

Development and Future Outlook of Taiwan's Design Industry

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Under the influence of globalization, design has progressively become a key factor in the competitive advantage of Taiwan's industries in their transformation from being subcontracting industries leading to the globalization of manufacturing. For this reason, in recent years, the Taiwan government has been actively making the necessary arrangements for a design industry environment, as well as the training of design personnel to assist industries in enhancing their corporate brand image and market competitiveness, and further strengthen the soft power of the country as a whole. Taiwan Design Center serves as a design center at the national level, and since its establishment in 2003, it has shouldered the responsibility of carrying out government policies and missions, and meeting the expectations of the design industry. It is committed to the development of an integrated services platform for the creative industries in Taiwan to enhance the originality of design talent, and promote the exchange of international design. In addition, Taiwan Design Center serves to strengthen Taiwan's industrial market competitiveness, and establish the foundation for Taiwan enterprises to develop their own brands to increase the added value of their industries. This paper draws on research related to the matching practices and process in the design industry over the past nine years, statistical investigation of Taiwan's design industry, and a supply and demand investigation of design service industry professionals. In all, this paper hopes to provide the results that have advanced Taiwan's design industry in recent years and its future outlook, as well as serve as a reference for those countries carrying out research in the design industry.

Keywords: design industry, design promotion, Taiwan Design Center

I. Current Status of Taiwan's Design

After the Third Wave economy, also known as “IT Industry”, the cultural and creative industries now has been considered as the “Fourth Wave” economic synergy. Especially after the financial tsunami and China's emergence, the economic impact force of global Chinese has attracted much attention than ever. In addition to the economic capability, every country's innovation ability, design capability, cultural characteristics and lifestyle will become increasingly important due to that we have already lived in the new century of “Knowledge-based Economy” and “Aesthetic Experience”.

Taiwan's economic transformation has two important foundations: one is technology, which has formed a complete industrial system. Another one is “Cultural Aesthetic”, which indicates the cultural and creative industries that actively promoted and developed in Taiwan. Due to the impact of globalization, culture and knowledge have become important assets, the higher level of globalization, the faster culture and knowledge flow, as well as the good digestion. For increasing these cultural and knowledge-based added values, it needs to start with improving the aesthetic level, and uses “Design” to practically improve the aesthetic level. Thus, the deepening development in Taiwan's design industry has become the important task for current national and economic development.

From the learning chart issued and designed by Hugh Dubberly (2010), it can be seen that along with the evolution of the times and technologies, we have to enlarge our vision, ponder on the human-centered design, advance the product design into the fields of “Interaction Design” and “Service Design”, to assist Taiwan's industries in making use of the innovative design power to escape from the competition of Red Ocean, and create the opportunities to experience the economy in the new era. This paper draws on research related to the matching practices and process in the design industry over the past nine years, statistical investigation of Taiwan's design industry, and a supply and demand investigation of design service industry professionals. In addition, this paper hopes to provide the results that have advanced Taiwan's design industry in recent years and its future outlook, as well as serve as a reference for those countries carrying out research in the design industry.

II. Investigation of Taiwan's Design Industry

In 2012, Taiwan Design Center (herein referred to as TDC) carried out a statistical investigation on domestic design industry, which the main purpose was to understand the current status of Taiwan's design industry. Compared with the previous process, this investigation focused on these two following objects: one is the design service industry (herein referred to as Design House), and another is the internal design sector of industries (herein referred to as In House). The reason of

classification is that since the promotion of cultural and creative industries carried out in Taiwan, the formation of design industry has been matured gradually, and there're more and more design companies that have been independently spun off from original enterprises; therefore, impact and phenomenon different from previous have been yielded then. The investigation contents will be introduced as follows:

(1) Design Service Industry (Design House)

In recent years, design service industry is the key industry of development in Taiwan, according to the fiscal information from the Ministry of Finance (R.O.C.), the result shows that, from 2005 to 2009, the design service industry output has slowly grew from NT\$ 50.2 billion to NT\$ 89.2 billion, but there's a turning point occurred in 2010, since the impact of financial crisis, the operating performance has slightly declined in 2010 and 2011. The gross output of this industry is continuously grew upward; in addition, by observing from the number of enterprises or companies, it certainly discovers a trend of stable development in Taiwan's design industry, where there're only 2,096 design service companies in 2005, but increased to 2,938 companies in 2011. The large-scale operating companies are no longer existed gradually, and replaced by the companies with creative thinking and execution. These design companies have their unique design style, among which, the number of design service companies with a turnover less than NT\$ 5 million has accounted for the maximum percentage of 41.0%, and 81% of these companies have less than 12 employees.

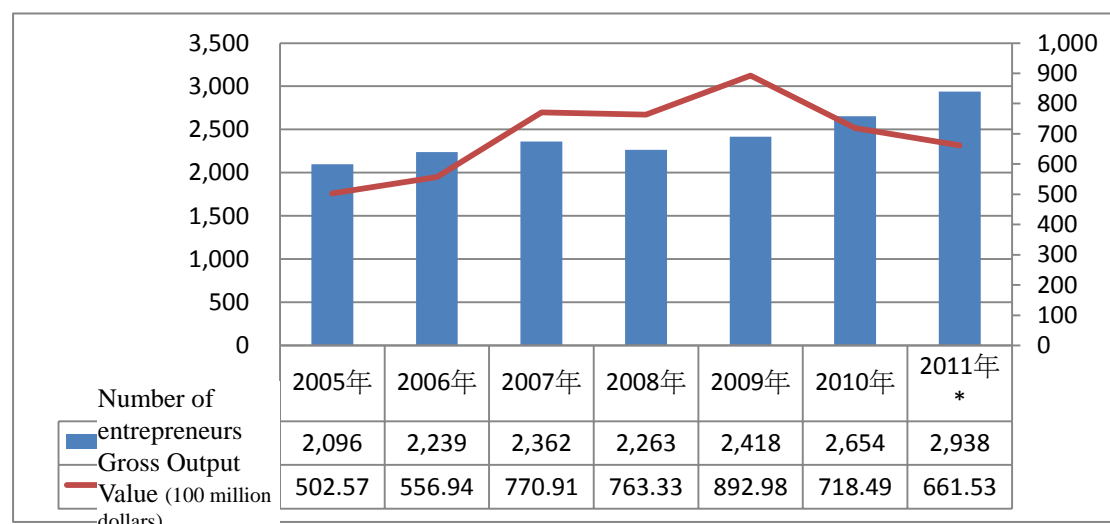


Figure 1. Number and Gross Output of Design Service Enterprise

Data Source: Fiscal Information Agency, Ministry of Finance (Data from March 2012).

Unit: Company / NT\$ 100 million

(2) Design Sector of Industries (In house)

Only 32.2% enterprises will independently establish internal design sector, and

most of them will subordinate the design sector to the R&D sector which accounted for 47.6%. Next will the design sector that subordinated to the marketing sector which accounted for 23.8%. When making further explanation for the types of industry, most construction industries will independently spin off their design sector (62.5%), manufacturing will subordinate the design sector to their R&D sector (64.4%); among which, electronic industries have the maximum ratio, 76.7%, of subordinate the design sector to their R&D sector, and the service industries will also subordinate the design sector to their marketing sector (48.4%). Since a high correlation existed between manufacturing's design and R&D, thus most manufacturing's design sectors will subordinate to their R&D sector; on the other hand, the subsidy of government's industrial policy has been mostly used to encourage enterprises to carry out the innovative R&D; therefore, most of them will establish a R&D sector, rather than setting the design sector additionally, and some enterprises even considered the entire R&D sector as the design sector.

Table 1 Organizational Orientation of Enterprises' Internal Design Sector

Industry Type	Established Independently Operating Design Sector	Subordinated to R&D Sector	Subordinated to Production Sector	Subordinated to Marketing Sector	Subordinated to other sectors	Number of Companies
Total	32.2%	47.6%	3.5%	23.8%	14.7%	143
Construction	62.5%			25.0%	12.5%	8
Manufacturing	26.7%	64.4%	3.0%	16.8%	12.9%	101
Electronic	16.3%	76.7%		25.6%	11.6%	43
Non-electronic	34.5%	55.2%	5.2%	10.3%	13.8%	58
Service Industry	38.7%	9.7%	6.5%	48.4%	19.4%	31
Others	66.7%				33.3%	3

(3) General Situation of Design Service Industry and Industries' Internal Design Sector

For the salary of design industry, the new design employees will have a low salary, and averaged annual salary will be NT\$ 421,000 for the new designers in enterprises' internal design sector, mostly centered around NT\$ 310,000~400,000, and accounted for 54.6%. Employees with averaged annual salary less than NT\$ 300,000 are accounted for 8.4% also, and employees whose averaged annual salary more than NT\$ 600,000 are less than 10% (8.4%). If it is determined by the types of industries, the employees of electronic industries have the highest averaged annual salary of NT\$ 435,400, and the ratio of new employees (without experience) with averaged annual salary more than NT\$ 500,000 that will be higher than other industries. The employees of construction industries would have the lowest beginning salary of NT\$ 350,000 only, and also the employees of service industries have a low beginning salary of NT\$ 386,300.

From the viewpoint of enterprises, the labor remuneration is a very important cost investment, especially for the characteristics of design industry. The most

important production investment is the human capital that will provide the original concept; as a result, from these two ratios: “output /total salary” and “added value /total salary”, it discovers that how much output can be created and the added value accounted by one unit of salary expense. By viewing 2008 data, the output, added value and total salary were NT\$ 76,232 million, NT\$ 49,384 million and NT\$ 8, 337 million respectively, thus the output /total salary was NT\$ 9.14 and the added value /total salary was NT\$ 5.92 then. The result of annual change showed that the total salary level of design service industry has no changes in the same trend along with the business fluctuations.

Taking examples in 2011, the total revenue (output) of design service industry declined to NT\$ 66.153 billion, but the estimated amount of the total salary grew up to NT\$ 8.5 billion. This indicates that even the total amount of enterprises’ outsourcing design would be declined along with the depression of export industries; however, due to these domestic industries have gradually emphasized on design as the trend of their development; in addition, the previous investigation result also shows that the number of domestic design companies is still increased stably; as a result, the standard of the total salary has still been driven upward. Therefore, the consequent result reveals that the design output created from each unit of human investment have slightly declined, and such phenomenon is mainly caused by corresponding the business factor and the increased participation number of design service industry.

For the policy implication, even the design service industry still remains a stable expanding situation in recent years; however, in terms of the changes in the total revenue (output) scale, it showed a fluctuated status which closely followed the international business cycle. Thus, such result indicated that domestic enterprises still not consider the outsourcing design as a necessary and prior investment, and the service force of domestic professional design service industry has not yet reached a competitive level that can be irreplaceable, so that enterprises will prior to reduce the design budget or outsourcing and carry out internally during the economic depression. Therefore, this situation has made the future policy-making to be still emphasized on these two parts as follows:

1. Strengthen the assistance of enterprises in recognizing their investment in design activities, and enhance the incentive to carry out investment.
2. Continuously enhance the diversification and deepening for domestic design service industry, and improve the irreplaceable ability of integration.

III. Supply and Demand Investigation of Talents

According to the current status of foregoing design industry, it reveals that the design talents are the main output providers and resources for the design industry; therefore, the quality of design talents has become an important key of design

industry's development in Taiwan. The following will introduce the investigation on the supply and demand of talents that carried out by TDC previously:

1. Demand for Design Talents

The job position of “Designer” is still the main demand of the design service industry for professional talents. The averaged manpower demand for designer is 1.1 for each company, next are 0.42 “Project Planning”, 0.36 “Salesperson”, 0.35 “Integrated Research Type”, and 0.18 “Program Development Personnel”. Overall speaking, in 2012, the averaged demand of the design service industry for professional talents was 2.42.

Table 2 Number of Demand for Various Job Positions of the Design Service Industry in 2012

Types of Company	Designer	Integrated Research	Programming	Project Planning	Salesperson	Subtotal
Industrial Design Company	1.16	0.37	0.21	0.4	0.32	2.46
Visual Communication Design Company	0.95	0.26	0.09	0.31	0.41	2.02
Fashion Design Company	0.43	0	0.14	0.43	0.14	1.14
Design Integration Company	1.57	0.62	0.38	0.73	0.3	3.6
Design Service Industry	1.11	0.35	0.18	0.42	0.36	2.42

Unit: Person /No. of Enterprises.

Data Source: “Talent Supply and Demand Questionnaire Survey for Design Industry” implemented by TDC in 2011.

2. Supply of Design Talents to Job Market

In 2011, there're 5,975 graduates, and 5,607 of these professional talents accessed the job market at the same year. Among those who accessed the design industry, 37.19% of them from design related departments, 39.61% from the visual communication design related departments, 17.80% from the integrated design related departments, 3.77% from the applied arts related departments and 1.62% from the design art related department. Most design professional talents currently accessed the job market have a bachelor degree with accounting for 86.28%; and the number of female is more than male with accounting for 63.60%. However, not all graduates of the design department served in the design industry, according to the statistical data from Taiwan Integrated Postsecondary Education Database, only 9.99% of design department's graduates who may serve in the design industry.

The industrial accession rate of individual talent conditions are different, as for related departments, the product design related department is the main supplier for industries with an accession rate of 14.88%; in addition, in terms of the education background, employees with a bachelor degree will have a higher industrial accession

rate of 10.45%; and as for gender, male employees will have a higher rate of serving in the design industry than female employees with an accession rate of 12.72%.

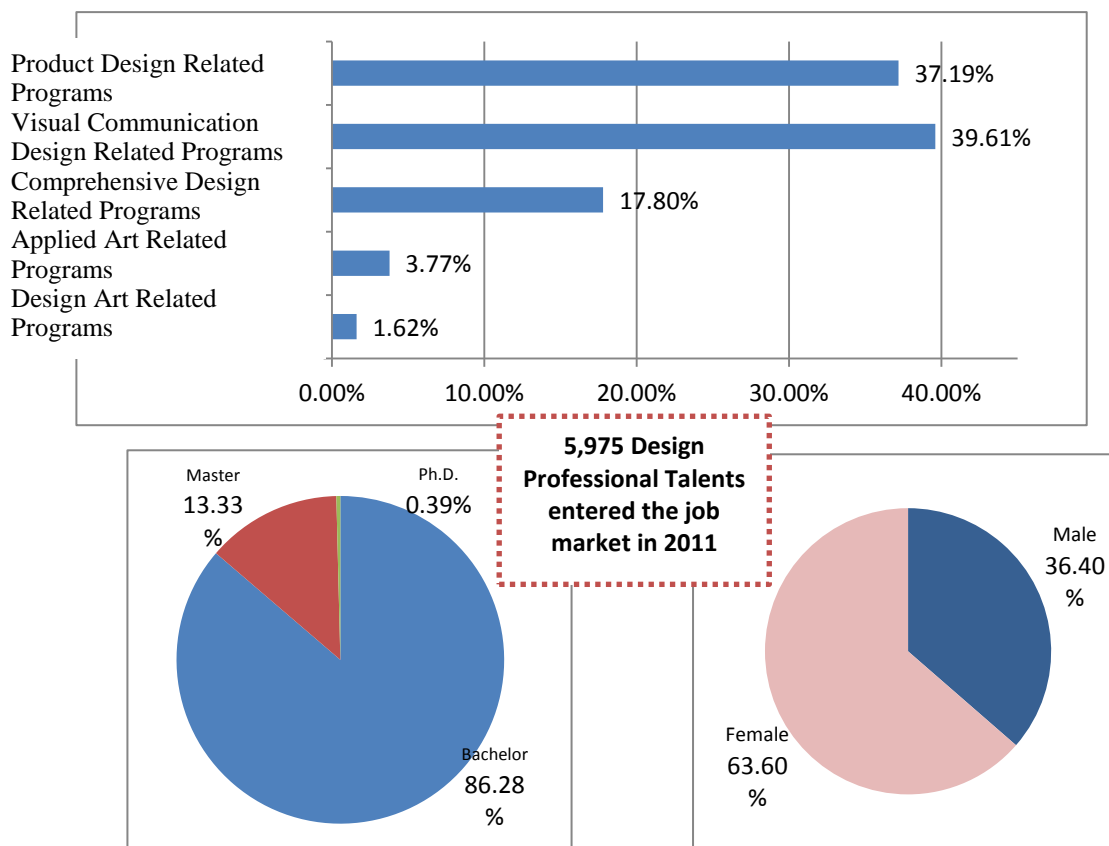


Figure 2: Analysis of Supply Conditions for Professional Talent

Data Source: Taiwan Integrated Postsecondary Education Database.

In next three years, Taiwan's design talents and design service industry would most likely have remained in a supply-demand equilibrium status. Also, in 2012 and 2013, the supply status is sufficient to support enterprises' demand for talents even the industrial business cycle is optimistic. Nonetheless, the current design industry is in the phase of fission and the start-up activities of design company also increase; thus, the significant improvement in the number of enterprises has also driven and increased the demand for talents, and the number of talents is estimated to be slightly insufficient until 2014. Most design enterprises will have the difficulty in recruiting and using talents, they pointed out that the most critical issue of supply and demand for the industrial talents is still in the difference between the production and education. More than 50% design companies responded a positive reply to the talent application, and the main problem is "lack of practical experience"; on the other hand, companies will doubt about the employment attitude of current job seekers. As for the design industry, it is comparatively difficult to determine that whether a design professional talent has related competitiveness. They are not only expecting those job seekers to have practical design experience, but also emphasize on job seekers' performance of

personality. Such “soft” employing standard will make a great improvement in recognizing talents’ ability. In addition, another issue deserved to be mentioned is that common design companies will consider that the number of competent job seekers is few who met the professional technique, and the main reason is that the small-sized design companies with low popularity cannot attract a great deal of job seekers. Under the condition of information asymmetry, the match-up between the design companies and job seekers will be more restricted.

IV. Promotion and Counseling Pattern in Design Industry

To integrate TDC’s investigation on the current status of the design industries and talents, it can discover that Taiwan’s scale of the design industry has gradually displayed a matured and stable trend. As for the industries’ demand for the design talents, and the talent supply from design departments, and currently display the trend of the supply-demand equilibrium status. To summarize these foregoing conditions, as being a national design center in Taiwan, TDC has the planning outlook of design industry and the task of design industry policy, needs to become the platform between the design companies and talents, and continuously upgrade the competitiveness of Taiwan’s design industry. Currently, the implemented promoting patterns are shown as follows:

1. Promotion and Counseling Procedures

As being a national design center, the purpose of TDC’s establishment is to use design to assist industries in creating new values, integrating the advanced research of TDC, the interdisciplinary counseling and marketing promotion, and use the streamline resources to link with the counseling cases to introduce the industrial trend and design the creative research capability. Counsel Taiwan’s enterprises to use design to transform into creative and servitization, promote the development in their brand value, and further to help assisting industrial marketing promoting and participating in international design competitions and exhibitions, as well as expand foreign and domestic markets to accelerate the transformation of Taiwan’s industrial upgrading and creative development.

The integration method is mainly conducted by TDC and external interdisciplinary experts to integrate the industrial, life aesthetic trend analysis and brainstorming, to plan and determine annual topic and focus on the theme to carry out the recruitment of related industries and design companies, and implement the in-depth diagnosis of companies for their operating qualification and provide companies’ orientation of annual product development. After carried the R&D and yielded products, we assist companies in participating major international competitions, such as the IF, Reddot, Good Design Award etc.; among which, the outstanding products and companies will be led by TDC to participate in important

international exhibitions, such as the Paris Furniture Exhibition, which made related companies to be international well-known brands and promote their products' popularity and make industries of related value supply chain to obtain more benefit.



Figure 3: Promotion and Counseling Procedures of Taiwan's Design Industry

2. Successful Cases

During the past 9 years, TDC adopted the foregoing streamline pattern to assist companies and obtained outstanding achievement, here listed two successful cases as follows:

(1) PROAD Identity

TDC integrated Taiwan's design company and the design resources of Japan Industrial Design Promotion Organization (JIDPO) to deeply cultivate the talents of design industry, counsel on the development of creative merchandise and introduce the new trend of design management, which is a total solution covering the complete procedure management and cultivation and channels in place. Started with the initial counseling and diagnosis of the design company, led them to participate in Focus Group held in Japan, and then assisted the design company in discussing the international design concept after returned to Taiwan. In addition, TDC provided its color and material resources to this design company for carrying out the conceptual and creative thinking, and then after produced the finished products, TDC led the design company to Japan for further business negotiation, and successfully made their products enter Japan's distribution market, as well as participated in Japan Gift Exhibition. This achievement made this Taiwan's design company no longer a company of product design, but transformed into a "brand tactic design oriented" design company, which can integrate international strategic design partners, extend professional team, strengthen competitiveness, and provide the internationally competitive brand image and value force for their clients.



Figure 4. PROAD Identity's "Bai Ju Yue" Porcelain Tableware Series

Photo Source: Taiwan Design Center

(2) National Palace Museum and ALESSI

After extracted the essence of cultural design from TDC's studies, TDC promoted the interdisciplinary cooperation between National Palace Museum (a famous Taiwanese culture organization) and ALESSI (a well-known international design brand), which had successfully activated the culture collection resources to R&D and design related merchandise with deriving about NT\$ 500 million output benefit.



Figure 5. Co-developed Cultural-Creative Merchandise by National Palace Museum and ALESSI

Photo Source: Taiwan Design Center

V. Conclusion and Outlook

Most well-known international companies and manufacturers have adopted design as the most important marketing tool for their products. Taiwanese industries' economic formation of transforming from OEM into OBM is more likely needed to use design while facing the competition with international market. However, domestic companies are mostly small- and medium-sized enterprises, and commonly lack for the design R&D talents and investment, as well as the OEM formation only emphasizes the improvement in manufacturing technique rather than product design which is also a key factor. Currently, the design personnel are critically lacked for the management of design planning, execution of design project, transformation of design creative concept, market sense and marketing ability. Moreover, the biggest difficulty is that the public's appreciation ability and design recognition of design aesthetic has not yet been popularized, and they don't show enough respect to the intellectual property (IP) right; in addition, the government has not yet conducted the legislation of design industry's IP right, which caused the creative design industry not yet obtained the respect they deserved.

Since 1990s, European countries, U.S. and Japan have established many research institutes where their goal and target are cultivating professional designers.

Specifically speaking, these education contents of cultivating design professionals are only the implementation of deepened professional education, but also the cultivate education of teaching students to use thinking as the core, how to integrate business with technology, and then to be the talents who can make use of design to solve problems and create new business pattern as well. The education idea of this new concept has become a critical issue that needs to be considered in implementing the cultivation of design talents while facing the challenge to the new era in Taiwan. However, the design industry's talents are lack of the experiences in business management and interdisciplinary integration. Particularly, these domestic design talents cultivated from the current education system who might be the "all-round personnel", rather than the "specialists", and furthermore most teaching units have the identical education patterns, lack of the global vision of international design, poor interschool exchanges, and difference in connecting the design theory with the industrial practice. In terms of the overall supply chain for the design talents, since many talents cultivated every year who have not met the demand for industrial requirement, thus it caused the phenomenon of excess supply; in another word, the talent cultivation didn't consider about the supply-demand relationship in the manpower market, then led to the difference between the education system cultivated talents and the demand for industries, and difficult to effectively improve the overall levels for design talents.

Foregoing investigation results of industry and talent shows that employees' salary didn't fluctuate even under the impact of economic climates, the overall turnover however is declined. Therefore, design is unable to become one of the key considerations for enterprise's operation during the economic depression. As a result, the number of the design service companies tends to less and less, so as the employment opportunities. Also, when these emerging design talents failed to keep up with the current macro environment, many design companies would rather suspend the new employment to reduce their operating cost, which consequently caused existing design talents to have more workload and longer work hours then.

In conclusion, as for the design promotion, the most important issue is that design has not yet been a core strategy for Taiwan's industries. The demand for design is often came from the deepened value chain activities that driven by enterprises' expansion; in addition, under the pressure of market competition and the influence on the trend of differential development, enterprises' internal design patterns must to match up with other value chains; therefore, enterprise are unable to outsource their design activities. Currently, enterprises' internal design talents showed the phenomenon with a high turnover of staff, difficult cultivation of experience and insufficient interdepartmental communication. For Taiwan's domestic design talents,

they are lack of opportunities and experiences to get on the international stage, and understand the trend of market design, so that can easily occurring the product similarity in their design.

In the future, if it hopes to obtain more perspective and international outlook when promoting the development of Taiwan's design industry, then it may follow the policy: "Manufacturing Servitization, Service Industries' Technologization and Internationalization, Traditional Industries' Characterization" promulgated by the Ministry of Economic Affairs (R.O.C.). Especially for the characterization of traditional industries, the policy encourages domestic traditional industries to continuously engage in the design related activities, and establish their own independent design sector, in order to strengthen domestic design industry's emphasis on design. Furthermore, the highly innovative design activities, such as the function and service design, will be included in the incentive range of attracting international enterprises to build the design R&D center in Taiwan; in particular, TDC will strive for including those talents of highly innovative design fields into the current recruitment system of foreign talents in the Council for Economic Planning and Development. Manufacturing and traditional industries shall integrate with their midstream and downstream service function and transform from the hardware manufacturing to the service industry that creates added value by providing the intellectual property service, the highly added value service and the well perceptive merchandise.

Currently, TDC continues to introduce the design thinking into the front end of enterprises' supply chain where toward the direction of continuous design promotion. Certainly, it is unable to strengthen the public's emphasis on design, and cultivate enterprises to have the concept of aesthetic economy in one step; as a result, they will be TDC's goals of continuous striving and cultivating the design promotion in the future.