: Many keywords makes so that the user can not get lost in the threads and find what she needs.



39



40

Fig.39 “ No message” page
Fig.40 Dayima search page

Dayima is so popular among women because its design is totally centered on them. The designer of this app, Chai Ke says: “our main focus is health. We respect each single woman and do not treat them as a generic group. Each woman is a single, different person. Each woman is special and the menstrual period of each woman is different from the other. We care about their needs and our purpose is to help each user.”

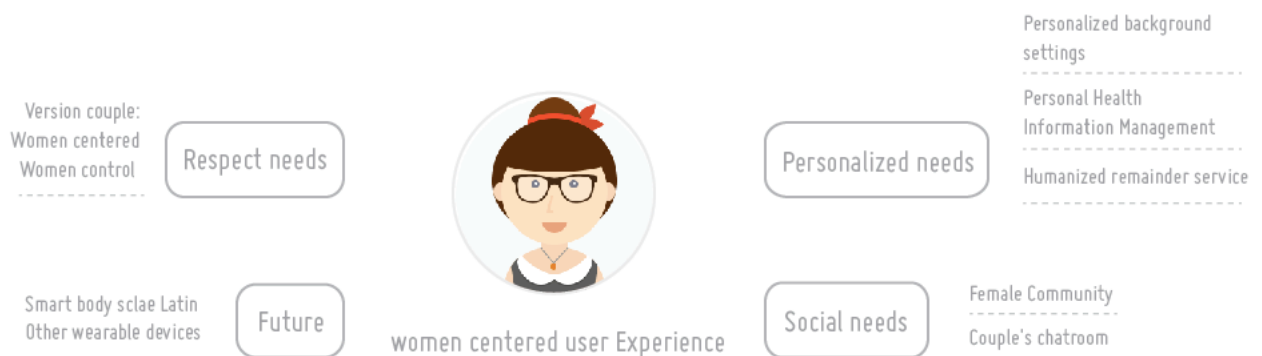


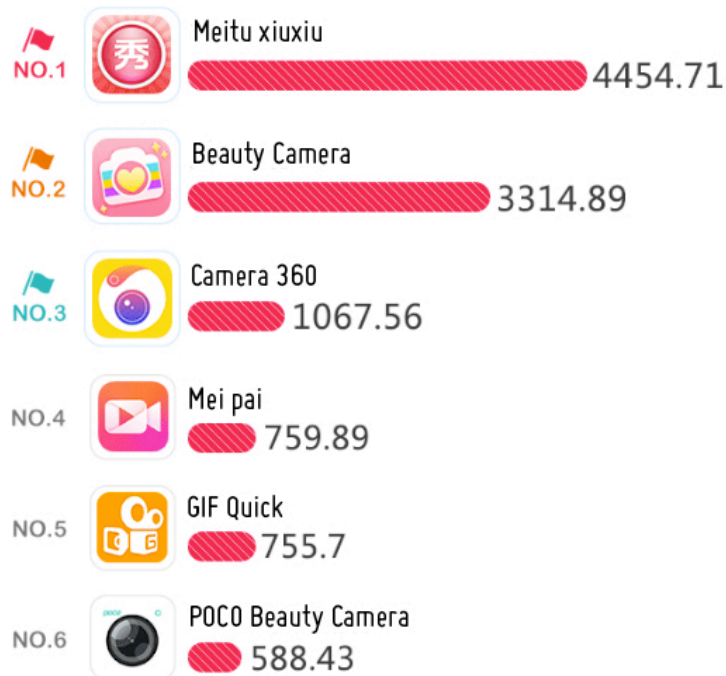
Fig.41 Dayima women centered design

5.4 Photographed app: Meitu xiuxiu



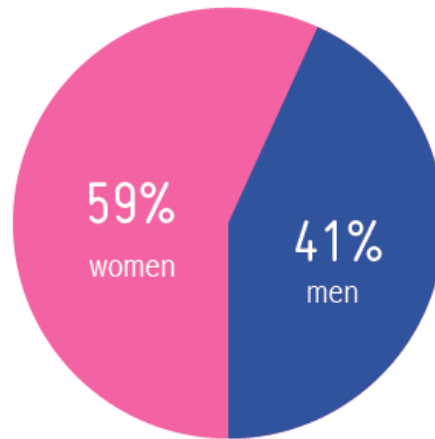
Fig.42 Meitu xiuxiu logo

As an excellent APP with more than 100 million mobile users, Meitu xiuxiu is definitely a successful image processing application. It is a product of Xiamen Meitu Technology Company, and can be used on PC, Android and iPhone. The company also launched several other products: Meitukankan- a free image viewer, Meitupaipai- camera selfie software, Meitutaotao- an image batch processing software for online stores, and Meitu Makeup- a powerful make-up software.



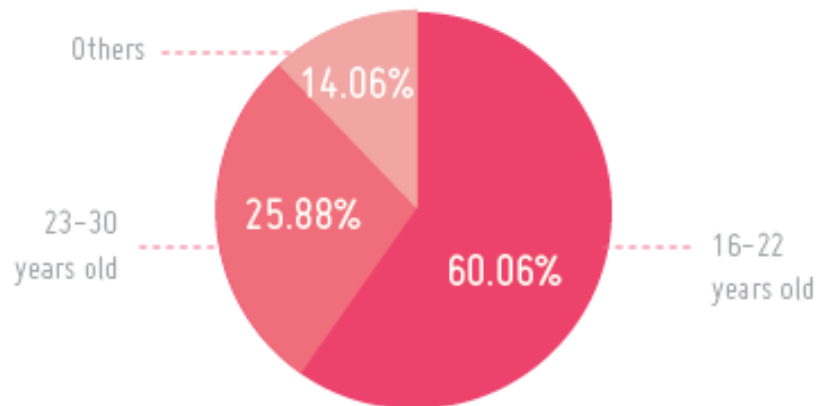
Tab. 18. Analysis on active user number of similar App by December, 2014
Active user number: More than once in launching of app of the month (unit: 10,000)
Source: EnfoDesk Analysis International

5.4.1 User analysis



Tab. 19 User gender
Source: EnfoDesk Analysys International

Women account for 59% of the users whereas men account for 41%. It is clear that women like to take pictures of themselves more.



Tab. 20 User age
Source: EnfoDesk Analysis International

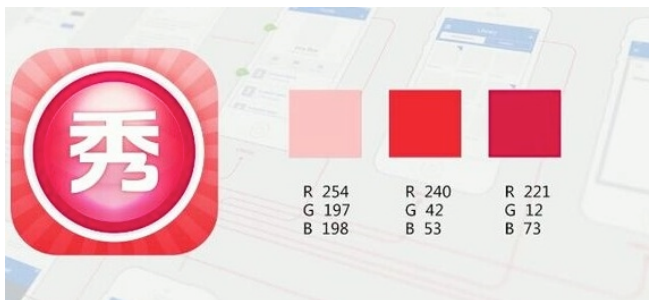
The user ages are mostly between 16-22 and 22-30, and the 16-22 years old users account for more than 60% of the total number. 86.48% of users are from 16 to 30 years old.

The number of photos shared on social network platforms via the Meituxiuxiu from mobile phones is about 600,000. As for the functions of Meituxiuxiu used on mobile phones, make-up accounts for 36.14%, beautifying accounts for 34.18%, and others account for 29.68%.

From the data above we could see that young women are the main users of the image processing software. A cell phone photographing survey conducted by Tencent Mobile Experience Design Center (MXD) shows that 44% of people are used to process images with their cell phones, and 73% of these people use professional image processing software. Of all the image processing applications used on the mobile end, Meituxiuxiu ranks at the top with the overwhelming 94% usage ratio.

5.4.2 Interface analysis

a. color



43



44

Fig.43 Meitu xiuxiu logo's color

Fig.44 Meitu xiuxiu use of color

Meituxiuxiu's logo is pink, making it easy to categorize the app as designed for women. On the function selection interface the software uses high fineness colors and compact icons. Black, white and grey colors are adopted for the operation interface.

b. Theme Settings



Fig.45 Meitu xiuxiu different theme settings

In terms of the application background, Meituxiuxiu provides multiple choices for users. Users can select the background pictures based on their preferences, therefore meeting women's needs of personalization.

c. Navigation Model

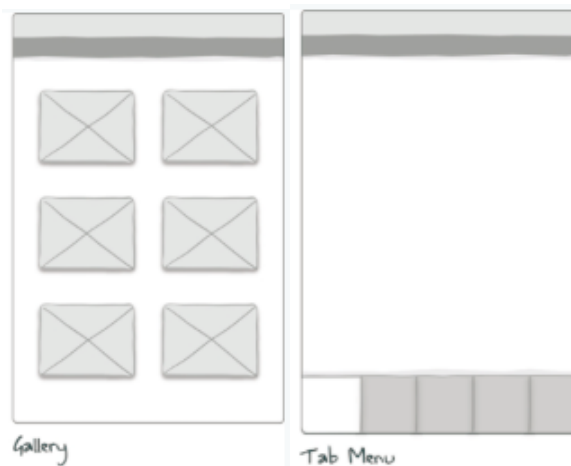
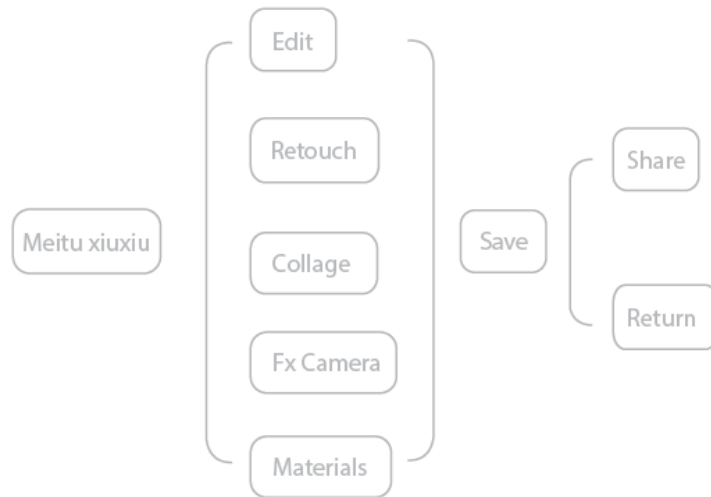


Fig.46 Meitu xiuxiu navigation model

The navigation mode of Meituxiuxiu in the function selection page is gallery, which displays the core functions directly, and in the operation page Meituxiuxiu uses tab menus, making the switch very easy when being used. The design of icons is simple and clear, making users know their functions at first sight. Tabs are at the bottom of the interface, which makes it easy for users to operate with their thumbs. Generally

speaking, in terms of interface design, Meituxiuxiu is quite straightforward and clear, and this makes it easy for users to see and operate.

5.4.3 Functional analysis



Tab. 21 Meitu xiuxiu Operation Flowchart

a. Edit

Auto enhance:

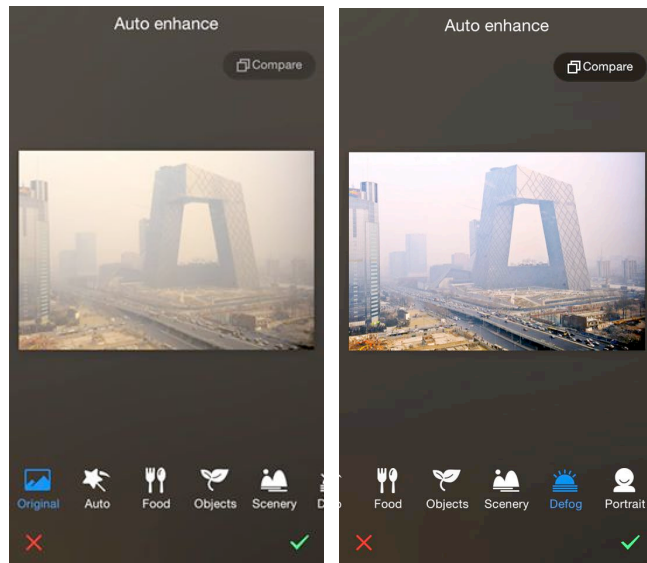


Fig.47 Before and after comparison of auto enhance

Options like automation, food, still objects, scenery, defogging and people are set in the intelligent optimization function. The function helps users to optimize various images within one second. As China is facing severe smog problem, many photos are blurry and the defogging function allows to show a clearer sky and more obvious layers.

Filters:

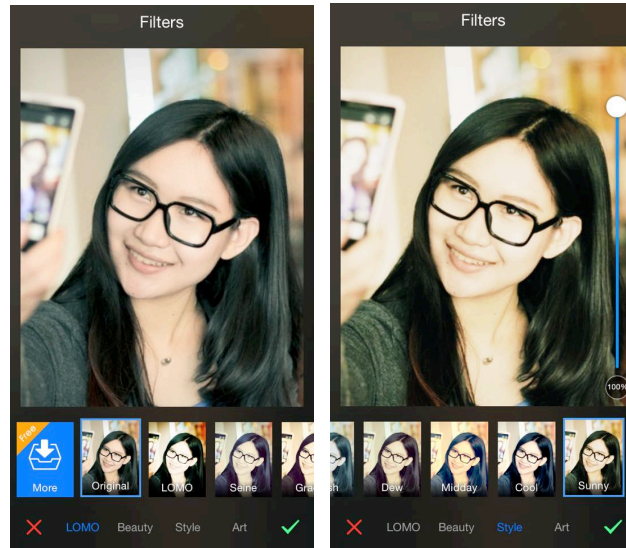


Fig.48 Before and after comparison of filters

The special effect function include many image beautifying functions like lomo, beauty, style, arte, etc, helping users quickly adjust photos to the colors and styles they like.

Frames:

Provide magazine covers and frames with special effects like bubble, flower, firework and so on.

Magic brush:



Fig.49 Before and after comparison of magic brush

With the magic pen function, users can use their photos as canvas and draw their own images with special effect brushes like firework, snowflake, heart, etc.

Mosaic:

For parts of the images that you do not want others to see, Meituxiuxiu provides the mosaic function, making part of the image become mosaic.

Text:

Users can input words they like into the images, and select beautiful word frames and fonts of their choice.

Blur:

Users can adjust the blurring level and style of the image background based on their preferences.

b. Retouch

Auto Retouch:

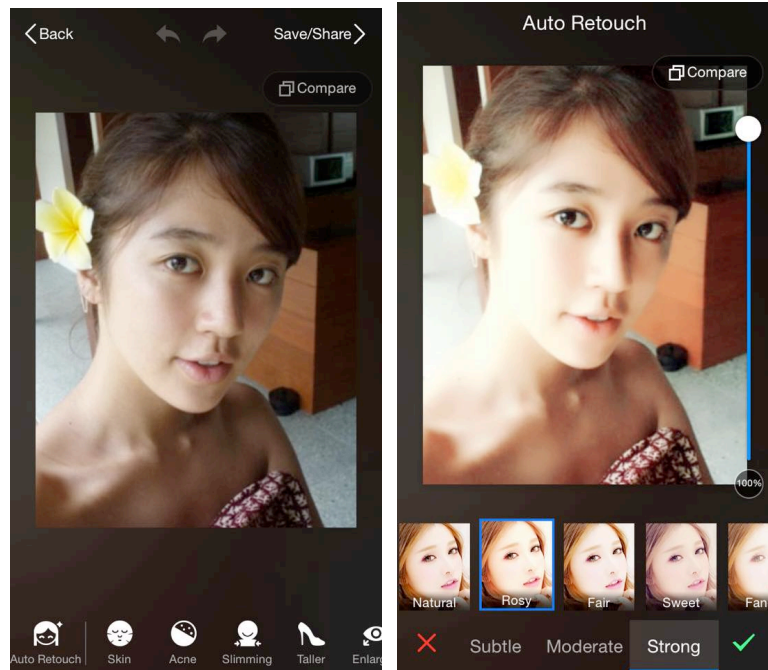


Fig.50 Before and after comparison of auto retouch

One of Meituxiu's features is to help 'lazy' people. All the functions are quick and convenient, providing the quickest way to beautify the photos of women who like to be beautiful but do not want to waste time on Photoshop. The one-key beautify-face function helps users beautify skins, adjust photo colors and brightness, etc in a moment.

Skin:

Like the dermabrasion in Photoshop, users of the app can use one button to make the skin in the image smooth, and adjust skin smoothness and color based on their preferences.

Acne:

Just put the brush on pimples and the system will intelligently replace the pimples with colors similar to the skin. This function helps users get rid off the pockmarks and defects easily.

Slimming:

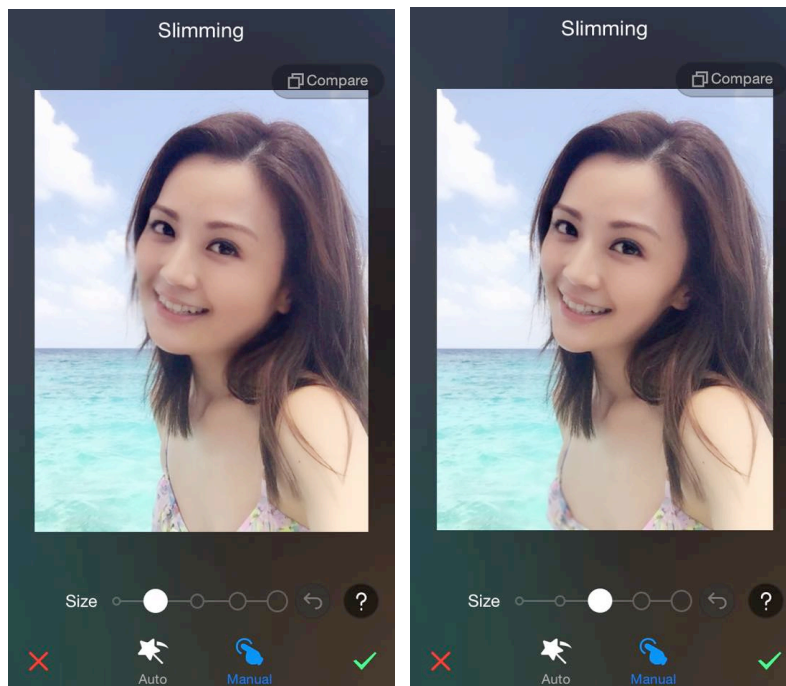


Fig.51 Before and after comparison of slimming

Imitating the liquefaction function, users of the app can use brushes of different sizes to adjust their facial and body forms. Most Chinese women see the pointed chin of 'oval face' as the ideal of beauty, but many Chinese women appear flat when compared with western women. That's why women in China often edit in the photos the facial and body forms in a way they like before publishing them.

Taller:

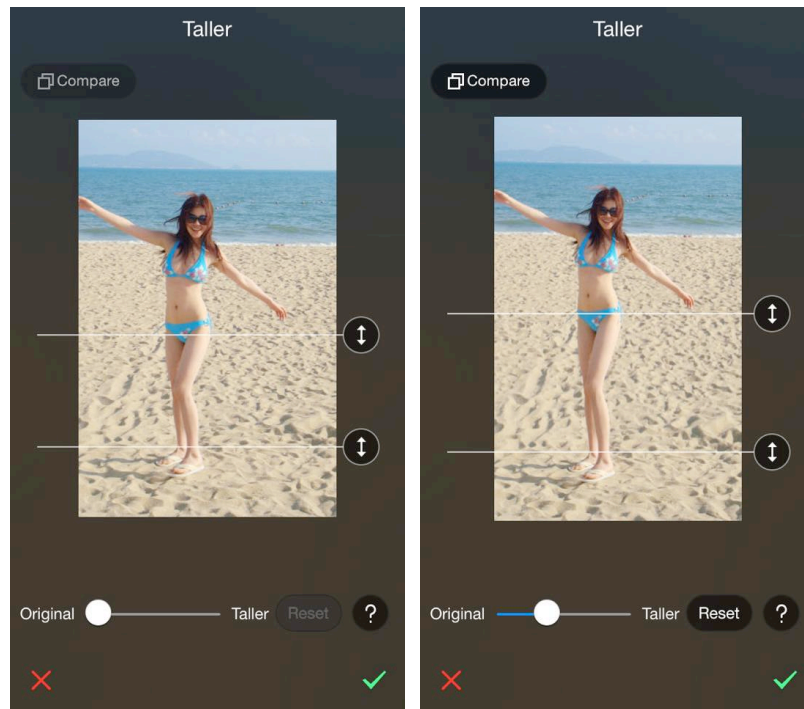


Fig.52 Before and after comparison of taller

Since the slimming function can only process facial forms and bodies, and apart from perfect skin, exquisite faces, women want long and beautiful legs, to meet this fantasy and requirement of women, there is a drag feature that increases the tallness in photos. Select the drag area, click and drag the cursor to the ideal leg height, and during the process the image details won't be broken, and there is no obvious deformation.

Enlarger:

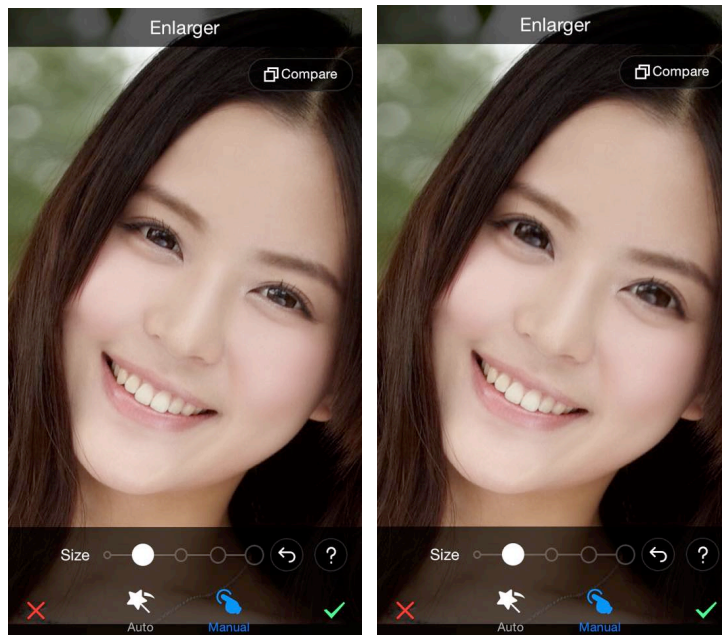


Fig.53 Before and after comparison of enlarger

Chinese women prefer big eyes like dolls, but some women are born with single-fold eyelids. To make the eyes look bigger, Meituxiuxiu launches the eye-enlarging function, whose effect is like the liquefaction of Photoshop. Users can select the size of the brush, aim the central dot of the brush at the eye, and by constantly clicking, the eye can be enlarged until the user is satisfied.

Dark-Circle:

Users can put the brush next to the under-eye puffiness area or black eye area, paint the area that you want to brighten, and then the black area in the photo will be gone.

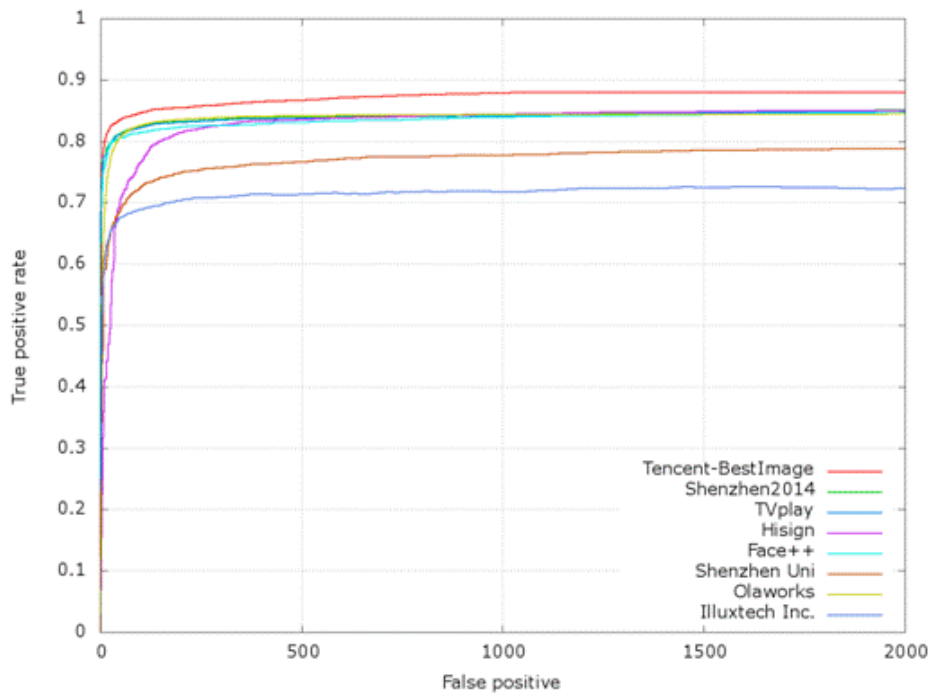
Brighten:

Users can put the pen brush onto the eye area, and by constantly clicking the eye, the contrast of the eye area will be enhanced automatically and the bright area will become brighter, making the eyes more bright.

Face recognition technology

Face recognition is a key technology in the face-beautifying module, and the accuracy of the technology directly determines whether or not the face-beautifying software is good. Face recognition includes four parts-the collection and detection of facial images, pre-processing of facial images, feature extraction and match of facial images, and recognition. The face-beautifying module uses the face detection technology. It mainly recognizes the multiple feature points of people's five sense organs and facial forms, and utilizes the feature points to conduct the face-beautifying work. Meituxiuxiu adopts the face detection technology provided by Face++.

The following figure shows the accuracy chart of face detection recently published by FDDB, the most authoritative face detection evaluation platform.



Tab.22 curve graph of recalling rate and accuracy rate
 Source : Face Detection Data Set and Benchmark

Data shows that the face recognition technology of Meituxiuxiu is above the medium level. Here is how Meituxiuxiu's face recognition function processes the data: It gives the user the option to adjust manually each time when the user adjusts each small detail. By doing this, the technology insufficiency is reduced, user independency is increased, and more importantly, for some parts that don't need to be beautified, there is no need for the face recognition's precise calibration. In this

way, it saves time for the user, reducing the number of clicks in several pages, and making the user more focused on the current operation.

c. Collage

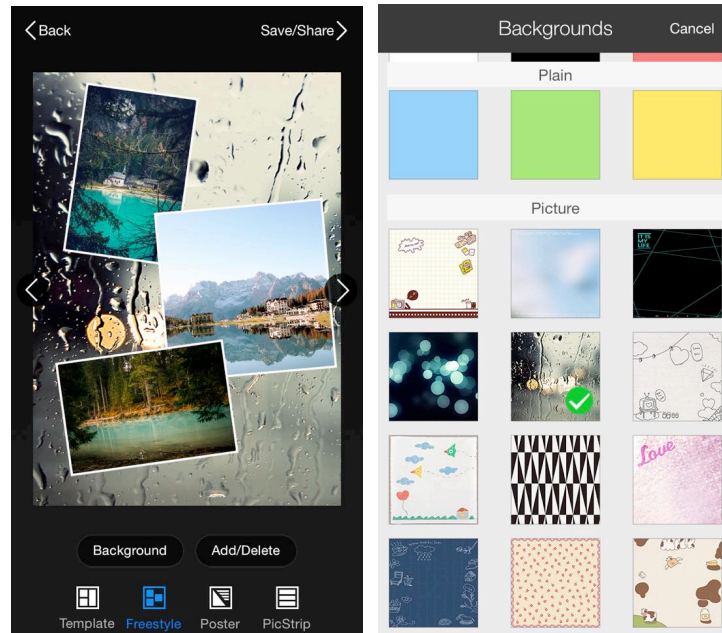


Fig.54 Meitu xiuxiu collage

The image-connecting function incorporates Template, Freestyle, Poster, PicStrip, etc. It provides a lot of background images, cartoon materials, and ways to connect images.

d. FX camera

Universal camera function includes special effects like portrait, food, scenery, still objects, etc. It allows to “shoot-and-beautify”, then save the post-shooting step for users.

e. Materials

Users can download various material packages here, including various frames, special effects, background patterns, and even mosaic styles, therefore meeting women's psychological needs of decoration and have their own personalities.

f. Application of Luck in Love Affairs



Fig.55 Meitu xiuxiu application of luck in love affairs

To enhance user loyalty, Meituxiuxiu developed a series of apps about tests, like the love affair test, in which the user can upload his or her photo and the system automatically calculates the user's love affair index, and attaches a humorous remark on it. The user can share the calculated love affair index on his or her other social network pages.

5.4.4 Usability Design

Advantage:

1. In the portrait and image beautifying interface, when the user is editing the photo, the confirm and delete buttons are at the bottom of the interface, making it easy for the user to operate with one hand.
2. There is an 'add/delete' button in the lower right corner of the operation interface of the image-connecting function. This kind of design is very helpful. If the user wants to add or delete an image, he or she can be spared the trouble of clicking the upper left return button, and instead he or she can directly click the add/delete button to go to the image selection interface.

Drawbacks:

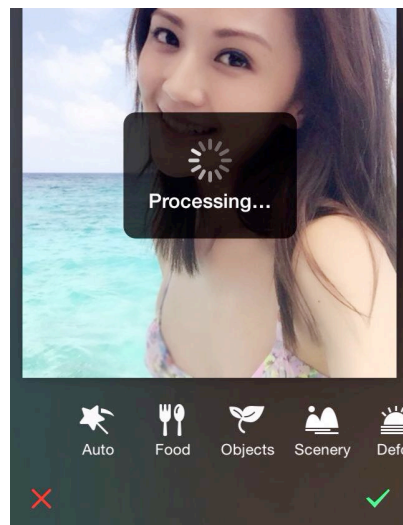


Fig.56 Meitu xiuxiu processing schedule indication

1. Not so friendly progress hint for processing: Meituxiuxiu is a user-oriented product, and its style is deeply targeted to women, but the progress pattern is the default 'chrysanthemum effect' of IOS and the hint word is a cold 'processing', A new and more friendly interactive effect should be developed.

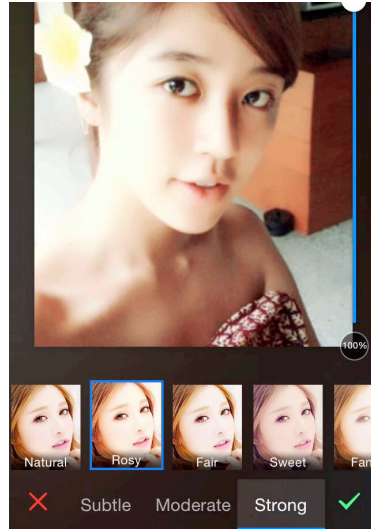


Fig.57 Meitu xiuxiu filtering special effects

2. It is not possible to see a preview thumbnail with current image filter effects: When the user is selecting a filter, he or she often clicks, watches and changes the filters one by one because he or she does not know the real effects. The cost of this operation is too high. The effects after using the filter should be previewed in the form of thumbnail images.

3. The order of filter effects is always the same: The effects that are frequently used by a user may be at the end of the line of the effects. If so, the user has to click and drag several times to get to the effects he or she wants, therefore the efficiency is low. It is better to re-organize the effects based of frequency.

4. During the image-connecting operation, the photos have to be clicked one by one. Sometimes the backup photos are adjacent one to the other. The function of swiping right to select more images and swiping left to deselect the images should be added.

5.4.5 User Experience advantage

1. Simplicity

Simplicity is the core of Meituxiuxiu. The start-up time of Photoshop is long, and it occupies much of the system resources. Photoshop is complicated to operate, expensive to learn, and it takes a long time before you can finish your work. However, Meituxiuxiu is very simple even for an amateur without any professional

knowledge. After you start the software, an illustrating interface will guide you to beautify images, and the user can easily get the job done. All of this meets the vanity of women and the lazy nature of human beings.

2. Personalization

It is simple but not defective. Meitu carefully analyzes the most common functions used by users during image processing, and how to get the professional photography effects in a short time. It comes with rich material library and filter library. Meitu has many filters to meet users' various requirements for image styles. And some additional materials like images for connecting, frames, accessories, texts, etc provide much more potential for users.

3. Social Network

This aspect enhances user loyalty. After the editing, there is a 'save' and 'share' option in Meituxiuxiu, that allow the user to share the images onto major social networks to increase user activeness and loyalty.

5.4.6 Design of Related Products



Fig.58 Meitu2

Meitu 2 is a second-generation face-beautifying selfie cellphone launched by

Meituxiuxiu in April, 2014, and is designed specially for women. The V shape appearance and the pink and bright shell makes the whole cellphone both harmonious and magnificent. The 13 million pixel front face-beautifying camera, the 13 million pixel rear camera with ultra-large iris lens, and the light-compensating lamp make the photos bright and vivid even when the light level is low. Meitu 2 is equipped with world-leading face recognition system. It does not only recognize one person, but also many more people; It shows the preview of the effects of face beautifying in real time, and supports 12 face-beautifying techniques: Intelligent form-beautifying, 3D of the 5 sense organs, skin improvement, eye brighting, dark eye circle removal, etc. Meitu 2 also supports face-beautifying for videos, could capture the faces appeared on the video in real time, and conduct constant face-beautifying calculation, making the video just like a movie. Meitu 2 is supported by the brand new MEIOS system, and equipped with the unique system UI. The interface icons are pink, and the phone really attract women from the shape to the functions.



Fig.59 Meitu2

Meitu 2 is the second generation face-beautifying cellphone after Meitu kiss, and the change is mainly in the shape and color. Meitu kiss was gradually pulled out of the market after being launched in less than 3 months, and even though Meitu 2 has better sales figure than Meitu kiss, there is no price advantage.



Fig.60 Meitu kiss
Fig.61 Meitu 2

According to the survey results of IDC, women pay more attention to the weight, size and the simplicity of the cell phone. Also the camera pixel and physical design has also been taken into consideration. However, men value the cell phone system and network more.

Research results of Strategy Analytics show that in Europe 51% of women want to choose the smartphone based on their colors, while the ratio is 64% in China. The 2012 China Women Smart Phone Development Pink Book indicated that what disappointed women mainly were the shape, application and battery of the smartphone, and also the complex phone app and operations.

Even though Meitu 2 improved in the shape, it still failed. Speaking from the fundamental psychological needs of women, the 2 main causes are the following:

1. Even though most of the girls will process their selfies, using Meituxiuxiu to beautify the photos is not something they could brag about. They hope that other people think that their photos have not been processed. It is almost straightforward to tell others that your photos and videos are all have been beautified when you use this face-beautifying phone.
2. Meitu kiss and Meitu 2 are designed for women, but what cellphones really mean to women?

Nowadays when Chinese women buy a cell phone, the powerful function is not the decisive factor. The process of selecting a cellphone by women is a subtle and complicated self-identification process. Subconsciously, they will think: if I buy this one, what signal will be sent to others; by using this cell phone, who am I to others. Meituxiuxiu is a practical tool, and the Meituxiuxiu cell phone with powerful selfie function is still a practical product, but women cellphone is more of something that could be shown off. How could a face-beautifying cellphone meet their fundamental needs? At the same time, the cellphone product has strong exclusiveness. Meitu 2 is not attractive enough to let girls give up iPhone, Samsung, Sony, etc, which causes a phenomenon of using Meitu 2 as a back up phone for photoing for some girls, but most girls do not want to take 2 cell phones out.

5.5 Apparel web site: Meilishuo



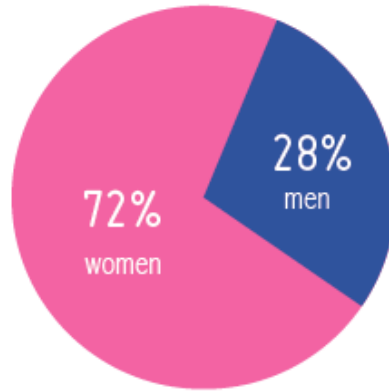
Fig.62 Meilishuo logo

Meilishuo, a shopping guide for the Chinese women.

Meilishuo.com was founded in 2009, specializing in women's fashion. It's the China's largest community-based women's fashion media and was founded by Xu Yirong in Beijing Zhongguancun in November 2009. The name of Meilishuo means "Beauty Talk/ Conversation on Beauty". This website helps Chinese women to find the ideal clothing, cosmetics products, bags, shoes, accessories which are best suited to them. Users can search for experts, shops, group buying, and they can also share online shopping links and information on their favorite products. When people surf the website Meilishuo, it's just like walking in the shopping mall.

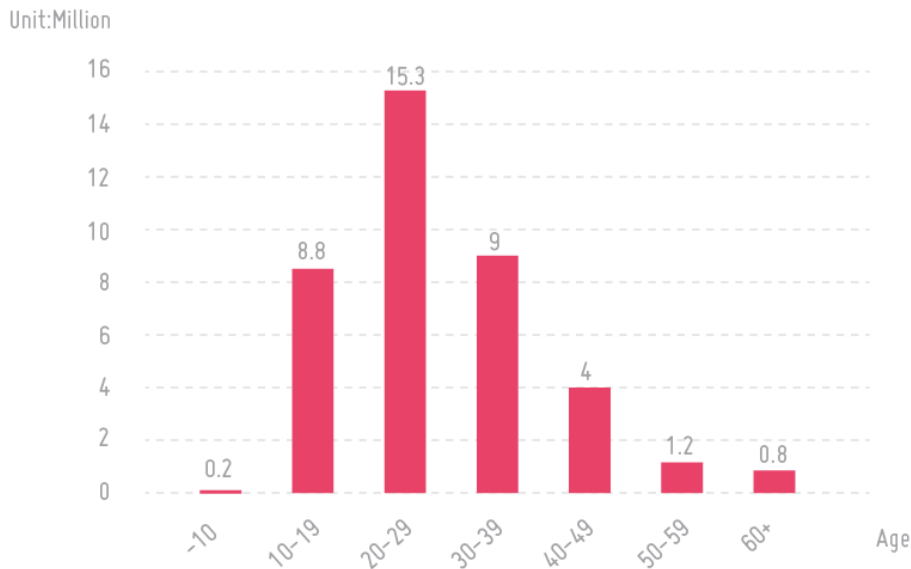
The number of registered users has reached 150 million since its launch in March 2010. The daily user volume is 3.2 million while the daily number of page views is 164 million, and per user traffic is averaged at 51 pages. Every month, the website brings about 700 million yuan to Taobao's turnover.

5.5.1 User analysis



Tab.23 User gender

Source: EnfoDesk Analysys International



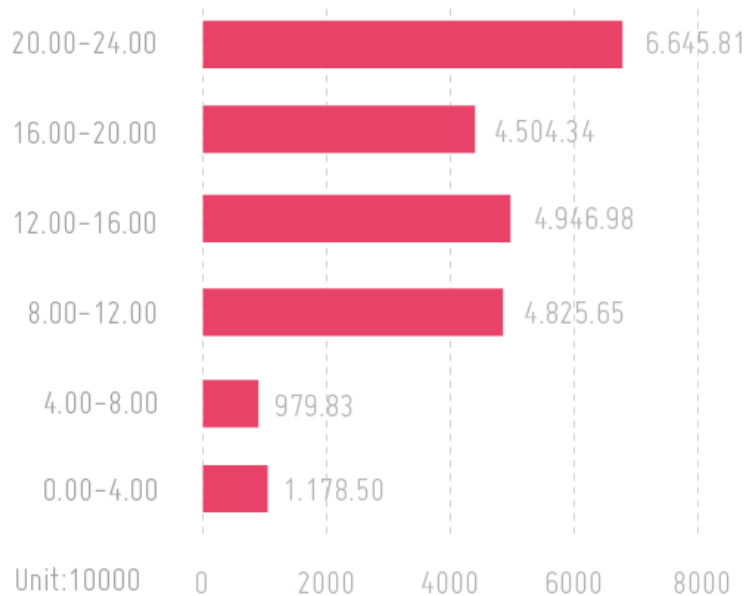
Tab.24 User age

Source: EnfoDesk Analysys International

Meilishuo focused on 20-35 years old white-collar and semi white-collar women only, who have the leading spending power in China. According to statistics I

Research China, 83.7% users of Meilishuo have education more than college, Around 35% of Meilishuo’s users are in top cities as Beijing, Shanghai, Guangzhou and Shenzhen. Also a lot of users are in booming areas including Jiangsu, Zhejiang and other provinces in China. Most of these users are the office staff, proportion is 42.6%, the average monthly income is 4,000 yuan, the average household income is 10,992.7 yuan.

There are three types of Meilishuo users: Super-users who produce most of the content and use the platform as conduit for personal expression. These users can be celebrities, designers, or just particularly engaged users. Then there are the consumers who regularly browse and share content from the catalogs, serving as viral conduits. And finally, there are the “mass users,” who come to the site on a casual basis whenever they need to buy something.



Tab.25 Time of using of Meilishuo
Source: EnfoDesk Analysys International

Statistically, the peak visiting time of Meilishuo is around 11 o'clock in the evening, and the peak lasts about 24-26 minutes. This indicates that girls usually spend half an hour on Meilishuo, and they like to visit Meilishuo at night. While visiting, they save and forward.

5.5.2 Interface analysis

a. color



Fig.63 Meilishuo use of color

Meilishuo's logo is a flower with her mouth open, meaning conversation on beauty. Meilishuo is mainly pink, with background of light grey, making it both lovely and elegant.

b. Meilishuo navigation



Fig.64 Meilishuo first-grade navigation

The first level navigation mode is the horizontal navigation on top, with menus: What's hot today, clothes, shoes, bags, accessories, home furnishing, cosmetics, special offer, group purchase, selected stores, magazine.

The design of top horizontal navigation bars is often used by websites, and this could save space, make the content clear, and enable the user to jump to other pages when he or she is visiting the home page.



Fig.65 Meilishuo broadside navigation

The side navigation of Meilishuo is a tab navigation, set on the left and shown vertically. It is the further classification of the first level navigation. It is rational this way because users view from up to down. This makes the user continue viewing after knowing the general idea, and the cognitive cost is small.

c. Meilishuo way of browsing



Fig.66 Meilishuo Screenshots

Like Pinterest, Meilishuo adopts the infinite scrolling layout. As Meilishuo needs to attract women with a lot of quality images, it is quite suitable for Meilishuo to use this kind of layout, and it is both classy and attractive for image display. Users could gain more information in a short period of time. The high-low difference of pictures, and the free movement of your vision could ease visual fatigue. Most importantly, it is very convenient for users in interactive operations, and users pay more attention to the content.

5.5.3 Functional analysis

a. View Products

Users can search the products they like by viewing pictures, reading magazines, browsing stores, taking advices of talents, etc, and then buy products on Taobao. There are 6 sub-sections under this- section-clothes, shoes, bags, accessories, beauty, home furnishing, basically covering all the aspects that fashion women may like.

b. Flipping of Magazines



Fig.67 Meilishuo flipping of magazine page

The magazine office accounts for much of the UGC, and it is designed to create its own circle of style, attract girls with similar interests, and help girls find their own styles. Users can create a magazine on their own and browser or follow other users. The categories of the created magazines are named with clothes styles that are well known by Chinese girls: European, sweet sugar, antique, personality, Japanese, , mori girl, etc.

c. Talents

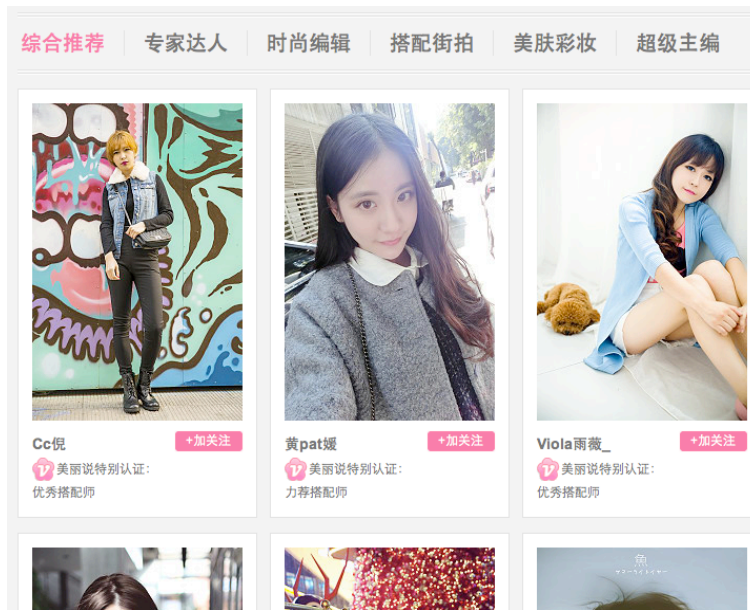


Fig.68 Meilishuo big gun page

Users could find talents in different fields, like makeup, street style, clothes editing, etc. In this section both the mix and match display from users and that from Internet celebrities are included. This could meet users' need of showing themselves. At the same time, talents are also opinion leaders for ordinary users, therefore bringing fashion and users closer.

d. Coupon and Special Offers

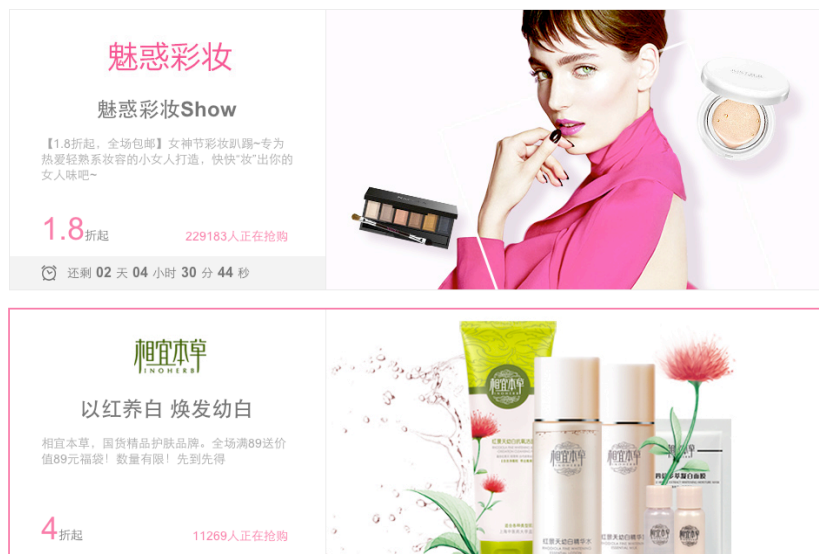


Fig.69 Meilishuo Coupon and Special Offers page

Provide the discount information and group-buying information from all kinds of merchants; also promote the merchants' traffic and sales based on these channels.

e. Good Stores

According to the popularity degree, user ratings and sales volume, Meilishuo screens and classifies the stores, integrates the top 100 stores, provides the convenience for users' selection and saves their time.

f. Fan Club

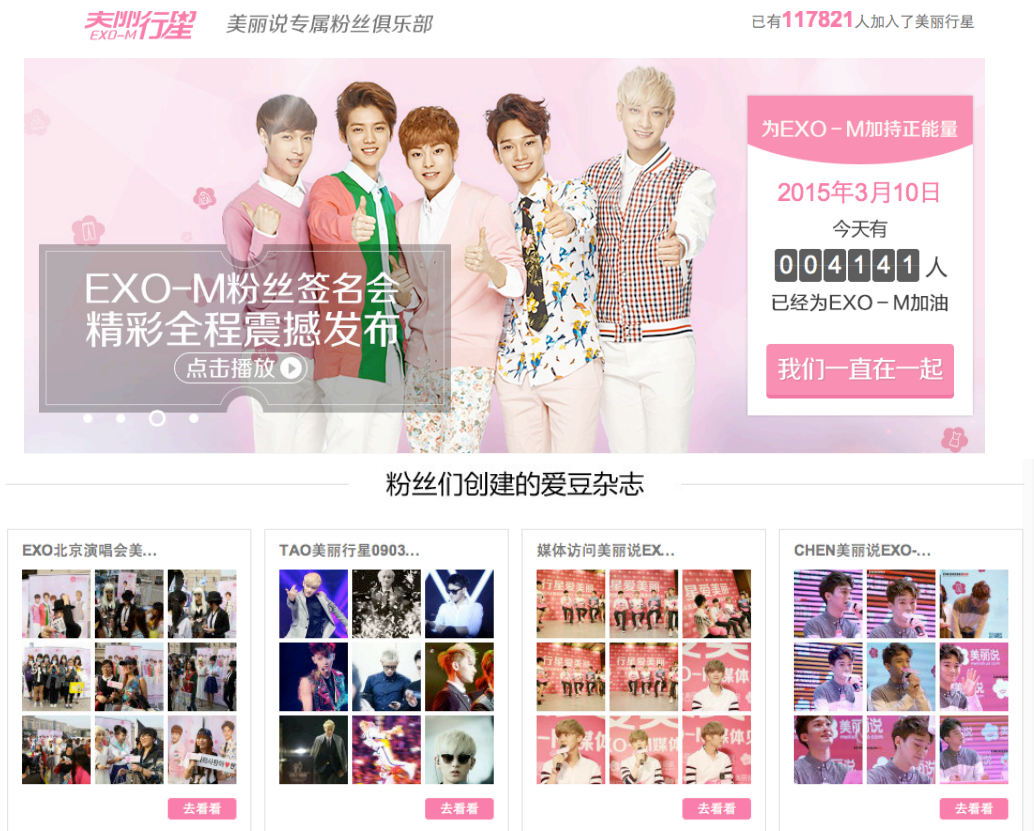


Fig.70 Meilishuo fan club page

Meilishuo invites the most popular group EXO from South Korea as the spokesmen,

holds various activities, including the signature event, anniversary celebration, birthday celebration, etc; and provides a variety of interactive activities and gifts for fans in an effort to make the brand closer to the users. In the section of Fans Club, the star news tracking and star magazines created by fans are provided for users.

g. Personal homepage

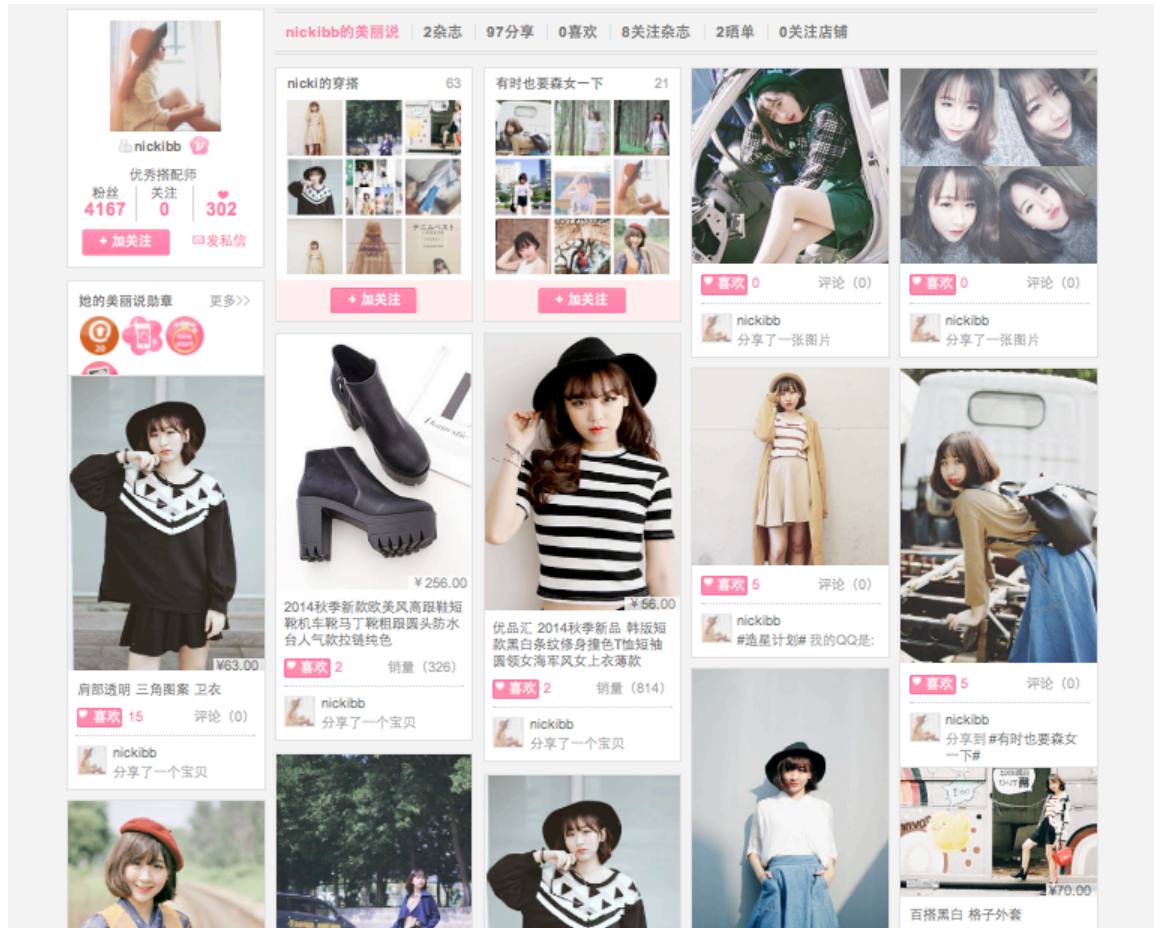


Fig.71 Meilishuo individual page

The main contents of Personal Homepage include personal journals, sharing, preference, and possibility to show what you buy, etc. From the perspective of vision, Meilishuo puts the personal information on the left, and shows the information content in the middle with block-based pictures, so as to highlight the information display; this way is reasonable, because the users are more desired to check the information released by other users for access to the personal homepage; however, Meilishuo lacks the interactive area on the personal homepage, and is

insufficient regarding the user loyalty.

h. Show Your List

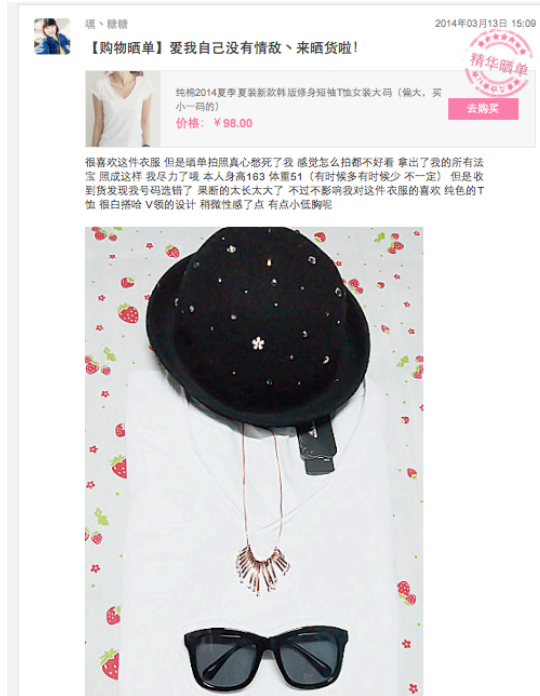


Fig.72 Meilishuo show your list page

In the personal homepage, the most important function is to show your style. The users can show what they buy to everyone and share the experience with other users, and other users also can make comments, like, collect and buy these items directly; while showing your styles, the items you show must be the purchased, so that you guarantee the quality of what you buy and the comment-based reference is valuable for other users.

5.5.4 Advantages and disadvantages of the user experience

Advantages:



Fig.73 Meilishuo registration page

1. Meilishuo will recommend a lot of magazine agencies and good friends to the users at their first logging, and instructs the users to carry out the activities in the community for raising the user activeness and loyalty.
2. Shopping search, navigation and search functions are more complete and consistent with the users' habits. Basically, the users can easily find their desired styles and designs according to the navigation and search. For instance, when the users are searching, Meilishuo provides the relevant hot search keywords and guidance to special areas, and guides the users to click on the more detailed and accurate special pages for browsing; meanwhile, the users' search results can be sorted according to the popularity degree, time and price.
3. Got Talent and magazines are high in quality; Meilishuo focuses on a large number of Got Talent users with more developed and different styles. The access to these Got Talents brings a lot of fans to Meilishuo, increases the appeal and popularity of the website. Meanwhile, Made-by-Got-Talent contents also become not only an important part of the website contents, but also one of the most important

focuses.

4. The visual sense is strong; The webpage style is prominent, mainly dominated by pictures and supplemented by text in different sections; The page is tidy, with unified style and outstanding.

Deficiencies:

1. Classification of information: When more and more information is associated with the user, it becomes difficult to determine what information the user would prefer to see. It is necessary to give an in-depth service in accordance to the user's interests.

2. Meilishuo positions itself as Social Media for women's fashion; In fact, Meilishuo "community" is a way to collect and show your personal styles, besides special areas for Got Talent and zones for fans; It lacks a community in the true sense, and the social elements, in addition to preference and attention, basically have no user interaction function.

What appeals to female users: The answers of Meilishuo:

1. Pay attention to appearance, and have strong desire for beauty.

Women are born with strong aesthetic talents and aesthetic psychology. Women are easier to be attracted by the appearance of things than men. They are more inclined to make choices based on sensation; the appearance, style, color, packaging, even a small adornment can influence their decision. Meilishuo provides massive clothing pictures for female users, and meets the female demand of freshness visually and psychologically.

2. Make decisions: There are great differences in decision-making behaviors between women and men; women's decision-making process keeps running, so women are more willing to ask for opinions to their friends; when shopping, women usually like to go shopping with others, but their online shopping is done alone. Meilishuo helps women to find users with similar styles, and helps women to make correct decisions through Got Talent recommendation and experience sharing from other users.

3. Release the pressure: Now, due to the double roles of the working women and traditional family women, the women become stressful and tired; shopping is one of

the best ways for women to enjoy. Sometimes, the use of Meilishuo is not purposeful for women; they just want to browse the online stores; the good store recommendation and magazine recommendation in Meilishuo section greatly meet the demands of women.

4. Due to the sensitivity to the price, most women are conscious of household management; they shop around and attach great importance to the cost/performance ratio; Meilishuo provides a lot of discount information and group-buying information.

5. Sense of identity: Before a purchase, women not only need to ask for the opinions from others; after the purchase, they are also very willing to share it with friends and show it off; they need to be identified by others; the function of showing what you buy in Meilishuo section meets the psychological needs that the female users are willing to share.

6. Star effect: Many girls tirelessly worship and love TV stars, especially the Korean ones; the Fans Club of Meilishuo meets the fandom psychology of these girls.

5.6 Food app: Xiachufang



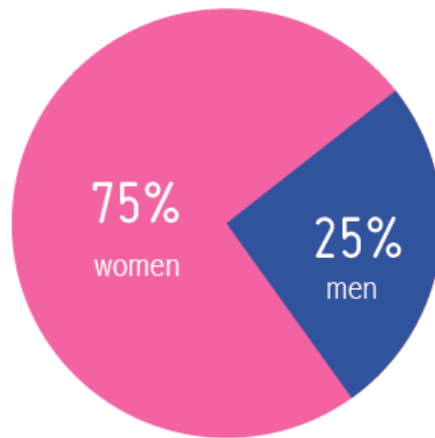
Fig.74 Xiachufang logo

Fig.75 Xiachufang page

Xiachufang menu is a simple and practical gourmet application and helps users to find what they want to eat, search exquisite recipes, use the purchase list to buy the ingredients, and share their home-made food with their friends.

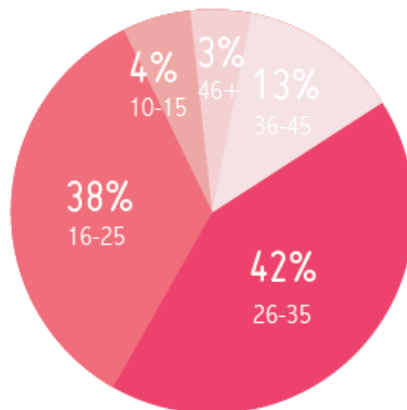
At present, there are about 40 million mobile end users; the food and drink application list ranks the top five; according to Alexa data, about 200,000 users have access to the web end every day, and rank about in the 6000th all over the world. According to the Xiachufang statistics, 120,000 users have uploaded their own works to the Xiachufang Menu; on average, there are 7 user works under each recipe.

5.6.1 User analysis



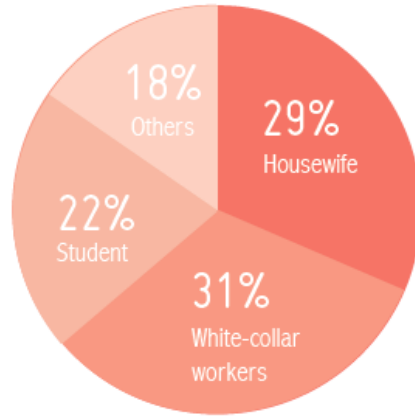
Tab.26 User gender

Source: 2014 Chinese Food Network Development and Trend Report



Tab.27 User age

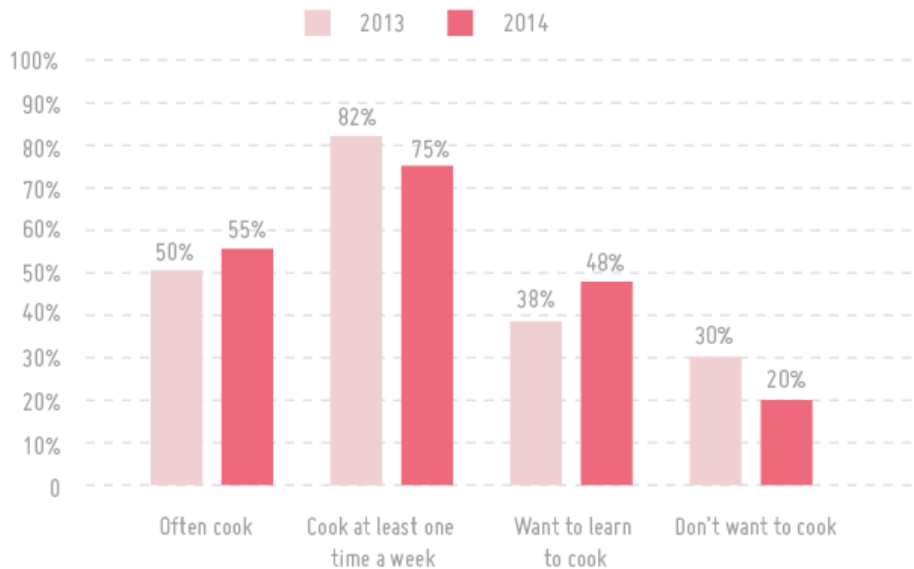
Source: 2014 Chinese Food Network Development and Trend Report



Tab.28 User professional

Source: 2014 Chinese Food Network Development and Trend Report

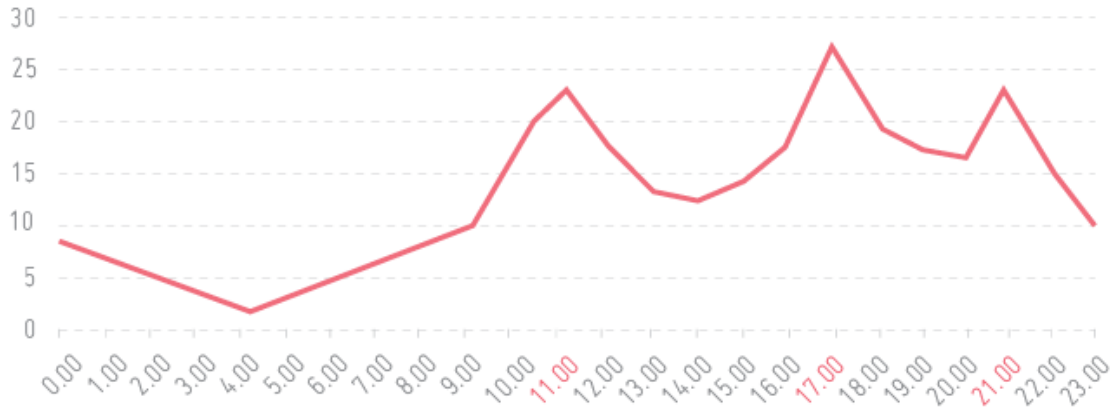
The statistics show that there are 110 million gourmet app download users; 68% of the gourmet network users use gourmet app; women are the main force of the gourmet circle, accounting for 75%. In terms of age, the generation after 1980s and 1990s accounts for the largest proportion; they love to try new and exciting food, and have their own unique taste; in terms of territory, the gourmet network users in the second-tier and third-tier cities reach two thirds; but Beijing, Shanghai, Guangzhou and the provincial capitals hold a smaller portion; the reason is that the pace of life is slow in the second-tier and third-tier cities, people know more about how to enjoy the life and focus on gourmet; in terms of occupation, housewives prefer to study recipes, and the white-collar workers rank second; among them, the married people account for 72%; this proves that people have high demands for a healthy diet after marriage.



Tab.29 Changes in eating habits

Source: 2014 Chinese Food Network Development and Trend Report

More and more people begin to give up take-out foods and eating-out choice; they choose to cook at home; among the influential factors of going home for dinner, the pursuit of health, attraction for fashion trends, the beauty and slimming have become three motivational powers.



Tab.30 Time of use the food app

Source: 2014 Chinese Food Network Development and Trend Report

Among the gourmet App users, 50% of them aim at learning cooking; the peak value of using gourmet app every day is at 11 o'clock, 17 o'clock and 21 o'clock, just the time to prepare lunch, dinner and midnight supper. As the quick-start cooking assistant for many white-collar workers with nine-to-five jobs, the recipe app makes them accustomed to looking at the recipe when cooking.

5.6.2 Interface analysis

a. color



Fig.76 Xiachufang use of color

Xiachufang logo and dominant colors are red with the light yellow as the background; the design style is neat and fresh.

Slogan: You cannot cheat on food and love.

The fact that the market development of Xiachufang can be achieved is greatly related with this sentence; good slogan, in addition to leaving a deep impression on the users, also can make users to spread spontaneously.

b. Navigation model

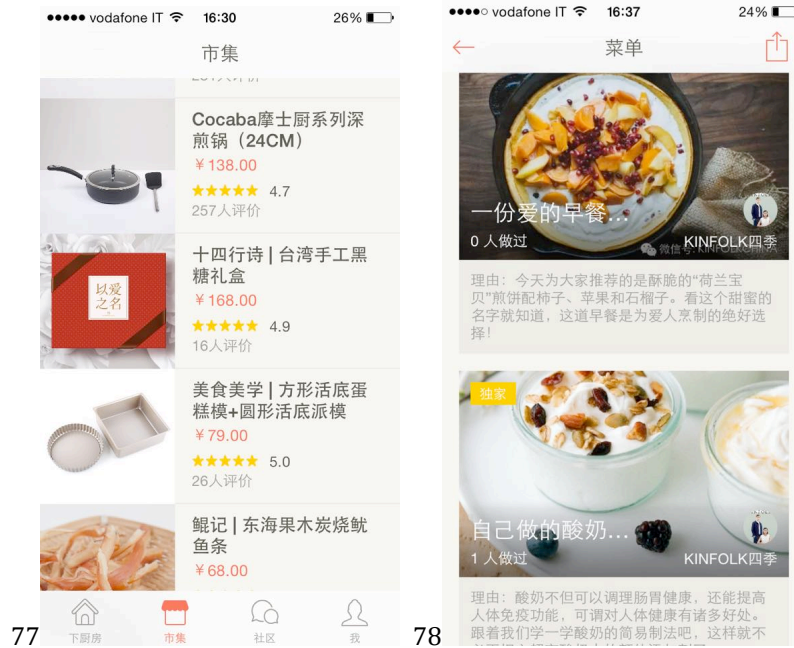


Fig.77 Xiachufang navigation model

Fig 78 Xiachufang navigation model

In the content page, Xiachufang layout is oriented with pictures and supplemented by text, so that it can be clear at a glance; moreover, no guidance for operation mode needs to be provided; based on the simple sliding, the user can find the basic function; the navigation way is mainly in list menus, and the content hierarchy is clear.

5.6.3 Functional analysis

a. Core Function

In terms of Xiachufang, the core function is the recipe, also the main content of the use UGC. Xiachufang divides the recipe into three sections, including the latest trends, popular menus and lists.

Latest trends



Fig 79 Xiachufang latest trends page

The latest trend includes the latest uploaded pictures of recipe and works, the most popular recipes of the week, and the recipe for breakfast, lunch and supper recommended to users according to the season.

Popular menu



Fig 80 Xiachufang trendy menu page

The popular menu includes the recommended slimming series of recipes according to the demands of different user groups, such as the recipes for pregnant women and babies, to meet the needs of different users regarding healthy recipes.

Ranks:



Fig 81 Xiachufang ranks page

The ranks includes various categories such as the best recipe of the month, the latest one and so on; the recipe is sorted not only by popularity degree but also by date to motivate the users to upload their own works.

Reviews and upload work:

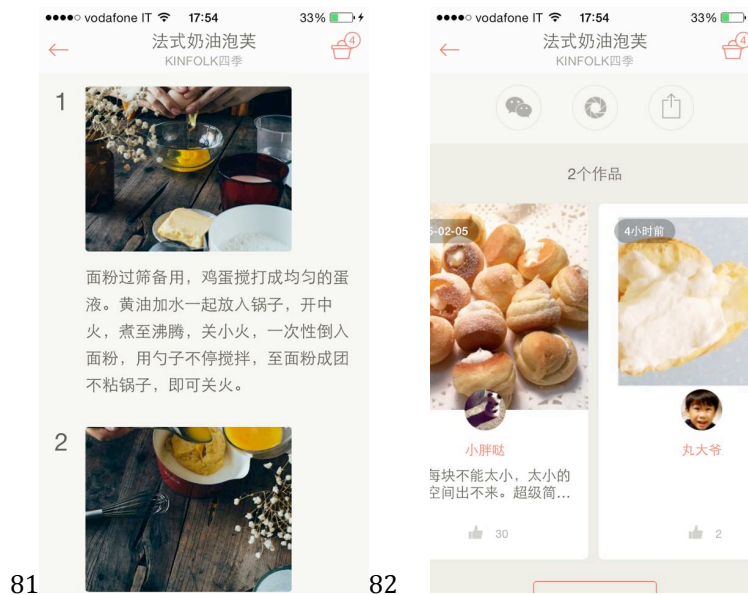


Fig 82 Xiachufang menu page

Fig 83 Xiachufang reviews and upload work page

In terms of function, the very important point of Xiachufang is that the users can upload the pictures of their dishes after they cook according to the recipes from other users, communicate with other users about the experience, share the user experience in the community. This increases the user loyalty.

Create a menu :



Fig 84 Xiachufang create menu function

Users can also create your own new recipes, take photos, write the cooking techniques, write the tips, upload their own works, so that other users can give the thumbs-up and make comments.

Firstly, Xiachufang is a pure-recipe mobile tool. When the users who desire to study cooking want to search for the recipe, they open the Xiachufang app, search the dishes they desired to get the complete cooking process, and then close the application. However, Xiachufang is a community of cooking skill communication oriented with the recipe. For users, the tool always has the potential to be replaced; if this tool doesn't work, that tool will be the alternative, and the migration cost is low. However, the community is different; because there are attractive people and their own data in the community. If those people don't leave, their followers won't leave, and they are willing to bear some negative experience in the community. They generate the relevant data in the application; due to the large migration cost, they are unlikely and unwilling to migrate at random.

b. Secondary Functions

Search:

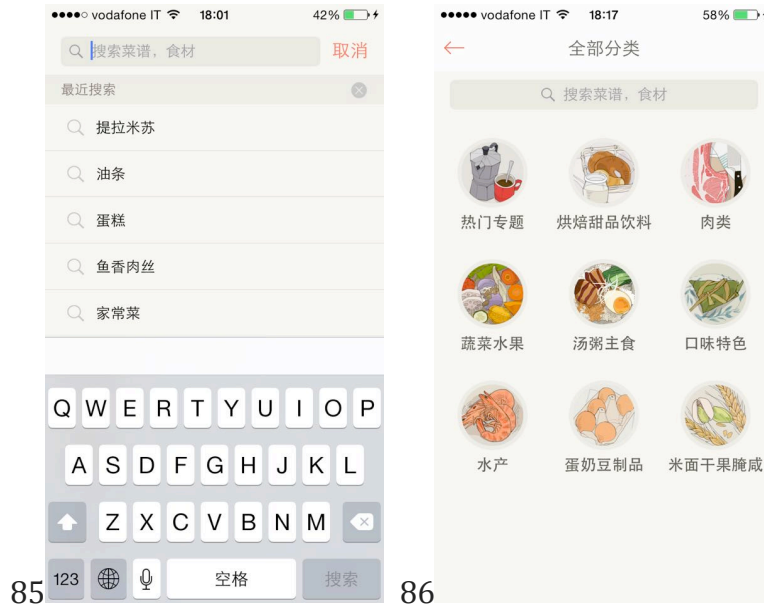


Fig 85 Xiachufang search function

Fig 86 Xiachufang all categories

For the recipe application, the search function can be regarded as the most important function except for recipe. Xiachufang app search function not only can save and delete the recent search record, but also provides the popular search recommendation used for screening the desired dishes. In addition, on the front page, searching keywords are added to facilitate the selection of the desired dishes.

Vegetable basket:



87



88

Fig 87 Xiachufang save page

Fig 88 Xiachufang shopping basket

After collecting their favorite recipes, the users can click on “throw it into the vegetable basket”, the vegetable basket is the purchasing list for users; the users will sort the food materials according to the recipe needs; the classification includes the sorting of normal food materials, and the sorting of main ingredients and auxiliary ingredients; in this way, it can remind the users to buy the required ingredients when they are buying vegetables; after purchasing, the users can use the right-sliding deletion function. However, in this setting, there is no addition and removal function; so the users can't operate by themselves; if they want to delete the list, they must delete all together.

Marketplace:



Fig 89 Xiachufang store

Marketplace is an e-commerce market for selecting the kitchen supplies; the users can buy the delicate food materials and kitchen utensils in the marketplace, but there is no search function, so the users must select according to the order provided by the system.

Discussion Forum:



Fig 90 Xiachufang discussion forum

The marketplace discussion forum in Xiachufang section provides a more convenient place for users to ask and discuss, but lacks the search function; if the same question is asked more than once, it's very likely there will be more than one discussion on the same topic.

5.6.4 Advantages and disadvantages of the user experience

Advantages:

The tool is the purpose and social activity is a mean.

Most of users for Xiachufang app are the white-collar women and kitchen housewives; in addition to the fresh and generous design style of UI, the app features simple and easy-to-understand operation process, and pleasant copywriting; for instance, “no portrait is impolite” passes on a kind of kindness; firstly, as a tool app, Xiachufang is practical; its rich and beautiful picture contents, powerful search function and the detailed recipes meet the needs of browsing-type users and purpose-based users. The biggest difference between Xiachufang and other recipe apps is the communitization and its encouragement mechanism. For

example, the daily recommendation of breakfast, lunch and dinner recipes on the home page, and the rookie recipes are aimed to show the UGC works of the community members, so that they can get more attention and form a virtuous cycle of finding recipes, cooking, being praised, being recommended and continuing to cook; also meet the needs that the women need to communicate, love to share and like to show what they cook.

Another example, the works at the back of the recipe are shown in chronological order, not sorted by the number of thumbs-up; in this way, Matthew effect is avoided, so that the users can get the equal thumbs-up chance and motivate the continued UGC from each user.

Disadvantages:

Xiachufang is good in terms of practicability, but there are still many defects in the user experience; considering the user scene, the logical process of the users is: open the recipe—collect the recipe— add it into the shopping list—buy ingredients—user shows what they cook (complete the works)—delete the shopping list.



Fig 91 Xiachufang my selection page

1. In the page of collection and shopping list, no management function is set, so that the users cannot add, delete and classify the items by themselves; therefore, when

collecting many recipes, the users can not find the collection that they desired due to the jammed favorites bar.

2. After completing a dish, the users may not want to see the recipe; from the perspective of the user scene, collection and list represent the user's plan; from collecting the dish to showing what they cook is a life cycle; when the cycle ends, the user needs to delete the collection manually, and the way of manual change is out of line with the user's actual life.

3. When the users cook according to the recipe in app, it is often difficult for them to have their hands free for checking the recipe.

4. The user loyalty comes from strangers; users can get the sense of accomplishment from other users' thumbs-up, but from the perspective of the user loyalty, the loyalty of a Circle of Friends is far stronger than that of the strangers; the users hope to show their works in their own Circles of Friends.

5.7 Social app: Lama bang



92

Fig 92 Lama bang logo



93

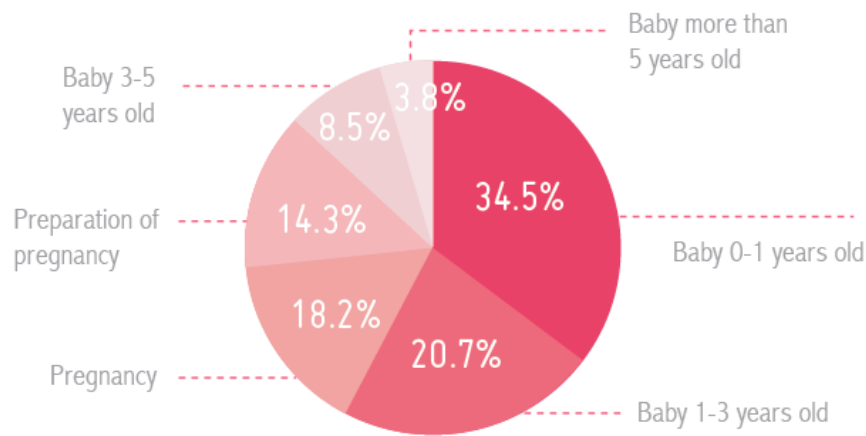
Fig 93 Lama bang advertisement

"Lama Bang" means the "hot moms group", namely the "community of hot moms"; it is the mobile social software for the fashionable hot mom. Lama bang is in service since March 2015; by the end of March 2015, Lama bang has already had 54 million users; the daily active number of users reaches 4.2 million. Currently, the registered users, average daily active users and the number of monthly retention have been more than 60%.

Jin Zan, the founder of Lama Bang, found that the moms need a new social circle

after the birth of babies. The original friends may not be able to share the baby-related topics with them; moms not only can share the parental experience with other moms, but also discuss the fashion and emotion topics to meet their social communication needs besides babies. However, in daily life, the mobile Internet is replacing the traditional Internet and becomes the communication tool more suitable for these moms; moms who need to get around with their children; and the mobile APP can help them make full use of the fragmented time.

5.7.1 User analysis

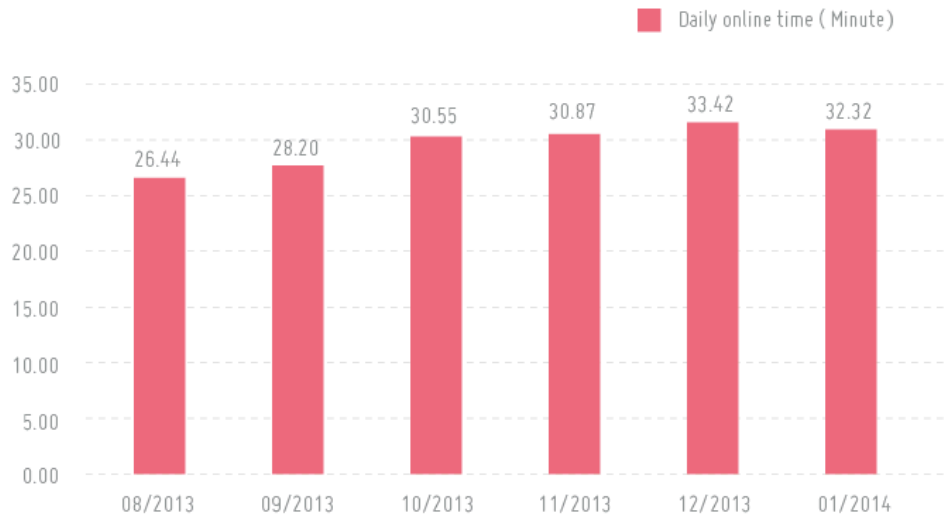


Tab.31 User age
Source: Umeng Data Report

City	Registered Users
Beijing	43022
Shanghai	36336
Guangzhou	21145
Shenzhen	25053
Hangzhou	5816

27/03/2013 12.00

Tab.32 User's city top 5
Source: Umeng Data Report



Tab.33 Time of use Lama bang
Source: Umeng Data Report

According to data from the third party company Umeng, the core users of Lama Bang are the mothers of the babies aged from 0 to 3, accounting for 73.4% of the total proportion; 45% of them are mainly aged 25 to 30; most of them are the post-80s and post-90s young mothers; as of February 28, 2014, the daily active users access to Lama Bang (DAU) reached 150,000; the number of daily uploaded pictures was 35,000; everyday, the new users generated 12,000 new topics; and the number of daily topic replies was 300,000; the average daily service time of Lama Bang was more than 30 minutes; the number of average daily opening times is 6; the monthly retention rate was more than 63%; and the user activation was close to 90%.

In term of the geographic location, the users of Lama Bang are mainly concentrated in the first-tier developed city; where young mothers use the mobile application in a higher proportion.

5.7.2 Interface analysis

a. Logo and color

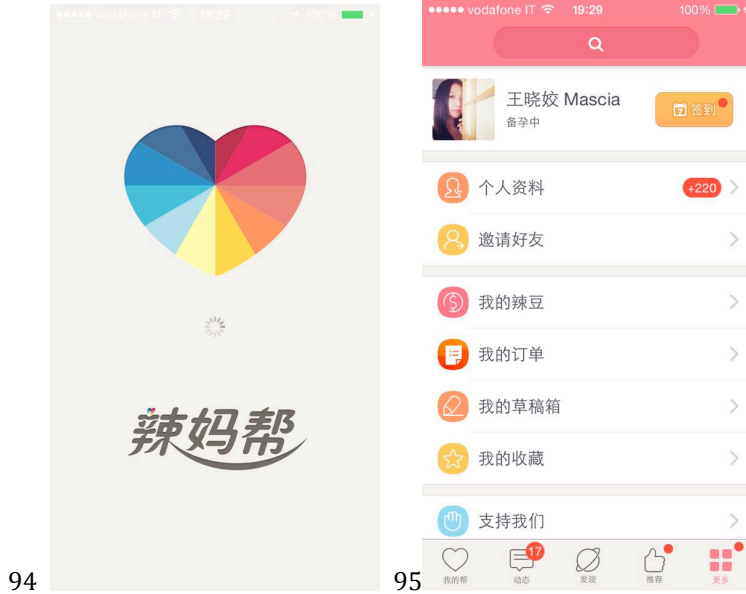


Fig 94 Lama bang logo
 Fig 95 Lama bang page

The logo of Lama Bang is a heart-shaped diamond in three-primary colors including the red, yellow and blue; the main colors are pink and light grey; icon is in flat design consisted of red, yellow, blue and green with lower brightness. The style is fresh and concise.

b. Cartoon image



96



97

Fig 96 Lama bang cartoon image “Lala”
 Fig 97 Lama bang cartoon image “Lala”

Lama Bang also designs a cute and sexy cartoon image for these moms, called “lala”. The image appears in the advertising and application page, especially in the page cache, where the image of lala drinking coffee or blowing bubbles will appear; the interactive effect is on a greatly humanized scale.

c. Navigation model

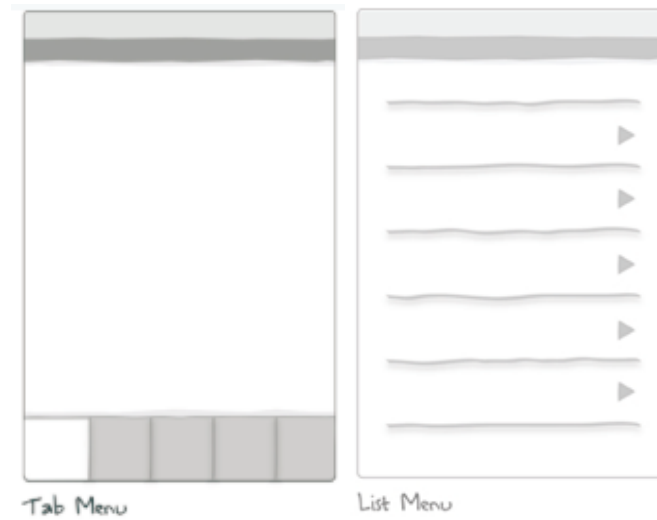


Fig 98 Lama bang navigation model

The primary navigation method of Lama Bang is the list type; its main functions are clearly highlighted, so that the users will not be lost even if they jump back and forth in the rich contents; the secondary navigation is dominated by the pictures and supplemented by texts, and shows very intuitive effect to the users.

5.7.3 Functional analysis

a. Multifarious Lama Bang

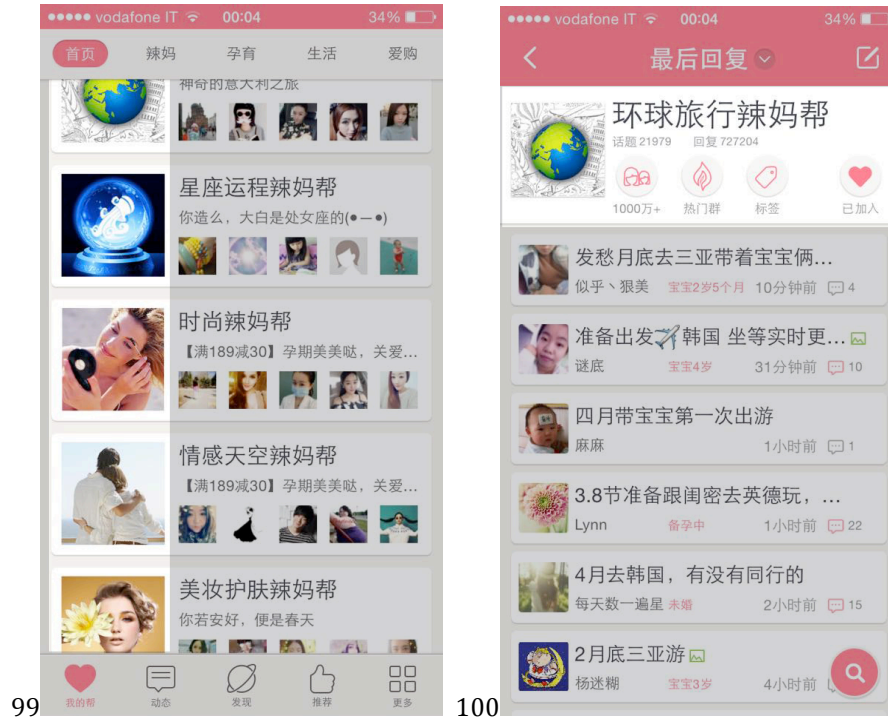


Fig 99 Various types of “bang”

Fig 100 Global Travel

“Bang” (group) is the most important function of Lama Bang, but also the main contents of UGC; the user can focus on various “groups”, find and create their interest topics in the group, read and reply to the topics. The community in Lama Bang is divided in accordance with several dimensions, including pregnancy, the geographical position, interests and hobbies. The pregnancy community in Lama Bang consisted of the early pregnancy, middle pregnancy, late pregnancy, puerperal period, one-month baby, two-month baby, one-year-old baby, baby in kindergarten, pupils at home; according to the interests and hobbies, the community in fashion mom group, emotional sky, horoscope, sexual health, bodybuilding body shaping, entertainment and gossips, etc; according to the geographic position, the community is divided into Lama Bang in Beijing, Shanghai and Guangzhou; in addition to above groups, Lama bang is also involved with the gourmet, DIY, travel and shopping; the users also can focus on Hot Mom Talents. The users not only can find others who share with same needs and interests based on various groups, but also can find other users near them based on the geographic position, such as the users in the same maternity hospital, or in the same kindergarten.

b. Hot Mom Group



Fig 101 Various types of hot mom group

Fig 102 hot mom group chat

Group function is similar to "Gang"; the users can establish the groups according to their own interests and hobbies, such as even-aged baby group, slimming group, wedding photo group and marital affection group, etc; similar to the group function of whatsapp; the users can make communication in the form of voice, message and upload pictures.

c. Attention function



Fig 103 Lama bang attention function

Users can pay attention to other users; after the attention, the system will automatically prompt and show the messages and posts written by the concerned users; moreover, the users can communicate with them in private messages.

d. Diary function



Fig 104 User's diary

Users can post photos in the diary of Lama Bang to record the mood and share with others.

e. Hot Mom Mall



105

Fig 105 Lama bang's hot mom mall



106

Fig 106 Lama bang's hot mom mall

Here, users can find extensive products related to moms and babies, make-up and cosmetics, foods and articles for daily use; they can also find interesting products in terms of price and quality based on recommendation and evaluation function, and share them with other users.

f. Scores



Fig 107 Lama bang's scores page

Users can earn “beans” (in-app coins) by inviting friends, starting topics, etc. Once a user owns a certain amount of beans, he/she can exchange them with badges or spend them to have special discounts in Hot Mom Mall.

5.7.4 Successful image Promotion

a. Mobile Community O2O



Fig 108 Lama bang's party

The biggest difference in the strategies between Lama Bang and other apps is that Lama Bang is not only online actually: It is making efforts in expanding offline the market. All kinds of BBS city-wide activities and the local life service successfully form the cohesion among the moms who desire to get the child-raising information; superficially, Lama Bang successfully achieves the decentralization in the form of community, but actually, the operation teams succeed in mastering multiple social needs of user absorption, topic generation and realization of Circles of Friends based on various ways of offline experience. From the perspective of costs and benefits, it is the same as the information sharing encouragement: Communities encourage users to establish, find and maintain different communities spontaneously, everything is done by users.

In terms of the product promotion, Lama Bang only has costs that are almost equal to other wireless products; about half of the users are basically gained based at "zero cost". Last year, Lama Bang users totally launched more than 660 afternoon-tea parties throughout the country; during a Lama Party, you can find the party photos shared by moms throughout the country, involving the first-tier, second-tier, third-tier and fourth-tier cities all over the country,; for all these activities, moms actively act as the volunteers to organize and launch. This is the typical way of offline social contact. The users will select face-to-face communication if they are

offline. Moms find their own circles in the vertical social tool according to their own needs and preferences.

In the official data from Lama Bang, the online promotion only accounts for 30%; the communication based on inter-user public praise surprisingly reaches 38%, and becomes the source of the maximal traffic. A typical example is the offline annual party of Lama Bang –“Lama annual party”. In January 2014, Lama Bang held more than 100 “Lama Annual Parties” all over the country; at the beginning of 2015, the number of annual parties will be increased to 113 parties; Lama Bang reveals that the number of parties is expected to reach 300 in 2016.



Fig 109 Lama bang's party

Lama Bang seizes the characteristics of the users, especially moms who have strong child-raising needs when the child is aged 0 to 1; then the needs will gradually weaken, and moms will hope to return to the social circle. However, after giving birth, many women have different concerns, so it is easier for them to resonate with the moms who act as the same role.

b. Image Promotion

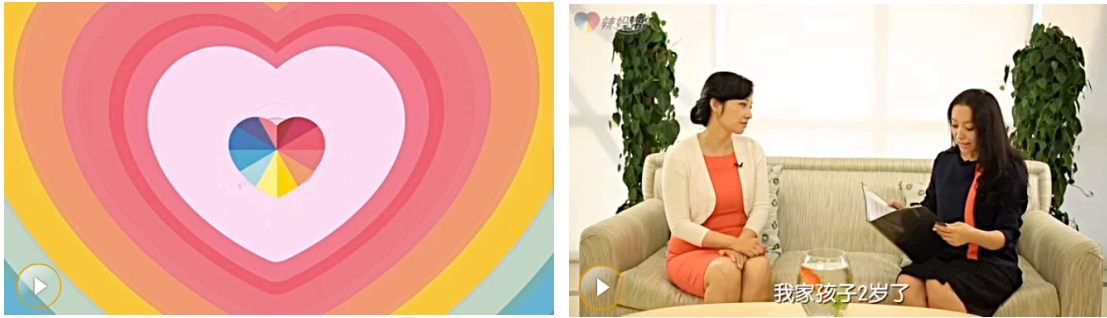


Fig 110 Lama bang health-promoting video

Fig.111 Lama bang health-promoting seminary

In addition to the offline activities, Lama Bang also made many series of videos in the form of expert providing information. Starting with the video of cartoon image Lala, the experts answer the questions of moms in life, and win the good image of lama as close helper for Lama Bang.

5.7.5 Needs that Lama Bang meets for the women

1. Social needs: Lama Bang provides new social circles for users; the users can find those who have the same experience and needs, and meet the social needs in addition to babies.

2. Talking-out needs: According to the data statistics from Lama Bang, at present, the most popular community among “hot moms” is “Emotional Sky Lama Bang”, “Fashion Lama Bang”, “ Mom &Baby products Lama Bang”. In the Emotional Sky, there are more than 10 million members, while the most interesting topics for users are the sexual relation, relationship between mother-in-law and daughter-in-law, smart war with mistress, slimming and shopping, etc; thus it can be seen that the most important thing for women is to find someone to talk out in addition to solving the problems.

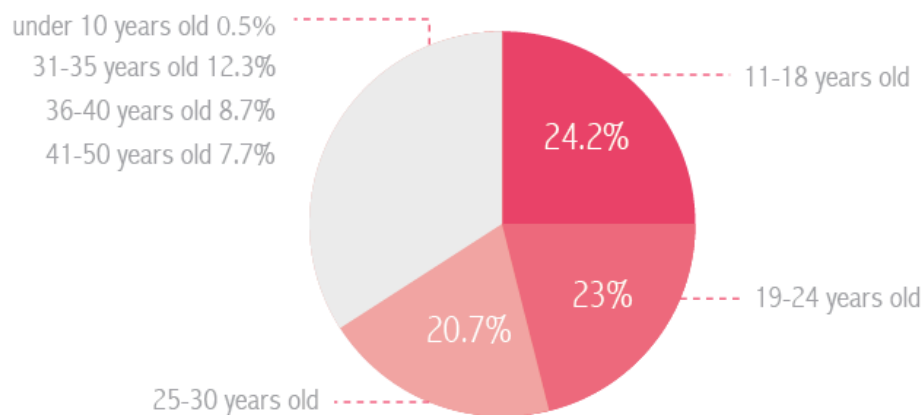
3. Gossip needs: Undeniably, many users in the community share their experience; this is the root of the product and the original intention aiming at the user groups setting; however, the gossip posts win and retain more users for Lama Bang. The mom in child-raising period don't know how to spend their time, so the communities in Lama Bang, such as “entertainment gossips” and “Marriage & Love”, are very popular among them.

Chapter VI: How do interactive design products make Chinese girls happy

In terms of the user coverage and daily activity degree, the above examples are leading among the similar interactive products, but there are still advantages and disadvantages in terms of the interface, function, user experience and satisfaction for female demands; how does an interactive product make girls happy? We can find such a rule from the above examples:

6.1 The selection of the target users: Young women are the main force.

Through the analysis of the above cases, we learned that whether webpage or App, now the users are mainly the young women living in the developed cities; according to the data statistics from EnfoDesk, among 270 million female mobile Internet users, the users aged from 19 to 35 account for 56%; then the users aged from 11 to 18 account for 24.2%; the post-80s users become the main force of the mobile Internet. In terms of geographical distribution, the users are mainly concentrated in the developed cities, such as the first-tier and second-tier cities; due to the large gap in Chinese cities and towns, the users who use the interactive products in the developed cities are significantly more than those in the rural areas; in the developed cities, due to the high popularity rate of the mobile phone and computer, the users can learn and master the operating skills of the interactive products in a short time.



Tab. 34 Age range of internet female users in China
Source: EnfoDesk Analysys International

Secondly, surveys show that Chinese girls are much more dependent on internet and than girls from other countries: 45% of internet female users in China say they prefer giving up on their sexual life for one month rather than on their mobile phone or internet (the same survey states 39% of American women think the same; 38% of British women and 28% of Brazilian women).

80% of internet female users declare internet is their main mean to get informed: Besides this, they state they feel they have a sort of help and control from internet, since they can use it to post requests freely (social medias are anonymous, so they can post private and delicate questions without feeling embarrassed). Internet is also a way to access to information. In China, more than 70% of women use social medias to read news, while in the rest of the world, only 46% of female users use Internet for this purpose.

6.2 Interface

a. Color

For women, the theme color of the interactive products is very important; it not only affects the first impression of the interactive products to women eyes, but also represents the product characteristics to a certain extent; therefore, in addition to considering the psychological characteristics of female users, the theme color of an interactive product stresses more on combining with the product self-positioning and use of the color in conformity with the product atmosphere. Many products especially designed for women are often in pink, such as Dayima, Meitu Xiuxiu, Meitu Mobile, Meilishuo, and so on; pink is not popular among all girls, but it can convey a message to the users: In other words, the product is specially designed for the female users. However, many female products go in an opposite direction; for instance, Lama Bang uses three bright colors (red, yellow and blue), which also are favored by the female users.

b. Image

Influenced by Japanese cartoon and kawaii culture ²⁰(kawaisa in Japanese is used to describe loveliness and it's become the important factor in Japanese culture.

²⁰ Wikipedia, kawaii culture

Popular culture, entertainment, clothing, diet, behaviors and etiquettes are all affected accordingly); the word kawaiisa plays an important role in all aspects of life for girls in China; besides enjoying cartoon phone stickers, hanging cartoon toys to bags, painting their nails with cartoon design, for the shapes of various articles for daily use, such as mobile phone and web interface, they also pursue a cute, lovely style.



112



113

Fig 112 Favorite decorations of Chinese girls
Fig 113 Photo stickers of Chinese girls

Due to the female users' passions for the lovely cartoon images, interface style, image design, skin, facial expressions, the content downloads of many Chinese interactive products are successively injected with a large number of cartoon elements to make them popular and attractive among female users. For instance, the cartoon image design of Dayima and Lama Bang create a lovely spokesperson for the product; moreover, the image is always interspersed in the process of the users and application interaction, so that the interactive process becomes more lively and interesting, very close to women's preferences.



114



115

Fig 114 Sougou input software

Fig 115 Dayima's cartoon image

c. Layout

Whether webpage or application, the layout design of the view in the screen is crucial; the characteristics of the interface, elements, layout of the contents need to provide a hierarchical structure, so that the users can know what the most crucial contents and the less crucial contents are at a glance; the relationship among words, graphics and space, follow the user's natural order for browsing (i.e. the user's sight is always from left to right, from top to bottom) , so that the users have a smooth visual experience. In the above case, Dayima, Lama Bang and Xiachufang use the navigation mode with concise and easy-to-understand feature and emphasis on the main contents and the way oriented with graphics and supplemented by words, so that it's easier to operate and provide a strong visual effect to female users.

6. 3 Product contents and product availability

The product function is aimed at meeting the needs of users; but against the background of different cultures, different ways of life determine what functions of the interactive products the users require and how to use such products. Chinese young girls form their own distinctive characteristics in today's Chinese social context.

a. Chinese-style "pseudo feminism"

The word "pseudo feminism" comes from an article entitled "Chinese-style feminism is pseudo feminism: In essence, it means you get something without doing anything". Tianya website in 2012²¹, raised such widespread controversy and the word "pseudo feminism" became popular in China. Since the reform and opening-up policy, China's economy has developed rapidly; Chinese women are not only impacted by the western culture, but also retain the characteristics of traditional Chinese women; they hope to become the new women in a new era, and suffer from the constraints of the old morals; for this reason, Chinese women feel contradictory and embarrassed, and they not only claim for equal rights, but also hope to extend the psychology of Chinese feudal tradition.

21 <http://bbs.tianya.cn/post-free-1738575-1.shtml>

This phenomenon is called "feminism", but in fact, China has never experienced feminism as a movement in the true sense. In Chinese history, female liberation was always part of the male-dominated national liberation, independence of the State and subservience to class struggle. At the end of 19th century, Chinese feminist struggle took a first step, but it was actually started by men with the anti-foot-binding proposal; since then, the voice of feminism has been suppressed; May 4th Movement broke in 1919, and the Western feminist thought was introduced into China and well received, however the male intellectuals became the female thought spokespersons once again. In Chinese history, the female voice has been very weak. It is precisely for this reason that the feminism thought has never formed its own strength and popularity in China, and Chinese women know little about the real meaning of "feminism". That's why some people even misinterpreted the "feminist" ideal and thought that the feminism was a way to overwhelm men.

At the same time, the gender division of labor was characterized by the thought that "men's work takes place outside the house and women's work is at home". This is rooted in Chinese families, and many Chinese traditions linked to this are maintained still now. For instance, the groom must pay the bride price to for the bride when the two get married; after marriage, the wife deals with the household affairs, takes charge of financial management and looks after their children and parents. But alongside the social development, Chinese women's social status was enhanced. Since 1995, Chinese women gained fundamental rights in education, work and participation in government and political affairs. Nowadays, the female employment rate in China is 73%, (higher than the one in many developed countries, such as the United States and Britain). so China is one of the countries with the highest female employment rate of the world. The proportion of female executives in Chinese mainland enterprises is 25%, higher than the global average level (22%). But at the same time, society imposes the heavy responsibility of cultivating and educating children on women, and puts the double burdens of work and family on the shoulders of women living in the cities. These women live such conflicts with different roles, and their life is full of contradictions and pressure.

The reason why Chinese feminism is called "pseudo feminism" is attributed to a very interesting phenomenon in society: Take Chinese women's transformation before and after marriage as an example. Before marriage, Chinese women still follow the tradition and make requests regarding men's economic conditions: expenses related to house and wedding ceremony are paid by men (it's a tradition that dates back to feudal society) but after marriage, women are unwilling to follow the tradition, begin to advocate "feminism" and claim for the equality of men and

women in terms of housework and family responsibility. Some women directly ask their husbands to cope with the housework, but when managing the family finance, they still hope to follow the tradition. The financial power is traditionally controlled by women. In truth, Chinese women are not concerned about chauvinism or feminism, feudal or modern society: They just make use of the favorable lines of thoughts for their own purposes to maximize the rights and minimize the obligations.

Su Qin, a famous writer, said, “Chinese women are seemingly powerful”²²; for instance, we often see that the women command the men around. When women go shopping, men always carry handbags for them. Men always pay the bill when dating or eating, but actually, it is very difficult for Chinese women to become independent economically and emotionally in their life. Even though Chinese women seem to be more and more powerful, the research report of Asian women released in 2014 “the Rising Power of Asian Women”²³ pointed out that the negotiating power in family, decision-making power and the purchasing power for Chinese women surpassed 58%, still behind such power, there is always an excessive dependence on men. We can often see that Chinese girls like to show off their own brand handbags, but in most cases they are actually showing off the economic strength of their male partners.



116



117

Fig 116 A boy squat for his girlfriend to rest

Fig 117 Chinese boys take the bag and umbrella for their girlfriends.

22 Su Qin, *Seven days female doctrine*, Wanjuan Press, 2009

23 EIU(the Economist Intelligence Unit), *the Rising Power of Asian Women*, 2014

Chinese women have great expectations for their own social and family status; they hope to be spoiled as princess, and also hope to act as the modern career women; they want to pursue freedom, make a hit in career, achieve their value of life, but at the same time, they also hope to conform to the gender role of the traditional women, whose typical qualities include virtuousness, gentleness and quietness. They hope to live according to the social and family's expectations for their female role. In this way, they can avoid social marginalization, so that they will not be condemned and morally marginalized. Therefore, based on such a social role with contradictory conflicts, Chinese women have special psychological needs; they don't need equal rights in its true sense. In a certain way they don't even hope to be equal with men in terms of rights and obligations. Chinese women are, in essence, very dependent on their men. They just need to be loved and cared, they hope to attain the power superficially in such a way that men obey and meet their own interests.

The launch of Dayima App lovers meets Chinese female needs for "power". Namely, it hands over the power for binding and unbinding the boys and girls' accounts to the women, sends the girls' menstruation information to the boys automatically and instructs the boys how to take care of girls. Actually, the success of Dayima is related to the fact it suggests boys how to love girls on their behalf. Another example is the "coquettish action for payment" mode; the girl just selects "being paid by others" in the mode of payment and the system will generate a series of links automatically that the girl will can send to her boyfriend to ask him to complete the purchase. Such mode has become very popular among girls, it meets the girls' psychological needs for being loved and being recognized in power and status.

b. Emotional appeal: Social circle of acquaintances

The internet and the "communalization" of mobile applications has become the future development trend, but under traditional culture of Chinese collectivism, the "circle" and "close friends" are of stronger. In Chinese culture, "circle" is not only the basic form of the social structure, but also a significant characteristic of Chinese traditional culture. Due to the gender difference, the social goals, social scope and social depth are significantly different between men and women. Compared to women, men are more willing to expand their own circles of friends for helping their own career. They are also more willing to make the friends with strangers of the opposite sex. Men are generally more pioneering and adventurous. However, Chinese women pay more attention to maintaining their existing circles of friends, attach more importance to security and stability, and show more emotional needs than men. According to the statistics from *Investigations on Internet Social Behaviors*

for Chinese Netizens in 2014, Chinese women show stronger rejection and distrust in a lot of false information and strangers on the network, so they are more inclined to socialize within their circles of acquaintances or on websites with high combination between the social scope and realistic social circle.

In addition to the existing circle of friends, there is another way to make two total strangers establish a social relationship quickly: It consists in breaking the barrier between strangers and reduce the female distrust in strangers based on a breakthrough point, which can be the common hobbies and interests, working problem, or their love experiences, geographic location, etc.

Chinese women reject the idea of establishing a social interaction with strangers. At the moment, in order to gain more female users, the most popular dating application with strangers, Momo, also sets aside the concept of making friends with strangers, and transforms the product form to “location-oriented communities” to make those with similar hobbies, interests and common goals in shorter distance get together. At present, the best “circle of acquaintances” in China is Wechat; regarding Xiachufang and Lama Bang, the establishment of new circle of friends is based on common interests and hobbies, as well as the interest in certain topics. However, in order to enhance the user loyalty, a high-quality interaction among users is necessary. For Xiachufang, the enhancement of the user interaction is based on high-quality contents, high-quality comments and participation from users. For Lama Bang, the enhancement of user loyalty is based on the user segmentation, high-quality discussion contents and O2O; by contrast, Meilishuo, which claims to be a social media oriented to female fashion, is the website with more emphasis on contents, and less on interaction and relationship. In this app, interactive behaviors of users are difficult to form.

c. Three immutable pursuits for Chinese women: "Keeping in good health, whitening, losing weight"

With the improvement of life quality, Chinese women also pay more and more attention to keeping in good health. Unlike western dietary culture, Chinese pay more attention to the relationship between food and time, and the balance between food and body (for instance, what kind of tea is suitable for each season, what kind of food is suitable so strengthen the body, how to recuperate the energy during menstruation, how to understand your own physical condition through observing the body's signals, how to comply with the four seasons and synchronize the body and natural change). Due to the high working pressure and lack of spare time, the

modern young women want to gain more knowledge about how to be good health. The related topics modern women care the most about are: What kind of food can nourish Yin, what kind of food can adjust the internal secretion, what kind of tea has good effect on beauty preservation and detoxification, what kind of food can remove freckles and reduce wrinkles and what kind of food can delay senility. When helping the female users to record the menstruation, Dayima will automatically push the health care knowledge and dietary recommendation according to the women's physical conditions. This feature meets the female users' desire for knowledge to be in good health and save time for female users, so that they needn't to search the relevant information on the internet on their own. As long as more recipes for keeping in good health and beauty are added in Xiachufang, more and more female users will be attracted to use this app.

In Chinese aesthetics, "whiteness" is a very important factor. People from Europe and US get tanned on purpose due to their dislike for the white skin, but Chinese people have always deemed white as beauty, since ancient times. In ancient poems, the poet liked to use "jade", "snow", "frost" and other words to describe the white skin for a woman, while people were easy to be tanned due to outside work. A white skin can show that the woman is the young lady from a big and noble family. Modern people often use slogans such as "a white complexion is powerful enough to hide many faults" and "the pink-and-white complexion" to guide women's aesthetic standard to white complexion. Even now, the word "Baifumei"(which is used to describe a woman with lots of money and white beautiful appearance) becomes a men's standard for choosing their spouse. Therefore, we often see that Chinese girls always hold umbrellas when going out in summer, or wear much sunscreen to avoid suntan. The most powerful whitening function of Meitu xiuxiu greatly satisfies Chinese women's pursuit for whitening: Even if their skin's not white, they try hard to make themselves white or seem to be white for the purpose of conformity with the public aesthetic standards.

Losing weight is a permanent topic for Chinese women. Among Baidu search words in 2014, "losing weight" ranked first; thus it can be seen that Chinese women are so enthusiastic about losing weight. Even a very thin girl will still want to become thinner; when two girls meet, usually they first say, "you are fatter" or "you are thinner". In China, many times being "thinner" means "more beautiful". Such ideal is influenced by the modern western culture: The tall and thin figures on stage and the photos of the bony model in a magazine deliver the information that being thin is fundamental for women, so that more and more women join the weight-losing army for the purpose of being slim. Many institutions (such as the weight-losing center and bodybuilding Spa) and slimming drugs spring up like mushroom.

The function of “weight-losing program” in Dayima and the function of “slimming and face-lifting” in Meituxiuxiu stress this aspect to meet female needs of losing weight. For Meilishuo, the “slim look” style search function also can be added in the “magazine” section, and is favored by girls.

Actually, the girls’ thirsts for whitening or slimming show that they hope to get more praise from the social aesthetics and social demands for female character, and benefit for finding more excellent men.

6.4 Availability of products

According to the research result release by IDC, in addition to the appearance of the interactive products, women are most concerned with user-friendliness. The *Pink Paper of Smart Phone development for Chinese Women in 2014*²⁴ shows that Chinese women’s satisfactions with smart phones mainly focus on the smart phone application and control complexity; therefore, if an interactive product wants to be favored by the female users, it not only needs a nice appearance (outline and color) but also a tailor-made and simple mode of operation for women.

How to make the operability of interactive products easy and efficient? It needs to meet the psychological needs of the users and put stress on intuitive operations. First, it is necessary to know the user's motivation and goal, focus on expectation and interest; second, in order to achieve the goal, the way the user will operate and use the product, and how the user will think and select the operation process. This is a complex process and usually, the best solution consists in simulating the scenario.

The success of Meituxiuxiu lies in the simulation of the typical user scenario: After the girls’ self-shots with mobile phone, they hope to become a bit more “beautiful” and send the photos to the circle of friends. Most of girls cannot use Photoshop, nor know much about photography, but Meituxiuxiu can make girls become beautiful just based on the simple click and select without too much consideration and professional knowledge. So in this scenario, the user experience is good.

By contrast, in terms of the scenario simulation and the problems that the users encounter in the scenario, Xiachufang fails to take into account the necessary steps. The user’s logic process is listed as follows: Open and collect the recipe, add it into

24 IDC (International Data Corporation), *Pink Paper of Smart Phone development for Chinese Women*, 2014

the shopping list, cook dishes, show what he or she cooks, and delete the shopping list. However, in the operation process, the user may not use the application and read recipe due to the occupied hands. At the moment, if the recipe is added into the voice reading function, the user can feel more comfortable while cooking. Besides this, the recipe collected by the user has a life span: Xiachufang fails to design the status for the collected recipe and shopping list. After cooking a dish, probably the user doesn't need to see the recipe any more, but the user has to delete the shopping list and recipe manually. After the user is shown what he or she cooks (it indicates that the user has already cooked the dish), if the application should automatically add the collected corresponding recipe into the system default "achievement menu" (the cooked dishes), and automatically delete the corresponding shopping list. In this way the whole process would be much smoother.

6.5 Create unique brand image

Starbucks CEO Schultz said, "What we pursue is not the maximal sales scale, we try to make our customers experience the romance when tasting coffee"²⁵.

The creation of a unique product image can bring different sensations, feelings and culture experiences to the users, and it plays a significant role in the user experience. It is beneficial to satisfy customers, retain users, form the loyalty bond and affect others. For influential product images, even in case user experience itself is not good, the users can accept it emotionally and even love it as Fans. The image that the product shows to users is always individualized and affected by the many factors including the environment, culture and personal aesthetics.

Dayima and Lama Bang create their "healthy and lovely" image and "intimate helper for moms and infants" through advertising campaigns and video production, and have become popular among girls. However, Meitu Mobile fails in this aspect: Meitu Mobile was originally committed to creating "high-end smart phones specially designed for girls" but the reality is not consistent with the real image in users' mind: Its high practicability and moderate grade can't meet the girls' needs for the mobile phone expectations and its self-value aspect. This is why in the end the result is a failure.

25 Howard Schultz, TIME, 2013

Chapter VII: Conclusion

Interactive design products have become more and more differentiated. Women are the social group with most importance in terms of base number, purchasing power and internet use habits. Sensibility and experience are right-hemisphere-based mental processes that the women are so good at, but also the future development direction that interactive products need to focus on when designing a user experience. The rise of applications or websites in conformity with female characteristics and preferences or specially designed for women shows that women are driving the interactive product design from rationality and function to sensibility and experience.

Chinese women are a group with its own characteristics both regarding culture and behavioral habits. This paper is a research and case analysis of the existing websites and applications which have been especially designed for Chinese women. It analyzes the product appearance, interface, function, user experience and product image and combines such aspects with Chinese cultural background and social status. It aims to summarize what we need to do for when designing an interactive product especially for women and Chinese women. Obviously the rate of appreciation of any interactive product also affected by the character, user preference and other aspects of the single individual, but in terms of group, if an interactive product wants to be popular with Chinese women, it must not only meet their preferences regarding the appearance, but also their psychological needs. In other words, the designing process must take into consideration the “pseudo feminism psychology” characteristics of Chinese women, because what Chinese women pursue is far more than the satisfaction of physiological needs and security: It is beauty, self-esteem establishment and realization of themselves.

Bibliography/Website:

Alan Cooper, Robert Reimann, David Cronin, About Face 3: The Essentials of Interaction Design, John Wiley & Sons Inc (Computers), 2007

Alan Cooper, About Face: The Essentials of User Interface Design, 1995

Alreck, P. Commentary: A new formula for gendering products and brands. Journal of Product and Brand Management, 1999

Basow, S. A. Gender: Stereotypes and roles, 1992

Bagozzi R P, Wong N, Yi Y. The roles of culture and gender in the relationship between positive and negative affect . Cognition and Emotion, 1999

Ben Shneiderman, Designing the User Interface: Pearson New International Edition: Strategies for Effective Human-Computer Interaction, Pearson, 2013

Carolyn Bloomer, Vision Theory, Peking University Press,1987

Carroll J M, Scenarios and design cognition. In: Proceeding of the APCHI 2002 User Interaction Technology in the 21st Century, Beijing, 2002

Crossley, L. Building emotions in design, 2003

Cameron Banga, Josh Weinhold, Essential Mobile Interaction Design: Perfecting Interface Design in Mobile Apps (Usability), Addison-Wesley Professional, 2014

Carolyn M. Bloomer, Principles of Visual Perception, Design Pr, 1990

Denhardt, Robert , Managing human behavior in Public and Non-profit organizations. California, U.S.A, 2008

Donald Norman, The Emotion Design, Apogeo Education, 2013

Dennis M. Puhalla, Design Elements: Form & Space: A Graphic Style Manual for Understanding Structure and Design, Rockport Pub, 2011

Dan Saffer, Design dell'interazione. Creare applicazioni intelligenti e dispositivi

ingegnosi con l'interaction design, Pearson, 2007

Elaine Morgan, The Descent of Woman: The Classic Study of Evolution, Souvenir Press, 2001

Ferre X, Juristo N, Wind H, Constantine L. Usability basics for software developers. IEEE Software, 2001

Fernando Vidal, Berlin, Sabina Spielrein. Jean Piaget- going their own ways. Journal of Analytical Psychology, 2001

Giles Colborne, Simple and Usable Web, Mobile, and Interaction Design, New Riders, 2010

Giles Colborne, Simplicity in the Details: Designing Faster Web and Mobile Interactions, Peachpit Press, 2014

Greg Nudelman, Android Design Patterns: Interaction Design Solutions for Developers, John Wiley & Sons Inc, 2013

Gloria Moss, Gender, Design and Marketing: How Gender Drives Our Perception of Design and Marketing, Ashgate Pub Co, 2009

Jennifer Preece, Yvonne Rogers, Helen Sharp Interaction Design Apogeo Editore, 2004

Jon Kolko, Thoughts on Interaction Design, Morgan Kaufmann Pub, 2011

Jon Kolko, Well-Designed: How to Use Empathy to Create Products People Love, Harvard Business Review Press, 2014

Jesse James Garrett, The Elements of User Experience: User-Centered Design for the Web and Beyond, New Riders Pub, 2010

Jordon, P. Human factors for pleasure in product use, 1998

Jordon, P. Designing pleasurable products. 2000

Julia Kristeva, About Chinese Women. London: Boyars, 1977.

James Pannafino, Interdisciplinary Interaction Design: A Visual Guide to Basic Theories, Models and Ideas for Thinking and Designing for Interactive Web Design and Digital Device Experiences, Assiduous Publishing, 2012

Kent C. Berridge, Morten L. Kringelbach, Pleasures of Brain, Oxford University Press, 2010

Luke Wroblewski, Web Form Design, Rosenfeld Media, 2011

Meng Zhaolan, Emotional Psychology, Peking University Press, 2005

Maslow, A theory of human motivation. Psychological Review, 1943

Maslow, A. Motivation and personality. New York, NY: Harper. 1954

Maslow, Dominance, personality and social behavior in women. *J. soc. Psychol.*, 1939

Ming Hou, Simon Banbury, Catherine Burns, Intelligent Adaptive Systems: An Interaction-Centered Design Perspective, CRC Press, 2015

Marilyn DeLong, Color and Design, Bloomsbury Academic, 2013

McDonagh-Philp, D., & Lebbon, C. The emotional domain in product design, 2000

Meininger, J. C. Sex differences in factors associated with use of medical care and alternative illness behaviours. 1986

Moss, G. Gender and consumer behaviour: Further explorations, 1999

Oxford University Press, Oxford English Dictionary, OUP Oxford, 2010

Oshin Vartanian, James C. Kaufman, Adam S. Bristol, Neuroscience of Creativity, The MIT Press, 2013

Paul Ekman, Emotions Revealed, Phoenix, 2004

Richard L. Gregory, Eye and brain: The psychology of seeing, 1997

Rizzo A, Parlangei O, Marchigiani E, Bagnara S. The management of human

errors in user-centered design. SIGCHI Bulletin, 1996

Robin Ridder, Gender Design in Web: Stereotypische Beeinflussung oder Consumer Benefit, Books on Demand, 2014

Su Qin, Seven days female doctrine, Wanjuan Press, 2009

Stephen P. Anderson, Seductive Interaction Design: Creating Playful, Fun, and Effective User Experiences, New Riders Pub, 2011

Susan M. Weinschenk, 100 cose che ogni designer deve conoscere sulle persone, Pearson, 2011

Trevor Van Gorp , Edie Adams, Design for Emotion, Morgan Kaufmann Pub, 2012

Tina Chanter, Gender: Key Concepts in Philosophy, Continuum, 2007

Wang Shaoqiang, Color Matching: Using Color in Graphic Design, PROMOPRESS, 2014

W.J. Thomas Mitchell, Picture Theory: Essays on Verbal and Visual Representation, University Of Chicago Press 1995.

Zhang Xiaolong, Wechat simple beauty, Machinery Industry Press, 2010

Article:

Barrow Neurological Institute, Corner salience varies linearly with corner angle during flicker-augmented contrast: a general principle of corner perception based on Vasarely's artworks, 2005.

ComScore, How do Women Affect the Internet, 2010

Hurlbert , Current Biology, Cell Press (United States), 21 aug 2007.

Jaak Panksepp, The neurobiology of positive emotions, 2006

Lishan Xue , Ching Chiuan Yen, Towards Female Preferences in Design, 2007

Megan Gambino, Do Our Brains Find Certain Shapes More Attractive Than Others? NOVEMBER 14, 2013

Paul Frijters^a, Tony Beatton, The mystery of the U-shaped relationship between happiness and age, 2012

Rachel Croson, Uri Gneezy, Gender Differences in Preferences, 2009

