디자인 컨설턴트 발전을 통한 디자이너의 가치 향상

New Role of Designer’s Value through Design Consultancy Developing

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요약
세계 경제의 일체화, 공업 설계의 글로벌화, 그리고 세계 기술혁명과 사회경제의 발전으로 각 나라의
디자인 컨설팅업계 또한 홍기되기 시작하였는데 이는 새로운 제품의 창조와 새로운 시장을 개척하는데
새로운 에너지를 주입시켜주고 있다. 동시에 디자이너들의 디자인 또한 단순한 제품을 디자인하는 단일한
행동으로만 가치를 창조하는 것이 아니라, 디자이너의 직능과 가치 창조의 경로를 통하여 디자이너의 직
능과 가치 창조의 방법을 통해 다원화적인 방향으로 발전하기 시작하였다. 본 논문에서는 우선 관련 문헌
을 통해 현재 디자인 컨설팅의 기본적인 개념, 유형 등 내용을 살펴볼 것이다. 두 번째는 선행연구를 통해
영국, 일본, 한국의 디자인 컨설팅업계의 발전 상황, 발전 추세 및 경제발전 과정에서 디자이너의 발전
상황과 직능의 전환 상황에 대해 고찰해볼 것이다. 마지막으로, 현재 기업에서 디자이너가 공업 디자인
자문을 할 때 역할과 지위의 변화 확장에 있어서의 모호성에 대해서 본 연구의 결론을 제기할 것이다.
또한 전체적인 프로젝트의 기획자, 디자인 전략의 기획자, 전반적 디자인 프로세스의 제공자, 고객 사유의
인도자 등 넷 가지 측면으로부터 디자이너가 공업 디자인 서비스를 제공할 때 담당하는 역할에 대해 설명
할 것이다.

Abstract
The design consultancy, with the development of economic integration, globalization of
industrial design, technology revolution in the world and social economy, has come into being
and grown gradually, which has injected new energy for the innovation of products and the
expansion of new markets. Meanwhile, designers’ function and their means to create value have
started to diversify, instead of the single one, designing products only. As far as the thesis is
concerned, it introduces relevant literature first so that basic concept, classification and etc. of
the present design consultation are given. Second, with the help of certain research in advance,
it shows the growth and the trend of design consultancy in UK, Japan and South Korea, as
well as designers’ progress and the diversion of their function with economy development.
Finally, the conclusion is given on the basis of the ambiguity of designers’ function in industrial
design consultation in present corporations. Besides, it points out what roles are likely to be
played by designers, as the planner of the whole project, the maker of the strategy, the provider
of the whole program, the guide of clients and the supplier of related database, while providing
industrial design consultation.

keyword : Design Consultation | Designer | Value
1. INTRODUCTION

1.1 Research Background and Purposes

With the fast development of science and technology and increasingly intense competition of the internationalized market, the present competition among enterprises has become more and more fierce, resulting in unprecedented expansion of intension and extension of products. As regards product design, considering exterior and function only can not meet consumers’ demand and the fierce competition any more. With the promotion of people’s living standard and taste, people’s requirement on products have turned from "quantity" to "quality", even "emotion exchange", which makes product design upgrade further to be diverse and personalized. As to designers their value can be realized through "value innovation"brought about by product design. The way to realize value innovation has been under researches in depth of many experts around the world. There are two major ways. First, to do survey on various consumer groups and classify them so that their deep consume demand will be got, then provide innovation products for various consumers to meet their diverse living demand. Second, with the assistance of innovative design, to convert the concept value of products so that more market shares and profit will be won, then consumers’ concept demand and culture demand will be met through opening up the undeveloped designing field and new market[1]. Besides the above two ways, if there exists a third way to realize designers’ value creation.

The international design consultancy, with the development of economic integration, globalization of industrial design, technology revolution in the world and social economy, has come into being and grown gradually. It has been an industry of multi-disciplinary, cross-industry and comprehensive service integrating economy and technology. Do-Hoe Kim (1999)[2], has done an all-sided description of the history, development, function and future development of design consultation. Concerning the necessity, she makes a use of historical examples to show that the status of design and designer may be enhanced by setting up design consultation. Li Yanzu and Wang Mingzhi (2006), in their book Design Procedure and Design Management, said: "Non-Japanese designers enjoy high reputation in Japan recently, for their creative activities. Because of their good name, they are employed as consultants for product development or design consultation by enterprises of other countries or regions situated in Japan[3]." All theory foundation of these antecedent researches has proved that the embodiment of designers’ value at present is more than the concrete designs. It is designers who should seek to join in design consultancy first, if they want to enhance their social status and get a long-term development for their value creation. Now relevant design seminars and journals are increasingly interested in how designers help enterprises to make commercial design consultation, such as according to clients’ background and the fact, which products investment should be expanded, which technology should be invested, which new market should be exploited and etc., in order to help them win bigger profit space. The designers in enterprises recently, however, still are relatively not clear about how to join in industrial design consultation and what role can be played in it.

And the purpose of the paper is to find out what kind of role can be played by designers in industrial design consultation through the survey and analysis on designers’ development in it.
2. THE BASIC DEFINITION AND CLASSIFICATION OF DESIGN CONSULTATION AND VARIOUS TYPES OF INSTITUTION

2.1 The Basic Definition of Design Consultancy

There are various definitions of design consultation, but the basic part of them is similar, with some being more concrete and detailed. Understanding its definition is the first step to understand design consultation. Jay A. Betrus, an American scholar (2000), put it in this way: "engaging experts from outsiders to provide insiders with professional skills."[4] Moreover, he points out that design consultation includes providing information, operation consultation, management reform, exploitation of learning ability. Zhang Youren (2002) argues that it is to provide consultation for enterprises in making and developing products. And advisory agency should carry through practical diagnoses on products in existence of the enterprise, finding out problems and gap, providing strategies to develop consultation business so that its design ability and situation will be improved[5].

"During every stage of put consultation program into practice, consultants offer clients intellect service with their technology, experience and information and etc.." [6], stated Yang Yin and Chen Hao (2004). On the basis of the author's previous research, the definition of it is as follows: through design consultation, products diagnoses, strategy making, design, reforging, conformity and operation (being into practice) should be carried out so as to provide clients with design value. With the use of relevant knowledge, taking objective facts as precondition, designers will play the role as experts and advisers simultaneously[6].

2.2 Classification of Design Consultation

In their paper, The Rising and Expectation of Design Consultancy in China, Yang Yin and Chen Hao have mostly classified it into the following types: design information consultation, design management consultation and design strategy consultation. Considering the development and status quo of it in the world, according to the arrangement and practical demand of design procedure, design consultancy may be classified into the following five types.

2.2.1 Design Strategy Consultation

Mainly set down comprehensive design policies, design development layouts and large-scale design projects for enterprises, with feasible strategy and consultation service. It is involved with users, market survey, modeling, feasibility development and etc..

2.2.2 Design Project Consultation

Give priority to large-scale design product research. The service includes region development layout, large-scale design product projects, design consultation on vehicles and etc., such as the feasibility research on railway, automobile and etc..

2.2.3 Design Technology Consultation

With products technology service as the focus, provide feasibility research and consultation for new products development, introduction of new products and etc..

2.2.4 Design Management Consultation

Putting design management of enterprises first, it is made up by procedure design, communication design, production design, package and transportation of products design and all kinds of related questions consultation. Aiming at the consultation questions from enterprises, doing in-depth enterprise investigations, with qualitative analysis and quantitative analysis on problems in existence in design management of
enterprises through scientific methods, design management experts provide for improvement scheme and do as instructors, in order to enhance the design management level and the economy benefits.

2.2.5 Design Specialty Consultation

Its scope is relatively narrow, but more professional. Besides, it includes some consultation in connection with the above types.

The above five types are classified according to the point that it is a project of service. They are not separated absolutely, but with differences in scope and scale. Present design consultancy corporations or related institutions can do comprehensive consultation.

2.3 Types of Design Consultancy

Providing experts’ advice with the usage of special methods and design knowledge is one part of design consultation. Usually, all of those are believed to come from the outside. But that is not true, because inside designers, including designers and design managers and etc., also offer the similar service to their enterprise. As a whole, there are four types of design consultancy: the independent design consultancy, the design consultancy attached to some enterprises, public institutions of government or corporate body, the provisional design consultancy organized by many bodies (schools, science and research institutes), the design consultancy being related with some non-profit organizations in the form of committee of experts, advisory committee, academy, association and etc..

3. SURVEY AND ANALYSIS ON THE STATUS QUO OF DESIGN CONSULTANCY

3.1 The Status Quo of Design Consultative Industry in UK

3.1.1 Development History under the Influence of Economy

The growth of present design consultancy often has close relation with the development of national economy and enterprises’ cognizing level on design. Consultancy has a long history in UK, while consultancy institutions consisted of government advisory organizations, consultancies, research database and etc.. As early as the late 19th century, project consultancies were founded in succession. And from 1970s, for the demand of the market, consultancies have grown gradually. Although all of them were small-scaled, even some being made up of a couple of staff, they did promote the growth of design industry in UK. Some design organizations of certain strength offered service not only for UK enterprises, but also for many large-scaled enterprises in the world. For instance, some design consultancies in UK, such as Cambridge Consultants Fitch, enjoyed a relatively high reputation in international design circle.

However, these design consultancies, especially those small-scale, were inclined to be affected by social economy. In the event of economy depression, it is relevant design and advertise budget that was reduced first. Even during the period of 1990s and the early 21st, the golden time of economy, with the enhancement of design sense of clients and the expectation on design level, design consultancies still have had to face serious challenges. They needed to develop new markets, offer international service for their clients. Meanwhile, they had to undergo intense competitions, for the founding of Europe Union which removing the inside trade obstacle in Europe and giving priority to the protection of domestic market share.
3.1.2 Status Quo of Design Consultancy

Europe is one of the continental focused closely on design, as the birthplace of the world’s industrial design services. Rapidly developed design service industry is becoming an important export industry of the United Kingdom. Output of design services industry is 120 million Pounds in 1997. Output value of 2000 reached 26.7 billion Pounds. Annual average growth rate is about 30.5%. In 2003, there are about 4,500 registered institutions and 76,000 employees engaged in the design consulting services in UK. The quantity of institutions surged up violently compared with year of 2001 and 2002, which has about 3,700 and 4,000 institution. In recent years, the UK design services exports are growing. Design and consultation service revenues reached 1.4 billion Pounds in year of 2002. There is a consumer who will purchase product design by UK every 6 seconds globally[7][Fig. 1].

Fig. 1. Design consultancy service’s sell of UK from 1998 to 2002.(Unit: M pounds)

The development of Design consultancy is pretty successful in UK. The design consulting company has been growing gradually to 2,400 in year of 1999, while the design income increased 20%. The design personnel corresponding increased to 45,405 while the design income is creasing. But the number of designers is only 16,831 people, only increased 37%. As mentioned before, till year 2003, there are about 4,500 registered organization and 76,000 employees engaged in the design consultancy services. But designer are only 23,894. It shows that designers are moving to design consultancy company from pure design work [8][Table 1].

<table>
<thead>
<tr>
<th>Table 1. Amount of companies in consultancy</th>
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<tbody>
<tr>
<td>Consultancies</td>
</tr>
<tr>
<td>1999</td>
</tr>
<tr>
<td>2450</td>
</tr>
<tr>
<td>Design-related</td>
</tr>
<tr>
<td>45405</td>
</tr>
<tr>
<td>Designer</td>
</tr>
<tr>
<td>16831</td>
</tr>
</tbody>
</table>

However, compared with other industries, design consultancy needs sound professional knowledge on design from employees, to whom it is necessary to hold relevant degrees. There are so many design graduates in UK that the standard may be kept. To designers, new skills and technology may be got through instruction and practice, while it is necessary to learn 'hidden knowledge' in the industry. Neither on design manual or management handbook, nor being expressed in language, the knowledge exists in groups and can be shared and stored in social activities.

3.1.3 New Concepts and New Trend of Design Consultancy

Recent years see dramatic changes in the aspect of staff development and commercial continuous consummation in UK. These changes are related with so-called new thoughts, ‘learning organization’, which help understand the relation between designers’ continuous learning and the development of enterprises. Learning can be done in designers’ daily activities and their results, which is within and beyond classrooms or academic conferences. Organizations, which often do practice and learning, usually are equipped with the following features:

1. Continuously learning from practices, including
new fields, new technologies, new markets, new products and etc..
(2) System to share information, both within organization and outside it.
(3) Self development and culture in learning, including self-examining practice, adventure spirits and evaluation system.
(4) Involving in policies and making strategies, for designers, who are creative and pioneering, represent their clients; However, only as products innovation makers, they’re not allowed to take part in management.

3.2 Status Quo of Design Consultancy in Japan

3.2.1 Development History
Design consultation history in Japan is less than half a century. After WWII, it first came into being in project consultancy, which was popular at that time, developed well in 1950s, with consultancies began to be found at the turning period between 1960s and 1970s. Japan was well-known for its product development. However, there were not enough designers. According to the survey made by National Trade Department and Economic Industry Department in Japan in 1992, there were about 2,935 companies related with design in Japan, paying tax up to 197.4 billion Japanese Yen (2.09 billion US Dollar). Among 16,861 employees, there were 12,649 designers. Among these companies, 1,498 or nearly half of them were specialized in design. According to the survey in 1990, it was expected that there were between 160,000 and 180,000 designers. As 90% designers were employed by non-design companies that were the reason why there were only 12,649 designers, 7.5% of the above number. In 1994, another survey on the above 300 design companies made by Design Promotion Association affiliated to Japan International Trade and Economic Industry Department found that 40% of them were capable to offer design, layout and consultation and etc.. So companies in Japan which can be called as design consultancies were fewer than 600, which seemed not enough at all while compared with the large design market space. The concrete data is shown in the following [Table 2][Table 3].

### Table 2. Amount of companies in consultancy

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>1996</th>
<th>Increase rate(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary Companies</td>
<td>6350101</td>
<td>6717025</td>
<td>5.5</td>
</tr>
<tr>
<td>Consultancies</td>
<td>10010</td>
<td>10210</td>
<td>2.0</td>
</tr>
<tr>
<td>Proportion</td>
<td>0.16%</td>
<td>0.15%</td>
<td>-</td>
</tr>
</tbody>
</table>

### Table 3. Amount of employees in consultancy

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>1996</th>
<th>Increase rate(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary Companies</td>
<td>Total 60158044</td>
<td>62781253</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>Male 34882434</td>
<td>37041521</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td>Female 25275610</td>
<td>25739732</td>
<td>1.8</td>
</tr>
<tr>
<td>Consultancies</td>
<td>Total 46861</td>
<td>47068</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>Male 27754</td>
<td>27878</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>Female 19107</td>
<td>19190</td>
<td>0.4</td>
</tr>
<tr>
<td>Proportion</td>
<td>0.08%</td>
<td>0.07%</td>
<td>-</td>
</tr>
</tbody>
</table>

Data of [Table 1][Table 2] from Li Yanzu, Wang Mingzhi, *Design Procedure and Design Management*, Beijing Tsinghua University Pub, 2006.

In *Design Policies White Book*[9] compiled by Japanese Ministry of Internal Affairs in October 2002, there are analysis on statistics and data related with design industry given by ‘Survey Report on Causes and Enterprises in 2001.’ It shows that there was 12,649 professional staff in design companies in 1990, while the amount became 46,801 in another survey made in 2001, fully increased by 3.6 fold. There were about 10,010 design companies, with the percentage is 40%, so there were about 4,004 design consultancies,
which increased by about 6.6 fold from 1994 to 2001. The above data shows the increasing demand of design consultation and the increasing amount of designers.

3.2.2 Status quo and Influence of Government and Economy

During 1950s and 1960s, there were many design consultancies in Japan, who belonged to the first generation of design circle, most of them had been engineering consultants who had introduced design to industry in the period of post-war reconstruction. In 1970s, with the increasing demand of design caused by economy development, the design department in enterprises began to expand, with independent design companies began to be founded. Design consultancies came into being in 1970s and 1980s; however, they were not consultants, they were subcontractors of clients. With the end of Japanese industry development, followed by economy depression in 1990s, staff had been reduced in all industries in Japan, including designing. Most companies lay off half of their employees, or sent them to other departments, resulting in low employment rate to designers most of whom were unwilling to change their job found their own studios, meanwhile graduates of design major and the related majors for that matter.

Design industry in Japan depended on the design needed by industries, so there was no independent sales channel for most design companies. It was the disadvantage that resulted in new change and transform in design circle. In 1995, ‘The design policy office was founded in international trade management bureau by Japanese international trade and economy industry department.’ It has been significant to design Industry, for it means that designing has been taken as a way to improve exports by Japanese government, and as a basic industry and service industry of design in Japanese.

3.2.3 New Trend of Japanese Design Consultancy

Opportunity often exists in chaos. Now some professional designers in Japan are developing toward new direction, for they not only do simple form design of products, but also convert their functions which have been applied by them in these fields such as internet, market, technology and etc. As regards those traditional design companies, they have adopted a more flexible system to make a full use of present situation. Then the new form of three kinds of new industrial design consultancies comes[10].

(1) Form of internet system

When taking design projects, 30 to 40 outstanding designers, editors, art-workers may be maneuvered temporarily to work with researchers together to undertake the design project, which will enable a temporary design net system is founded within the shortest possible time. Advantages include being comprehensive, diversity in controlling, creating and thinking about the design project, controlling budget effectively.

(2) Form of market research

Making a use of designers’ survey ability on products design, database will be founded, which is related with many aspects. With their advantage in data, design consultancies may draw products design and make their brand strategy, which will show how to develop design or how to market it. Setting up a system to evaluate design’s benefit. In market, which enable the result is foreseen before a design has been developed or put into market.
(3) Technology oriented form

This is a type of the middle of design and technology. Designers’ main intention is to visualize engineers’ dream, sometimes to help them build up a clear logic, sometimes to convert a vague concept into a concrete image. Designers may make a use of ‘concept projects’ to help users and design managers understand products.

3.3 The Status Quo of Korea Design Consultancy

3.3.1 Its development history under the influence of economy and brief introduction of design companies

Comprehensive plan of industry design has been put into practice by Korean government since 1993. At that time, the amount of designers and design companies increased fast, with gradually rising in investment of small-medium companies on design development. In 1997, economic crisis stroke Korea, facing the demand of innovation in design strategy of enterprises. In 1998, Korean government began to carry out the 2nd comprehensive plan to promote industry design, in the hope of encouraging designers to expand their creativity and improve design quality in Korea.

In 2003, realizing the core role played by design in national competition, Korean government began to advance the 3rd comprehensive plan, which makes it become the industrial distribution center in Southeast Asia. Korea Design Center (KIDP) carried out a survey on design, which included industry design and education status quo. According to it, there are 1,215 professional design companies totally in Korea at present, among which 52.4% belong to enterprises and 45.8% to private companies. Besides, it shows that vision design companies accounts for about 52.4%, product design companies about 29.7%, package design about 23%, multimedia design 11.5%, environment design 12.1%, other design 8%, arts and crafts design 2.4%, weave design 0.9%. Most environment design companies belong to enterprises, while most vision design, product design and package design companies belong to private enterprises. It is shown by the following [figure 2][11].

Fig. 2. Consultancy of design companies types in Korea

3.3.2 Status quo of design human resource

There are totally 8,383 design workers in professional companies in Korea, among which 65%(5,449) are male, and 35%(2,934) female. Usually there are 4 to 8 employees in a company, with an average of 6.9. It is shown in [Table 2].

<table>
<thead>
<tr>
<th>Design Industry</th>
<th>Korea(2002)/person</th>
<th>Japan(2001)/person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>8383</td>
<td>46861</td>
</tr>
<tr>
<td>Male</td>
<td>5449</td>
<td>27754</td>
</tr>
<tr>
<td>Female</td>
<td>2934</td>
<td>19107</td>
</tr>
</tbody>
</table>

Most of them are for vision design(45.9%), the others include product design (25.4%), environment and interior design (11.2%), multimedia design (9.1%), others (5.2%), textile design (3.1%). According to vocation career development record, 37% of them have worked for 1 to 3 years, while 28% of them for 4 to 6 years. Although the amount of employers keeps increasing as a whole, the proportion of senior workers
is decreasing gradually. Design sector of every enterprise employs related designers at an average of 12.7, while 5.1 in private companies.[12]

As to gender, beside weave design field, male designers are more than female ones in other fields. From the aspect of relation between vocation career and level of education, the proportion of the female becomes lower and lower, with the longer vocation career and the higher education level. Meanwhile, changes also happen to designers’ functions. Design contests in all countries and all awards every year show that, beside product form design, structure design, designers also develop comprehensively, such as skill type, network, design management and etc..

3.3.3 Status quo of design consultancy in Korea

The status quo in Korea from three aspects.

(1) Problems while undertaking design projects

The biggest problem is the lack of customer acceptance. Designers believe their most serious weakness is design planning capability (31.7%), followed by practical design skills (31.7%), Presentation ability, non-design-related knowledge (8.6%), and relationships (6.9%). While improving these weaknesses, most staff (75.5%) will choose training within enterprises instead of exterior training. In fact, there are about 58.4% respondents who believe that interior training is the most efficient way.

(2) The focuses needs to be strengthened while design training

There are 40.8% respondents who said that it was design practical training which needed training most. Other focuses include strengthening improving creativity training (26.7%) and marketing and planning training (24.6%).

(3) Status quo on investment of design consultancy

It is estimated that sales of professional design companies was 586.6 billion Won, an average income of every company is 48 million Won. Companies with sales being over 1 billion Won only occupy 14.2% of the total number of companies, while their sales 45.9% of the total sales of all companies. 54.7% companies’ sales were less than 30 million Won each, and their total sales occupy 18% of all companies’. From the above data, small number of companies dominates the whole market, while vision design enjoying the largest market share, followed by product design, environment design, packaging design, process design, multimedia design, other, and textile design.[13]

3.3.4 The development of design consultation industry

Korea now is a country with competitive design, more than competitive price. Abroad market share of Korean products increases gradually. According to statistics from Korea Design Center (KIDP), the amount of small and medium companies in which there are sectors related with design has increased from 50.1% in 1997 to 66.5% in 2002, which shows the expanding of design in small and medium companies. They began to realize that design is an investment rather than a burden, which have changed from price orientation to design orientation and quality orientation.

3.4 Conclusion of the analysis on design consultancy in UK, Japan and Korea

Development and changes in design consultancy in UK, Japan and Korea have been dominated by their government and influenced by economy.

(1) In 1950s and 1960s, most designers were converted into by engineering technology advisers at the beginning of development of design consultancy.

(2) In 1970s, with the development of economy, the
requirement of design became higher, resulting in the expanding of design center in companies. At this time, designers’ function gradually became an important part in companies.

3. With design companies coming into being in 1970s and 1980s, designers’ function began to diversify. Then designers needed not only design ability, but also improvement in creativity in other aspects.

4. 1990s saw global economy depression to much extent. And design experienced serious influence, for all industries of all countries reduced their sectors. And design consultancy was no exception. At that time, some designers were forced to leave their job or went into other business for the reason of economy; some, being independent, founded their own studios. Facing the pressure of social economy, designers began to have new concepts and there were new trend to design consultancy. What designers could do is more than simple design. Keeping at learning new technology, new thoughts and etc. further, designers should be more active to take part in design consultation industry or design policies and design process. Through understanding, learning and practice, they should get the comprehensive abilities more than design. The traditional means in Japan is to learn the advanced of other countries so as to imitate it, absorb it and recreate it last. What were highlighted in UK are continuous concepts, practice, information, reflection and evaluation. As to Korea, training on creativity and marking was important. Through these training, designers’ comprehensive abilities would be stronger and their functions and value realization began to diversify.

4. CONCLUSION

With the above survey and analysis on design consultation industries of the three countries, the paper is done on the history and status quo of design consultation industries, the development of designers and development trend of design consultation, which was under the influence of economy. According to the relative data and development trend, the amount of design companies and designers has kept increasing since government began to support design industry. Added by the influence of economy on design consultation industry of every country, demands from all aspects on designers are higher and higher, resulting in that the realization of designers’ functions and value is more than their contribution to products design. With designers group being increasingly stronger, changes happen to roles played by designers. As to designers who do design consultation in companies, especially offering service to products design consultancies, roles played by them may be considered from the following aspects.

1. Planner of the whole project. They may control the whole design plan and coordinate other sectors.

2. Planner of design strategy. They may offer and participate in strategy instruction in clients’ organization degree, and help clients consider how to form and realize strategies.

3. Provider of the whole design procedure. They may provide clients with a reasonable whole design procedure, which can be used by clients to develop products or solve any problems in products development.

4. Guide of clients’ thought. According to design plan of relative consultation and data from clients, they help clients find the direction of investment and expanding of new products
What functions and roles may be done by designers have been shown in the above content from 4 aspects. It not only expands designers' employment scope, but also makes designers strengthen their comprehensive abilities. While improving their design level, they can show their talent in other fields, which may make the realization of their values colorful. However, to make all of those, it is necessary that there is a client who know something about design and design value, and give supports of many aspects to designers who will create design value.

[12] Ditto
[13] Ditto