Understanding of Healthcare Design

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Healthcare industry scope grows quickly due to the serious aging problems and the concerns towards health and well-being life increasing continuity. The peoples' recognition towards healthcare is not limited on the life extending; they pay more attention to how to ensure and develop normal functioning of a living organism, how to enjoy the whole process and so on. Therefor, the demand for health-related products and services increases.

Recently, many domestic，foreign enterprises and related research institutes do a lot of researches about healthcare and healthcare design, but the data or research about overall understanding of healthcare-related classification and different design methods to be used in the each healthcare part is not enough and clear, so the basic study to help understanding healthcare and healthcare design, with the diverse social issues and developing trends as the base, is very necessary.

In this study, classified the healthcare field by existing activities and issues about healthcare, and analysis each part develop and design direction, as well as design method, and also gave a case study to explain about how we approach healthcare design.

Key words: Healthcare, Healthcare Design, and Service

1. Introduction

The elderly population above 65s will reach to16-22% in the developed countries in 2020; this ratio in Korea was 10.7% in 2009, and predict to increase to 14.3% in 2018, 20.8% in 2026. Health care industry is one of the world's largest and fastest-growing industries. Consuming over 10 percent of gross domestic product in most developed nations, health care can form an enormous part of a country's economy. The scale of Healthcare industry is predicted to be 2.3 times of IT market, which the world market scale will be 3 trillion 2 hundred billion dollars. For United States, the health share of gross domestic product (GDP) is expected to hold steady in 2006 before resuming its historical upward trend, reaching 19.6 percent of GDP by 2016(Health Affairs 26, No.2 (2007)). By this serious aging problems and rapid market growth, healthcare design becomes hottest topic at the present day. But how could we, be as designers to get approach to it, how could we catch it?

1.1 Healthcare

Healthcare is the diagnosis, treatment and prevention of disease, illness, injury, and other physical and mental impairments and so on in humans. Healthcare is also a rapidly evolving industry where firms face constantly changing conditions and an ever-increasing demand for services. While the definitions of the

various types of healthcare vary depending on the different cultural, political, organizational and disciplinary perspectives, there appears to be some consensus that primary care constitutes the first element of a continuing health care process, that may also include the provision of secondary and tertiary levels of care. It could be classified into 3 big categories by its 3 different functions: preventing from disease, treatment and health keeping. Each of them has their own related area depending on the era.
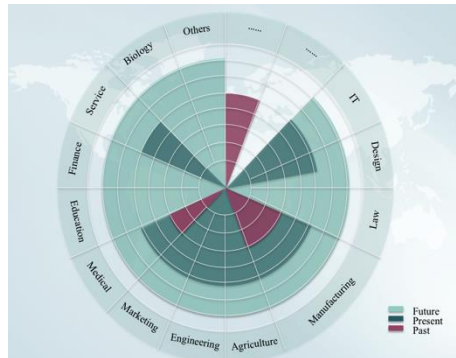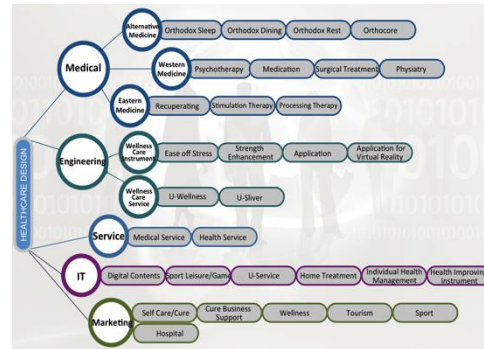

Fig. 1 Healthcare in Different Era

Fig. 2 Healthcare and Supported Disciplines

Today, with the growing of technology rapidly, is no longer confines the field of healthcare to simple disease treatments and pharmaceuticals, but evolves into an integrated area by the reliance on Engineering, Medicine, Services, Marketing, IT technologies and so on; and on this base, a variety of new industrial forms shows up.

With the supporting of various technologies cooperation, healthcare industry becoming more and more prosperous in recent years, and a lot of new healthcare forms come thick and fast. And these new forms are omnipresent and have affinity with our daily life, such as Health Food, Household support/service security, Tele-health management and so on. During the collecting process, we saw the multiformity of healthcare contents. Then following the attributes of each content, they could be grouped as self-cure market, self-care market sport market, healthcare tourism, wellness market, cure business support market, hospital market etc. By selecting for weak people- for healthy people as the horizontal axis, for individual- for business as the vertical axis, and all the healthcare items as the contents, drew the healthcare area chart.

And due to the different attributes, the contents have their own focusing point for design, for example, for home-care support service should be the backing（here the service part means the service simply）
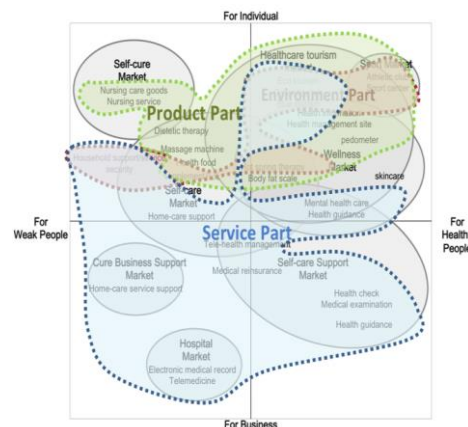

Fig. 3 Design Points for Healthcare Contents

1.2 Healthcare Design & Service Design

As we known, service design is an activity of planning and organizing people, infrastructure, communication and material components of a service in order to improve its quality and the interaction between service provider and customers. To stay competitive and survive the changes organizations are presently facing, they need to reassess the way they are structured, function and build relationship with consumers. Service design provides us with useful methods and tools to bridge the gap between the social reality and design, which means could it really a design that systematic, sustainable and most important is people-centered.

The growth of Healthcare design combining with the high technology and various disciplines shows a strong growing momentum. Service design could be a good way to balance development in healthcare area.

Service design business model is B to B, but with the people- centered as the design starting and also the design final purpose; and the healthcare design business model seems like B to C mostly, it means the most output of high technology serves to consumers directly. So by importing service design method into the healthcare design industry could form a completely circle and improve the quality of healthcare industry.
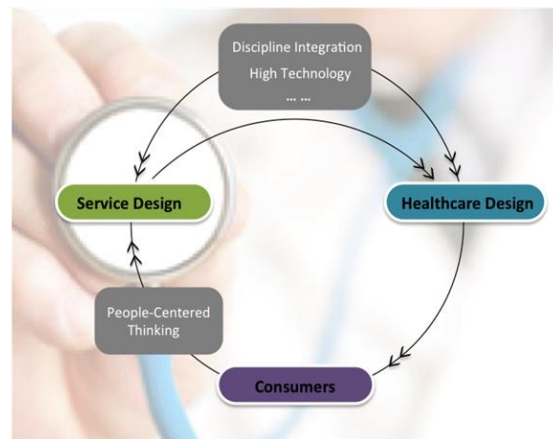

Fig. 4 Healthcare Design & Service Design

2. Method

Here the author will show two case study for explaining healthcare design clearly, one is healthy city design case that design for healthy people; the other is New Mass Customization Service Process Model for Artificial Knee Joint,

2.1 Case Study on Healthy City Design

Outdoor healthcare public utilities are paid more and more attention due to the increasing focus on people's health. Based on the preliminary statistics, world's healthcare market has invested as much as 927 trillion dollars and it has an immense market resource and developing potential. Therefore, in order to adapt to the changes of the global market and to establish a future healthy living environment, the major developed countries in the world have put healthcare as the new motive power for the development of cities and made positive exploitation and investment, especially in areas such as city

design. But so far, all kinds of cities' design and public design focus on the exploitation of the beauty of cities , concentrating on the city appearance and visual effect. Today, the vitality of city design has to be insured so as to improve the competency of design in a time in which healthcare is being extremely cared about. It is necessary to blend design with the new healthcare industry and exploit an energetic healthy city.

Table 1 The Differences between Health City and Normal City

	Existent City Design	Health City Design
Subject	Focus on Citizen and Resident	Focus on Citizen and Resident
Plan	Construct Remarkable city	Construct Healthy City and City Space
Form	Emphasized convenient usage	Emphasized healthy and lively city space
Function	Same using purpose	Differences depend on different installation
Service	Emphasized convenient and comfortable usage	Living support related health all the time
Citizen Health	Activities besides Public installation	Provide place and health activities

2.1.1 Research Necessity& Objective& Research Method

The aim to built Healthy City is to establish a new and effective way to clear up all kinds of factors, which may threaten people's health in the city life. It can guide people to choose healthy life and then lead the health life and Healthy City System to come true.

The city environment is the carrier of the Healthy City Design. On the one hand, it can guide people daily life by supporting healthy news at anytime, anywhere. On the other hand, In the healthy design, we have to target to improve city environment and facilities. It can guide people to increase activities efficiently. Through the two sides, we can establish a Healthy City guideline.

Screened out the important indicators of establishing healthy city through combining the social area analysis theory with the main determinants of health and city indicators; divided these indicators into both spiritual and physical features; and carried out empirical studies on these two groups of features respectively.

As for psychological feature part, happiness index test and environmental psychology test have been conducted. Healthy city guideline has been established in terms of the physical features part. And feasible survey has been conducted in Jeuoju in Korea and Beijing in China.

2.1.2 Healthy City Indicators Extract

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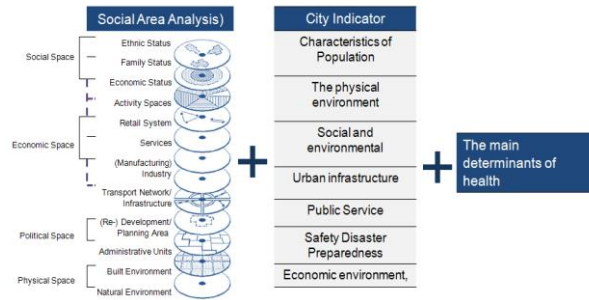
Fig. 5 Indicators collected

2.1.3 Sample Research

Psychological test and physical test about health city was underway.

The test average about healthy city in both environment psychological tests and happiness index tests are higher than general urban city, which could prove the feasibility of health city. After the Physical Test, all the guideline was verified in Jonju and Beijing
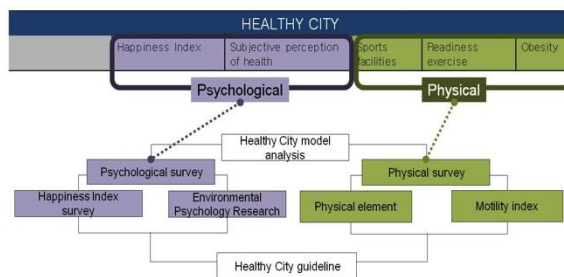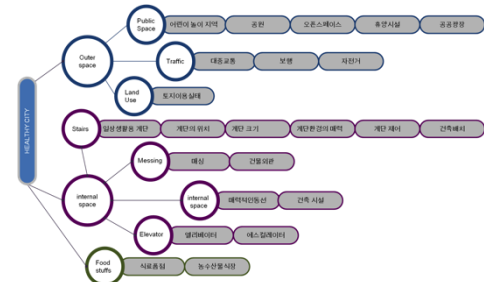

Fig. 6 Indicators collected

Fig. 7 Guideline Classification

2.1.4 Findings

Firstly, important indicators of establishing healthy city have been displayed.

Secondly, the importance of healthy city has been proved through the psychological test, and laid theoretical foundation for establishing healthy city system.

Thirdly, healthy city guideline has been established and proved feasible though field investigation.

3. Conclusion

The study for healthcare design is only a starting, under the interventions of multidisciplinary, the study are and study method of healthcare design will be more diversification. By importing service design method into the healthcare design industry could form a completely circle and improve the quality of healthcare industry.

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