

From Dechnology to Humart – A Case Study of Taiwan Design Development

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Abstract. Taiwan economic development is a fusion of Dechnology (Design-Technology) and Humart (Humanity-Art) which could be represented as a smile curve, from OEM (Original Equipment Manufacture), ODM (Original Design Manufacture), to OBM (Original Brand Manufacture). The three stages also reflect the tendency of Taiwan design development, from “use” to “user”, from “function” to “feeling”, and from “hi-tech” to “hi-touch”. Based on the Taiwan experience, this paper is intended to study the relationship between Dechnology and Humart which were merged into design thinking to explore Taiwan design development. Hence, the purpose of this paper is to provide designers, companies, and organizations with an idea for how to direct their efforts to meet the requirements of a new proposed design strategy by applying design thinking. Results of this study are also intended to illustrate the inter-woven experience of local design and global market in Taiwan’s economy, industry and design development as well to provide a framework for looking at Taiwan’s cross-cultural design development.

Keywords: Taiwan design development · Localization · Globalization · Glocalization · Design strategy · Cross-cultural

1 Introduction

With increasing global competition, connections between local culture and global market have become increasingly close. Recently, the increasing emphasis on localized cultural development in Taiwan demonstrates an ambition to promote Taiwan design in the global market. As the Taiwan design hub, the Taiwan Design Center (TDC, <http://www.tdc.org.tw/>) should take the opportunity to propose a “Design Thinking” approach for Taiwan to formulate the global design strategy for the future. Taiwan economic development is a fusion of Dechnology (Design-Technology) and Humart (Humanity-Art): from OEM (Original Equipment Manufacture) to ODM (Original Design Manufacture) to OBM (Original Brand Manufacture). These three stages of OEM, ODM and OBM also reflect the tendency of Taiwan design development as moving from “use” to “user”, from “function” to “feeling”, and from “hi-tech” to

“hi-touch”: a process of design evolution showing an adaptive design in Taiwan design development (Lin, 2012).

Furthermore, the factors affecting the concept of marketing in Taiwan design development include: (1) from global market to local design, (2) from globalization to localization to glocalization (global-localization), and (3) from business model to life style. There are three dimensions identified which influenced Taiwan’s cultural and creative industry, namely: (1) from digital archive to E-business, (2) from user-centered to user experience, and (3) from content to context. There are four factors affecting manufacture: (1) from quality to qualia which is a term that is used to denote the more subjective properties of our own personal existences which refers to what it is like to have an experience (Lin, 2011), (2) from hardware to software, (3) from market share to customer share, and (4) from value-added to core value respectively (Chen et al., 2014; Chen et al., 2013; Lin & Chen, 2012).

Based on the Taiwan experience, the concept of Dechnology and Humart was identified to investigate the Taiwan design development (Hsu et al., 2014; Hsu et al., 2013; Lin, 2012). This study also explores other implications through the Dechnology and Humart perspectives for design strategy. The study results attempt to provide an interface for looking back at how Taiwan design development crosses over Dechnology and Humart as well as illustrating the interwoven experience of local design and global market in Taiwan’s economy, industry and design development. This study then proposes an approach for establishing glocalization (global-local) design strategy for Taiwan design development with an idea for how to direct these efforts in design fields (Yeh et al., 2014; Yen et al., 2014; Lin, 2009, Lin 2007).

2 Adaptive Design in Taiwan Design Development

Taiwan’s companies have seen a recent shift from technological innovation to cultural product design based on discovering new opportunities in the global marketplace. Companies are more focused on adapting new technologies and combining them in ways that create new experiences and value for customers. With the process of Taiwan design development, most companies gradually realized that the keys to product innovation are not only aspects of market and technology but also local design. The evolution of Taiwan design development is a process of adaptive design which is a fusion of Dechnology and Humart. Thus, Taiwan’s economic development was identified as progressing from OEM to ODM to OBM and represented as a smile curve (Hsu et al., 2014; Hsu et al., 2013; Lin, 2012) as shown in Fig. 1.

Before 1980, OEM vendors in Taiwan reduced costs to produce “cheap and fine” products to be successful in the global market. With the OEM style of having “cost” but without a concept of “price” in mind, or just by knowing “cost down” but not knowing “value up”, these vendors created Taiwan’s economic miracle by earning a low profit from manufacturing. Those dependent upon hard-working patterns from the OEM pattern became obstacles in developing their own designs. These vendors were extremely busy producing products to meet manufacturing deadlines; there was no time to develop design capabilities so that this situation could not nurture design talents (Hsu et al., 2014; Hsu et al., 2013; Lin, 2012).

After 1980, Taiwan enterprises began to develop ODM patterns to extend their advantages in OEM manufacturing. Taiwan’s government promoted a series of policies to stimulate the nation’s economic growth including the “Production Automation Skill Guidance Plan”, and the “Assisting Domestic Traditional Industrial Skill Plan” (IDB, 2012). These plans were to guide vendors to make production improvements, to lower costs and to increase competition. Starting from 1989, the industry Bureau pushed the “Plan for Total Upgrading of Industrial Design Capability” over three consecutive five-year plans. The scheme established working models by experienced design scholars and students from universities for the purpose of working on design. The design students worked with the enterprises on specific projects to set up a working pattern of industrial design based on enterprises’ real needs. Especially starting from 1989, adapting the local marketing concept of “One Town One Product (OTOP)” had started to integrate local culture with innovations and to explore the development of distinctive local industry (Rana, 2008; Scott, 2004). All those started from localization as the longitude and local feature as the latitude not only to promote more people and more investment but also to draw new business opportunity (Huang, Shyu, & Tzeng, 2007).

Recently, product design in Taiwan has stepped into the OBM era. In addition, cultural and creative industries have already been incorporated into the “National Development Grand Plan”, demonstrating the government’s eagerness to transform Taiwan’s economic development by “Branding Taiwan” using “Taiwan Design” based on Taiwanese culture (MOEA, 2012). For example, in 2005 the National Palace Museum (NPM) in Taiwan made an agreement with Aleesi in Italy to use The Chin Family series as the basis for a joint project - “A Third Culture: East meets West” - that is the essence of the NPM’s “Old is New” campaign. Through the globalization strategy the NPM and Aleesi, while bridging Taipei and Milan, have cultivated this modern culture; that is “from localization to globalization”. (Hsu et al., 2014; Hsu et al., 2013).

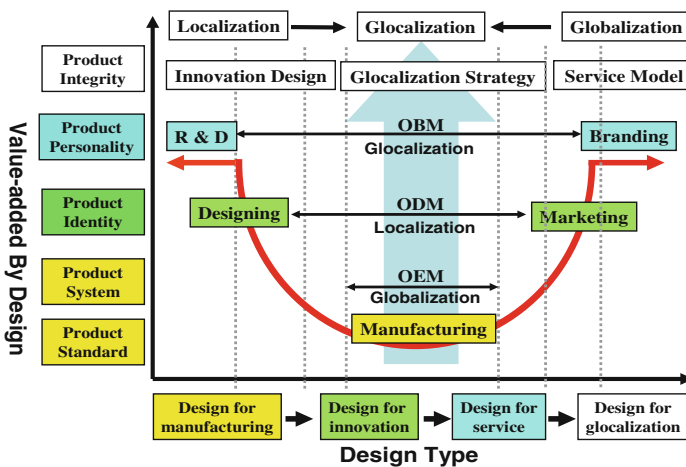


Fig. 1. Taiwan’s economy and design development

However, we now live in a small world with a large global market. While the market heads toward “globalization”, design tends toward “localization”. So we must “think globally” for the market, but “act locally” for design. While the cultural product is under tough competitive pressure from the developing global market, it seems that local design should be focused on the global market to adapt innovation to product design.

3 From Globalization to Glocalization

One can take Taiwan’s economic development from OEM to ODM to OBM as shown in Fig. 1 as an example. In the OEM phase, Taiwan’s manufacturers reduced costs to produce “cheap and fine” products to be successful in the global manufacturing industry which is typical “Globalization”. After 1980, Taiwan enterprises began to extend their advantages in OEM manufacturing and drew on local culture to develop ODM patterns which focused on designing local features into modern products which is typical “Localization”. NPM’s “Old is New” project is a typical example showing the process from “Globalization” to “Localization”. Recently, Taiwan’s economic development is to be furthered by “Branding Taiwan” using “Taiwan Design” based on Taiwanese culture (Hsu et al., 2014; Hsu et al., 2013; Lin, 2012). Obviously, product design in Taiwan has stepped into the OBM era which integrates “globalization” and “localization” into “glocalization”. The change of Taiwan economy development from globalization to glocalization is also shown Fig. 1.

Glocalization blends global(ization) and local(ization). The process of glocalization is used to describe a product or service that is designed to be distributed globally but also attractive and accommodated locally (Boztepe, 2007a). For a long-term view of globalization, local culture is a consequence of globalization. Local cultures cannot be isolated or unconnected from the global processes (Bell & Jayne, 2003). Designing local features into a product appears to be more and more important in the global market where products are losing their identity because of the similarity in their function and form. Cultural features then are considered to be a unique character to embed into a product both for the enhancement of product identity in the global market and for the fulfillment of the individual consumer’s experiences (Boztepe, 2007b; Lee, 2011; Leong & Clark, 2003; Lin, 2007). The increasing emphasis on localized cultural development in Taiwan demonstrates an ambition to promote the Taiwanese style in the global market. Thus, designing “local culture” into modern products will be a design trend in the global market. Design strategy is considered to be one of the pivotal components in cultural and creative design industries and will have a significant impact on consumer perception of innovation.

After reviewing previous studies (Hsu et al., 2014; Hsu et al., 2013; Lin, 2012; Moalosi et al. 2010), it is clear that local culture is the force pushing cultural and creative industries development forward. Based on the Taiwan experience, Hsu et al. (2013) studied factors affecting the glocal design strategy and focused on how to extract cultural features from the local culture and then transfer them to designing the innovate product. Based on the studies, the main factors affecting Taiwan design development could be identified as: Globalization, Localization and Glocalzilation. These three dimensions provide an index for looking at Taiwan design development crossing over cultures as

well as illustrating the interwoven experience of local design and the global market in the cultural creativity industry. The three factors also reflect the development of Taiwan design from “Function” to “Feeling” (OEM, globalization), from “Use” to “User” (ODM, localization) and from “Hi-Tech” to “Hi-Touch” (OBM, glocalization).

4 Taiwan Design Development

In Fig. 1, in the OEM era, the “function” of the product will come first when designing a product. Then in the ODM era, what the “use” should be in the “function” will come next. Thus, the function focuses on the specification for the manufacturer, and the use concerns usability for the users. Finally, the designer will seek to produce a “Hi-Tech” product. In the OBM era, user-centered plays an important role in the product design. Who the users are always come first while designing a product. Then, how to design “Feeling” into products becomes an important issue. Finally, designers will consider “Hi-Touch” beyond “Hi-Tech”.

4.1 From “Function” to “Feeling”

In the early 20th century when users thought about “design”, “form follows function” often came to mind. Today, technological progress has shifted dramatically and provides platforms for completely new forms of “design” and “service” delivery. Now, we communicate with our friends using a cell phone (design) or plan and buy a trip around the world using the internet (service).

From a design point of view, we could use five “Fs” to describe the change from designing “function” for the user’s need to servicing “feeling” for the user’s pleasure as shown in Fig. 2. These five F’s are: (1) 1930’s – design for “Function”, (2) 1950’s - design for “Friendly”, (3) 1970’s - design for “Fun”, (4) 1990’s - design for “Fancy”, and (5) 2001’s - design for “Feeling” (Hsu et al., 2014; Hsu et al., 2013; Lin, 2012). These five “Fs” also reflect the process of Taiwan design development.

Along with technological progress, we may examine the history of design of the last century. In the 1930’s, we find that “form follows function”; that is, the appropriate pleasing product form will follow if the product is appropriately designed for its function. This philosophy dominated design concept. In the 1950’s after World War II, the new discipline of human factors was introduced and the concept of “design for human use” applied to product design. The concept of “user friendly” became common sense with the popularity of the PC in the commercial market. In 1970’s, designing for “function” and “friendly” was not seen as sufficient so some designers tried designing “Fun” into the product. The application of post-modernism in the design field is a typical example of designing for fun. Then, in the 1990 s, designers tried designing “fancy” into their design based on advance technology such as concurrent engineering or RPT (Rapid Prototyping Technology) and the concept of product personality became a tool for differentiating the market. Finally, designing “Feeling” into products to present the emotional communication of user experiences became a design trend in the 21st century. As a result, “design for feeling” became the key factor for innovative

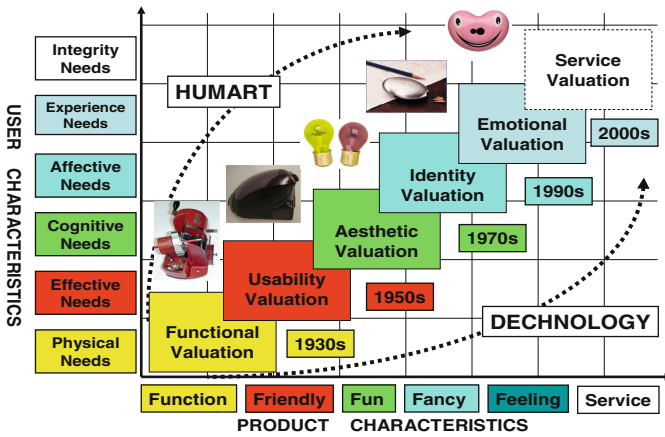


Fig. 2. Taiwan design development from “Function” to “Feeling”

products. In other words, the product must be endowed with an immediate attraction and this therefore renders user perception of innovative product form an important issue for “pleasure” (Gobe, 2011; Heskett 2009; Norman, 2004). In Fig. 2, we use a pencil sharpener as an example to demonstrate the change from “design for function” to “design for feeling”, respectively (Hsu et al., 2014; Hsu et al., 2013; Lin, 2012).

This change of design history with five “Fs” is similar to Taiwan’s design development from OEM to ODM to OBM. The users need not only the 5 Fs but also innovation service for their integrity needs. The only way to deal with this complexity is to keep user needs and desires central to any design strategy. Indeed, service innovation design is part of the solution to this challenge with its deep user involvement throughout the creative process and a keen view of the functional and emotional details that enable people to enjoy the services that are important in their lives. On the other hand, a powerful if risky strategy is to develop a product for a purpose that people do not originally realize that they “need”. Like the Polaroid camera, Xerox copy machine, Apple computer, Walkman, etc., etc. Then the “need” must be created through promotion, advertising, adoption by status figures, etc. which is a job for marketing and advertising experts. Of course, a strategy for new product development must include experts in all phases of creation, production, distribution, marketing and advertising. This still requires what designers must realize above in terms of making the product appealing to people, especially when there is competition to consider.

4.2 From Use to User

As mentioned previously, in the OEM era when designers thought about “design”, use of the product often came to mind first. Today, technological progress has shifted dramatically and provides platforms for completely new forms of “design (use)” and “service (user)” delivery. For example, we communicate with our friends using the iPhone (design) or Facebook using the internet (service) (Sangiorgi, 2011). In the

ODM era, the new discipline of human factors was introduced and the concept of “design for human use” applied to product design. The concept of “user friendly” became common sense with the popularity of the PC in the commercial market. Finally, designing “Feeling” into products to present the emotional communication of user experiences became a design trend in the OBM era. As a result, “design for feeling” became the key factor for innovative products. Figure 3 demonstrates the change from “use” to “user” in Taiwan economic development.

Based on the previous analysis, “from use to user” could describe the change of Taiwan design development from designing “function” for the user’s need to servicing “feeling” for the user’s pleasure. In other words, the product must be endowed with an immediate attraction and this therefore renders user perception of innovative product form an important issue for “pleasure” (Gobe 2010; Kreifeldt, Lin & Chuang, 2011; Heskett 2008; Norman, 2004).

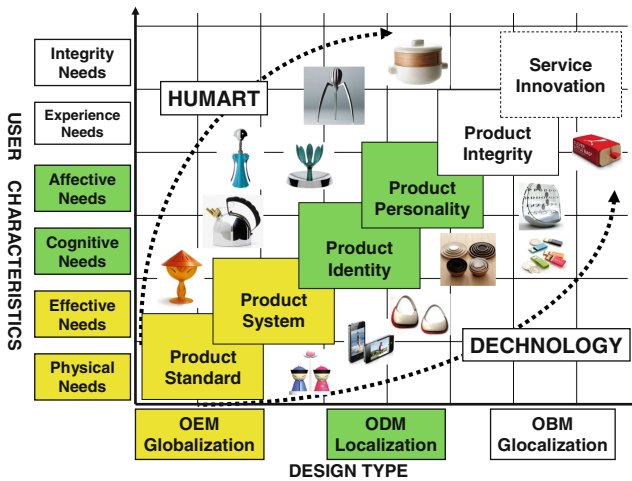


Fig. 3. Taiwan design development from “Use” to “User”

In order to reach the purpose of branding Taiwan, some changes need to be made in Taiwan’s industry structure. If we can mix cultural concepts with diverse service innovation design to make art livable, then we can create a new design strategy of cultural and creative design industries and become culturally industrialized to highlight Taiwan’s international image. This design strategy also verifies the change of Taiwan design development from globalization/localization to glocalization.

4.3 From “Hi-Tech” to “Hi-Touch” – Cultural Branding

In the past, Taiwan developed information technology to produce “Hi-Tech” 3Cs products as “Computer”, “Communication”, and “Consumer” electronic products and many related accessories. As mentioned previously, Taiwan’s economic miracle was

promoted by small enterprises through the hardworking spirit and cheap labor of the people. But all these advantages have been seized by China in recent years. If Taiwan still wants to play a role in the global economy, it should establish a Taiwanese cultural brand. Besides its skill leverage, it has to cover both ODM and OBM, which is the purpose of promoting cultural and creative industries from the service innovation design point of view. Therefore, the required change in Taiwan’s design industry structure is to: (1) maintain its cost down advantage; (2) reinforce design value up, and; (3) seek service innovation design in cultural and creative design industries (Segall, 2012; Chang, Lin, Wea & Sheu, 2002).

Cultural and creative design industries are the “4Cs” industries: “Cultural”, “Collective”, “Cheerful” and “Creative”. The 4Cs will be a design evaluation key point of “Hi-Touch” products as shown in Fig. 4. Many countries that are highly prominent in design popularity are promoting service as design as part of cultural and creative design industries. Taking England as an example, service design has been the second highest output value of their creativity industry (Roberta & Marco, 2010; Sangiorgi, 2011; Spohrer and Maglio 2008). The potential market is quite large. In the knowledge economy era, the connections between culture and industry have been increasingly close.

In the global market - local design era, connections among local culture, global market and innovative products in design strategy have become increasingly close. For design strategy, cultural value-adding creates the core of product value. It’s the same for culture; design strategy is the motivation for pushing the development of creative industries forward. Recently, creative industries have been emerging in the design field and providing a key trend in design strategy (Desmet & Hekkert, 2007; Kim & Mauborgne, 2005; Lee, 2011; Redstrom 2006). Obviously, we need a better understanding of cultural aspects in design strategy; not only for the global market but also for local design.

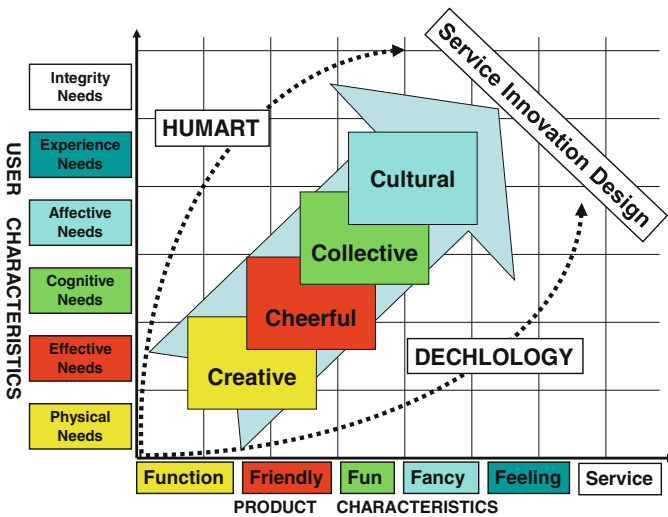


Fig. 4. Taiwan design development from “Hi-Tech” to “Hi-Touch”

5 A Conceptual Framework for the Glocal Design Strategy

Based on Taiwan design development and Solomon’s study, the following framework is proposed for defining, classifying, assessing, and modeling the glocal design strategy for turning “local features” to “global market” as shown in Fig. 5 (Solomon et al., 2002; Solomon, 2003).

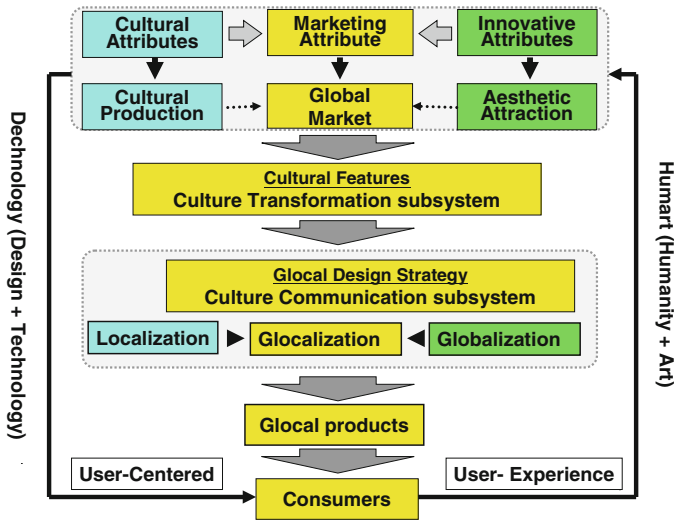


Fig. 5. A conceptual framework for the glocal design strategy

The conceptual framework which integrates the local features and innovative products into the glocal design strategy comprises the attribute subsystem, the cultural transformation subsystem, the culture communication subsystem, and lastly, consumers. The attribute subsystem is responsible for generating and filtering new ideas. The cultural transformation subsystem is responsible for selecting new ideas based on design strategy, making them tangible, mass producing these ideas, and then managing their distribution. The culture communications subsystem is responsible for giving meaning to the new “glocal products” and providing them with symbolic sets of attributes that are communicated to consumers (Teng 2000; Zafarmand, 2007).

6 Summary

Based on the previous studies and Taiwan experience, this paper studied the relationships between Dechnology and Humarts which were merged into design thinking to explore Taiwan design development. Firstly, this paper explored Taiwan design development and identified the three stages of OEM, ODM and OBM for illustrating how to transform “local culture” into “global market” through a process of design

evolution showing an “Adaptive Design” in Taiwan design development. Then, a conceptual frame work was used to study the tendency of Taiwan design development, from “use” to “user”, from “function” to “feeling”, and from “hi-tech” to “hi-touch”.

This paper also analyzed the factors affecting local design and global market to understand Taiwan design development. A conceptual framework was established to provide companies, organizations, and designers with a valuable reference for using design thinking to build a glocal design strategy. There are some tendencies for subjective interpretation in the foregoing context, so it is expected that more specific and rigid methodology will be conducted to verify these results in the future, especially, from Dechnology to Humart. Furthermore, while cross-cultural factors become important issues for product design in the global economy, the intersection of service innovation design and culture becomes a key issue making both local design and the global market worthy of further in-depth study.

Acknowledgements. The authors gratefully acknowledge the support for this research provided by the Ministry of Science and Technology under Grant No. MOSY-103-2410-H-144-003 and MOST-103-2221-E-144-001.

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