

Business Model Innovation between Tangible and Intangible Products

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Abstract

Highly valued in technology enhancement or product design, the business models of tangible and intangible products, however, are less concerned by academic researchers and entrepreneurial practices. The definition, characteristics and structure of these business models are still ambiguous. This article synthesizes the literature and draws conclusions. Combined with strategic design thinking, two core models are proposed for the two product types. These two business models, BMTP and BMIP, are illustrated by using four representative design companies as cases analysis. Implementation underpinnings of entrepreneurship education in Design Disciplines are explored in the suggestion part.

Keywords:

business model innovation, tangible and intangible products, entrepreneurship, strategy

1. Introduction

A great increase on entrepreneurship in the field of technology turned up globally in the past thirty years, especially about the huge economic market and business trading platform to everyone. However, entrepreneurship and its education of tangible and intangible products are still in an unsystematic industrial chain, not merely for most designers usually concentrate on their products design, but also for they are totally unfamiliar with the knowledge of business as well as the entrepreneurship education in Design disciplines is in its infancy.

As we know, the term “design” covers a wide range of disciplines, some of the common ones are architecture, engineering, exhibition, fashion, visual communications, interiors, multimedia, packaging. Product design can not live without design practice. Design practice is now being applied to a broadening range of activity, moving from the product and graphic areas to the design of digital interactions, the design of service, and even to business strategy and social policy (Brown, 2009; Dunne & Martin, 2006; Liedtka, King, & Bennett, 2013; Moggridge, 2007). The closest link between business practice and product design is strategic design thinking. Strategic design thinking is currently a method in fashion that often be used in business process. Actually, every business model needs to be designed and a good application of strategic design thinking. For example, how to group the customers by their needs, or how to build the brand in the future. And the most important thing is that all of these disciplines have the most intimacy with the process of entrepreneurship.

From this aspect, Simon (1996) asserted that professional schools, including business, engineering, law, medicine, and architecture, are all primarily concerned with the process of design-devising courses of action aimed at changing existing situations into preferred ones. In the same year, Hynes (1996) proposed that entrepreneurship education is the processes that aim to enable an individual to assimilate and develop

knowledge, skills, values and an understanding that allows a broader range of problems to be addressed. For my part, another purpose of entrepreneurship and its education is to help people have the ability to design sustainable business models once they have good business ideas.

In order to make good use of these advantages to entrepreneurs in product design, this article focuses on the comparative study to identify two innovative business models special for the tangible and intangible products.

No discipline is like Design that suits for the combination with entrepreneurship, both of them advocate and execute design thinking in the process. This article mainly emphasizes the comparison on business models of tangible and intangible products, which towards entrepreneurship and its education perspective. Therefore, the research question as well as the research value is: what are the differences between these two business models and what are the suggestions for the entrepreneurship education in Design disciplines and also in Art Universities?

2. Literature Review

2.1 The significance role of business model innovation played in entrepreneurship

How much of innovation can be regarded as inspiration? If it is mainly the former, then the function of management's role is limited: hire the right people, and get out of their way. If it is largely the latter, management must play a more vigorous role: establish the right roles and processes, set clear goals and relevant measures, and review progress at every step (Peter F. Drucker, 2002). A systematic process, based on five innovation patterns, can generate ideas that are both ingenious and viable. They are subtraction, multiplication, division, task unification and attribute dependency change. And patterns are often used in conjunction with one another (Jacob Goldenberg, Roni Horowitz, Amnon Levaz, & David Mazursky, 2003). And with the increasing development of globalization and technological science, business model has been playing the significant role to start new business.

Business model, which was identified into "efficiency-centered" and "novelty-centered" design themes, can create value by enhancing the customers' willingness to pay or by decreasing suppliers' and partners' opportunity costs (Christoph Zott & Raphael Amit, 2007). Not only that, business model is also a crucial task and a source of innovation for entrepreneurs, and the core business decision and trading principle to earn profits, which includes market segments, value propositions, sources of revenue, channels of distribution and consumer benefits. Therefore, business model innovation plays an important role to fundamentally change the way of doing business to go beyond prevalent sustainability approaches that focus on efficiency, productivity and 'greening' the supply chain (Bakker et al., 2014), and that means new ways of providing services and new standards of operating.

2.2 The key role of strategic design thinking played in entrepreneurship

When the issue has been formulated, you have to obtain an overall picture of the current situation and history, that is, the underlying conditions. However, history and driving forces are often missed in strategic analyses (Lindgren, M. & Bandhold, H., 2009). Among the rules, such as boundary rule, priority rule, timing rule, the most important one entrepreneurs should obey is priority rule. Product's gross margin is the key for profits, and allocation is based on the gross margin, which can help entrepreneurs gain the marketing opportunities. There are three approaches to strategic design thinking (Table 1), which include position, resources and rules in the process of strategic design thinking.

Table 1. Three approaches to strategic design thinking

	<i>Position</i>	<i>Resources</i>	<i>Rules</i>
Principle	Customer-centered; Future-oriented		
Questions	Where	What	How
Steps	Marketing segment	Establish by themselves or by others	Keep, pause and finish by analysis
Strengths	Clear value proposition	Variety and effectiveness	Simple rules but always obey
Risks	Not easy to restart	Should update the attraction in time	Unpredictable factors
Results	Profitable	Inexhaustible	Become a criterion in this industry

Strategic design thinking is a customer-centered, repeated process to deal with problems, which requires entrepreneurs to have a high-level insight into future trends. Marketers should play the dual roles of product manager and product designer (Steven Chen, Ray Benedicttus, Yuna Kim, & Eric Shih, 2018), and an effective manager is "aware of the design process and how the various constraints interact with the process so that he or she can make successful decisions regarding these trade-offs" (Bloch, P. H., 1995), because design thinking is the "state of mind" (Venkatesh, Digerfeldt-Mansson, Brunel, & Chen, 2012), and an iterative, exploratory process involving visualizing, experimenting, creating, and prototyping of models, and gathering feedback (Roy Glen, Christy Suci, & Christopher Baughn, 2014).

The process of strategic design thinking is a method of understanding the relationship between technology and social change in order to increase the innovation and competition for the organization, which includes understanding the customers, re-framing the customer-driven way, forming future-oriented ideas, adopting approaches in product testing in marketing, and developing a prototype to the problem in the process. Tim Brown (2008), who introduced the value of design thinking and innovation to business people and designers, considered that design thinking is a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity.

2.3 Necessity to innovate business model with strategic design thinking

Entrepreneurship needs to be expanded across disciplines, especially in the field of product design, where innovative ideas originate. An entrepreneurial company was often likely to be built around a hole, which was identified in a product line by entrepreneurs who grasp firmly on this industry. Moreover, product managers must be able to understand the synergistic relationship between design, strategy, and the brand identity (Borja de Mozota, Brigitte, Nanako Kawauchi, Masaki Iwatani, & Shin'ya Nagasawa, 2010). Sustainable business model can bring sustainable funding, which needs a shared vision by all stakeholders of the desired outcomes under their expectation. And innovation is the specific function of entrepreneurship, and the very foundation of entrepreneurship is the practice of systematic innovations (Peter F. Drucker, 2002). Thus, sustainable business model innovation is an emerging research stream that attempts to strengthen companies' ability to pursue sustainable development by integrating sustainability objectives into business models, and thus concurrently achieving profit and a positive impact on society and/or the environment (Schaltegger et al., 2015; Stubbs & Cocklin, 2008; Tyl et al., 2016).

Besides that, Stubbs and Cocklin (2008) argued that sustainable organizations express their purpose, vision and mission in terms of social, environmental and economic outcomes. Asking designers to make an already developed idea is tactical, which may result in limited value creation; however, asking designers to create ideas is strategic, which can lead to dramatic new forms of value (Tim Brown, 2008). Therefore, customer-centered and future-oriented approach is necessary to be combined in the process of sustainable business model innovation. And win-win outcomes can be taken from their tangible or intangible products that associated with the markets only in this way.

2.4 Three processes and five stages of strategy development

There are five stages of a start-up development (Table 2), including Idea, Networks, Beginning, Growth, Running, Profitable, and Harvesting. During these stages, the revenue and cost drivers are more important than others in designing business model. Because of these two factors, sustainable business model should pay close attention to control the size of the cash flows at any given point in time. There are four revenue streams that underlie this kind of business model: single stream from one product by one designer; multiple streams from different products by one designer; multiple streams from one product by different designers; multiple streams from different products by different designers. Depending on the business model, the volume of the start-up changes case by case. Entrepreneurs should also make the decisions according to the revenue streams.

Table 2. The three processes and five stages of strategy

	<i>Pre strategy</i>	<i>Initial strategy</i>	<i>Strategy implementation</i>
Establishing aims	Aims of business	Aims of strategy	Aims of implementation
Finding a common ground	Who - partners	Who - competitors	Reactions & adjustment
Implementing	Consulting	Involving	Feedback from shareholders
Evaluating	Impacts	Impacts	Results
Cost drivers	Fixed or variable	Fixed or variable	Variable of non-recurring

3. Methodology

Case analysis, comparative study and deduction are the three main research methods. First of all, through the combination of literature review and the definition of two different types of products, using the concept of design thinking, two business models of BMTP and BMIP are formed. Then, four representative design companies are selected as cases for comparative analysis and pattern verification. Entrepreneurship in product design is not only a simply business education, but also a creation of inter-discipline subject or curriculum. Finally, this paper discusses the importance of these two business models in entrepreneurship teaching from the perspective of entrepreneurship and its education.

4. Results

4.1 Two innovative business models of entrepreneurship in tangible and intangible products

4.1.1 BMTP: Business Model for Tangible Products

Tangible products design are those physical items that can be perceived by the sense of touch . Examples of tangible products include buildings, vehicles, furniture, kitchen supplies, computers, clothes, accessories, posters, and other prints, etc. Many businesses also need to provide packaging for a tangible product to provide protection during its transportation from factories to retail locations, or from stores to customers. Packaging parts are also tangible product design and sometimes much more attractive than products themselves. As for the tangible products, the expenses for advertisement seem to be a great amount of sustainability. To be effective, an innovation has to be simple, and to be focused. Effective innovations start small things. In fact no one can foretell whether a given innovation will end up a big business or a modest achievement (Peter F. Drucker, 2002). Moreover, the expenses for maintaining customers and transaction platform, if trading online, are all critical to the innovation of business model.

As mentioned above, customer-centered and future-oriented are involved in strategic design thinking. Therefore, before design tangible products, the founder(s) and the designer(s) of the company should think these two factors first. Due to the design products can not be satisfied with all people, it is much better for entrepreneur(s) to identify their market segments, and then choose a niche market. Some customers, of course, will not fall into this segment and market after grouping the customers by their needs and problems. Nevertheless, this is just about focusing on the limited resources where might be have the greatest return. Using the method of conjoint analysis not only can analyze the data thoroughly, but also can define the value proposition. Here, the customer benefits refer to pricing that more than basic function. Sometimes, a high price could be charged for a quality product. According to the business cases, brands' collaboration seems much more significant than other channels of distribution. The premise of collaboration could enhance the brands' visibility, and the recognition of well-known brands through their communications would also increase the value of products. The figure of BMTP (Figure 1) shows the interaction. Actually, this is a kind of circle, and the designer(s) would update the ideas after the feedback from the customers and other stakeholders.

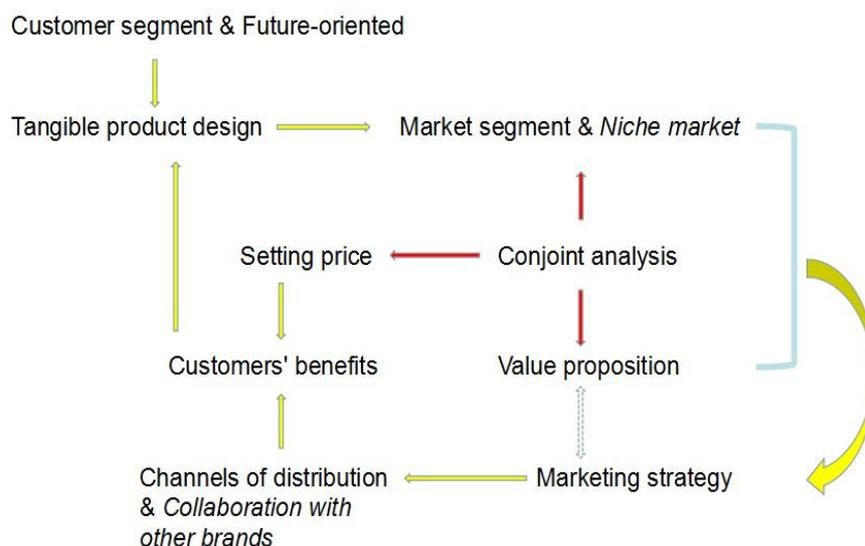


Figure 1. Business Model for Tangible Products (BMTP)

Step 1: Having a concept or product sample of tangible product design according to the customer segment & future-oriented.

Step 2: Using conjoint analysis to identify the value proposition, setting price, and market segment & niche market with tangible product design mentioned in step 1.

Step 3: Formulating the marketing strategy combined with the achievement mentioned in step 2, and comparing with the value proposition.

Step 4: Carrying out the marketing strategy to explore the channels of distribution and to expand the brand influence, in order to enlarge the customers' benefits and loyalty with adjusting the price.

Step 5: Determining the tangible product, and then restart the circle once or twice.

4.1.2 Supplement of BMTP

First of all, brand, internet, relationships, design and segment are suitable for every aspects of entrepreneurship, which could be abbreviated as the *BIRDS* and used in the core content in business model design.

Secondly, the founder(s) should clearly know his products' advantages and differentiation compared with other similar products, and the company had better focus on the niche market in the early stage in terms of

improving the function, appearance and promotion channel of the products. and the strategic design thinking of the products should be customer-centered and future-oriented.

Thirdly, design thinking, or more broadly creativity, is important skill sets for students' career enhancement (Dunne & Martin, 2006; Glen et al., 2014; McCorkle et al., 2007). The business challenge is applicable at various levels of education background. On the basis of literature review, the core elements of strategic design thinking of "customer-centered" and "future-oriented" are set out to provide ideas for the approaches of entrepreneurship in product design, which is the business model innovation.

Fourthly, the founder(s) and the staff members should make good preparation for a long-time efforts in business and innovation. And each step of business model innovation tries to hold its own irreplaceable function and potential ability.

4.1.3 BMIP: Business Model for Intangible Products

Intangible products design are those not in physical nature and unable to be touched. Digital media such as music & film, mobile apps or virtual goods used in virtual economies, and knowledge, education, software, information/ data, business service, risk prevention skills are all examples of intangible products. Besides that, added value is often regarded by consumers as an intangible product that distinguishes budget restaurants and hotels from luxury ones.

The definition of intangible products is not merely the ideas of design-thinking, the more important meaning is viable, profitable ideas that can be used in certain business environment. Compared with the tangible products, the investment size of intangible products is inestimable or limitless in the initial. Just like brainstorming, intangible products would turn up in a business plan, a PowerPoint making, a piece of picture, or even a conversation, but these kinds of products could also play important roles in entrepreneurship, customer segment, or value proposition.

For a start-up innovator, the main alternative to competing directly in the product market is through a "cooperation" strategy, which is composed of identifying and executing agreements with other firms, usually incumbents, who serve as conduits for commercializing technology to product market (Joshua S. Gans & Scott Stern, 2003). However, as design-thinking for intangible products, besides cooperation and commercialization strategies, strategic design should also become the key strategy. That's because transactions of these intangible products is totally different from tangible products. At the same time, entrepreneurs in Design industry must identify the invisible costs of appropriate tasks or programs. (Figure 2)

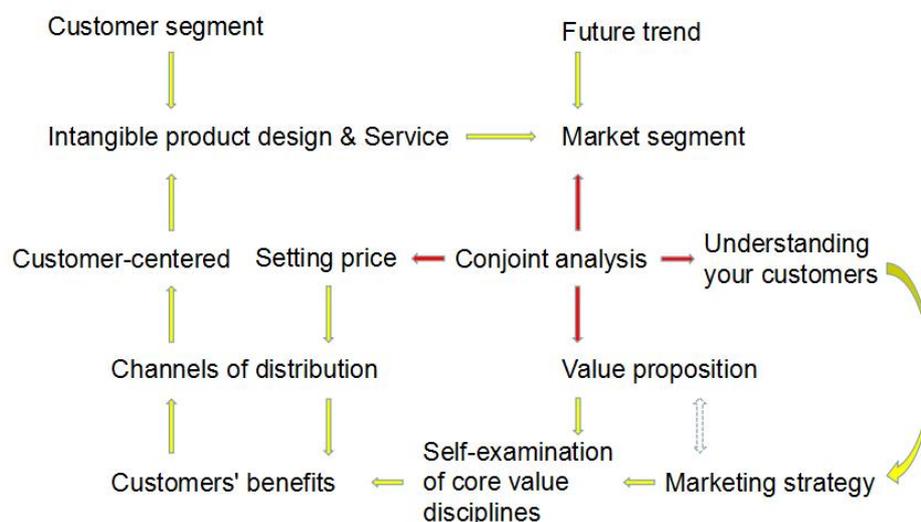


Figure 2. Business Model for Intangible Products (BMIP)

Step 1: Having a concept or product sample & service of intangible product design according to the customer segment, then confirming the market segment with the intangible product design with future trend at the same time.

Step 2: Using the conjoint analysis to identify the value proposition, setting price, market segment and understanding customers psychology & behavior.

Step 3: Formulating the marketing strategy combined with the achievement in step 2, and forming a small circle around with value proposition and self-examination of core value disciplines.

Step 4: Enlarging customers' benefits by self-examination of core value disciplines as well as channels of distribution.

Step 5: Keeping the principle of customer-centered ahead of determining the intangible product design, and follow the big circle again with new customer segment.

4.1.4 Supplement of BMIP

For one thing, entrepreneurs should check the concepts of intangible designs whether could be translated into profitable business ventures or not. Design-thinking reinforces the basis of advantage for start-ups by offering a strategic design of new innovation, which can bring sustainable business modelling complementary to the existing value proposition. Meanwhile, third-parties may be depended by the extent of the market for direct controlling.

Although most products can be classified as intangible in the perspective of what they promised but still cannot be experienced directly and completely before customers buy, designers should also do customer segment in advance. Only if designers understood their customers, the value proposition could be figured out on the benefits that customers really care. In addition, providing reassurance in the ways of specifying, advertising, and labeling. Meanwhile, the slimmer the market segment is identified as, the higher customer satisfaction is likely to be.

For the other thing, self-examination of designs' core value is a key stage between value proposition and customers' benefits. Usually, there are three core value disciplines, they are low price but good operation, product differentiation and the relationship between customers and companies. In the circle of BMIP, customer-centered should be focused again before the final decision of intangible product design or service. And channels of distribution had better turn to be variable according to the pricing and customers' benefits. Intangible designs can be easily transferred globally through the web site, especially for B2B customers and retailers. Generally speaking, the long-run benefits to an entrepreneur who is good at strategic design thinking can take advantage of the factors from the influence mutually on the basis of culture, politics, economics and marketing systems.

Beyond that, this article proposes three subtle but crucial elements of these two innovative business models. The first one is economic excludability, which means the start-up can make profits successfully from the knowledge and ideas of the innovation. The second one is environmental excludability, which means the start-up can make profits successfully influenced by its economic and political environment. The third one is social non-excludability, which means the start-up could not live without the interactions between market stakeholders.

4.2 Illustration of BMTP and BMIP using in four brands

There are various famous brands in the current market. *BALMUDA* is a Japanese designing and manufacturing company that produces small appliances and computer accessories. Its products have won international recognition for their designs, including *Red Dot* and *iF Product Design* awards. *Supreme* is an American skateboarding shop and clothing brand established in New York City in April 1994. The logo of this brand is the distinctive red box with "Supreme" in white Futura Heavy Oblique. *Dyson Ltd* is a British technology company established in the United Kingdom in 1991. It designs and manufactures household appliances, such as vacuum cleaners, hair dryers. The *Nippon Design Center* is to provide corporate and organizational clients with the highest quality management resources through design.

The reasons that using these four companies to illustrate these two innovative business model not only because of their representatives and marketing influence, but also for their unique business model with product design and design-thinking. To whom already knows them might also have some questions about them and their business model. Why is the concise design of products' appearance that created by *BALMUDA* so popular among customers? What are the business secrets about the products with the logo of "Supreme" become the global youth fashion brand nowadays but just designed for skaters in the beginning? How can *Dyson* manufacture non-domestic products when a private company is ready? How can *Nippon Design Center* make design much more attractive to customers? Therefore, let's do the cases analyses in order to answer these questions.

Analysis of these four brands have been conducted successively in the aspects of background & questions, founders&histories, business ideas' pursuing, and business strategies' developing. This article selects some related information from the official websites of *BALMUDA* (<https://www.BALMUDA.com/>), *Supreme* (<https://www.Supremenewyork.com/>), *Dyson* (<https://www.Dyson.com/>), and *Nippon Design Center* (<https://www.ndc.co.jp/en/>).

4.2.1 Every brand started its own business through market segment and self-examination of core value disciplines.

Don't expect successful inspiration could always be found from diversified sources; and it is also difficult to choose the initial one among them. Actually, the experience of prior work, education, and even just as an industrial consumer could all be used to explore entrepreneurial ideas. In addition, if you are passionate about what you are doing, you would have the opportunity to succeed in the future, which can be found in Table 3.

Each brand focus on one market in the beginning and has a definite targeting customers. Market segment and customer segment are both crucial to the entrepreneurial business for a new start-up, which can be decided by the method of conjoint analysis. Only having a detailed segment firstly, a start-up could decide the marketing

scale and scope in the process, and also invest accurately and recruitment are just in line with the areas the organization deals with.

Table 3. These four brands' first product and their segments of market and customers in the beginning

<i>Brand</i>	<i>The first product</i>	<i>Market segment</i>	<i>Customers segment</i>
<i>BALMUDA</i>	Floater	Computer peripherals	Laptop users
<i>Supreme</i>	Skate decks and Clothes with its distinctive box logo	Street culture	Skaters and street fashioners
<i>Dyson</i>	Cyclonic vacuum cleaner	Household appliance	Every family
<i>Nippon Design Center</i>	Toshiba corporate advertising	Advertising design	Various companies that need advertisement

4.2.2 Founder(s) have great entrepreneurial passion as well as design skills firstly, and then business skills, such as conjoint analysis, including value proposition, understanding customers and channels of distribution.

BALMUDA was founded in Japan by Gen Terao in 2003, a high-school dropout who pursued a music career for about ten years but quit from his musical career because in the end his rock band broke up before starting *BALMUDA* as a product design company. *Supreme* was founded in the United States by James Jebbia in 1994, an English businessman and fashion designer, who built a skateboard lifestyle empire and changed the way shoppers treat collections. James Jebbia moved to New York City from Crawley, West Sussex, the United Kingdom in 1983, and landed a job at Parachute, a minimalist skate shop and clothing store. His first retail venture Union NYC was opened in 1989, carrying an experimental mix of mostly English brands, and he teamed up with Shawn Stussy from 1991 to 1994. *Dyson* Ltd was founded in the United Kingdom by James Dyson in 1991, who was best known as the inventor of the Dual Cyclone bag-less vacuum cleaner, which works on the principle of cyclonic separation. Before this, *Dyson* helped design the Sea Truck in 1970 while studying at the *Royal College of Art* (RCA). His first original invention, the Ballbarrow, was a modified version of a wheelbarrow using a ball instead of a wheel. He then designed the *Wheelboat*, which could travel at speeds of 64 kilometers per hour on both land and water. The skills owned by these three brands' founders are collected in Table 4. We could find that even though the founder didn't have the producing, designing and marketing skills when they decided to entrepreneur, however, they should have the passion to do at first. And business skills could help the founder to manage the company better.

Table 4. The skills owned by these three brands' founders

<i>Brand's founder</i>	<i>Producing and designing skill</i>	<i>Marketing skill</i>
Gen Terao	Have passion to design product	Have passion to lead the market
James Jebbia		Have working experience in a skate shop and clothing store
James Dyson	Industrial design engineer and inventor; Studied furniture and interior design at RCA	

Nippon Design Center (NDC) has different history compared with these three brands above. NDC was founded in Japan by investment from eight companies (Asahi Breweries, Asahi Kasei, Nippon Steel, Toshiba, Toyota Motor, Nikon, NKK, Nomura Securities) in 1959, which is operated as the way of joint management. Mr. Hara Kenya, who received the 4th Yamana Award at the Japan Advertising Federation Awards, became president of NDC in 2014. Currently, the positions and human resources are much more complex but dedicate than its initial stage (Table 5).

Table 5: The operators of Nippon Design Center

<i>Name</i>	<i>Status</i>	<i>Responsibilities</i>
Hara Kenya	President	
Kawamata Tadahisa	Vice President	in charge of the Image Production Division
Ozeki Fujio	Managing director	in charge of the Production Division
Kubo Toru	Directors	in charge of the Onscreen Production Division
Kanasaka Yoshinobu		in charge of the Producer Division
Irobe Yoshiaki		in charge of the Production Research Division and General Manager of Production Research
Ichimaru Yoichiro		Former Executive Vice President and Representative Director, Toyota Motor Corporation
Adachi Naoki		Chairman, Toppan Printing Co., Ltd.
Okamoto Yasuyuki		Executive Officer, Nikon Corporation
Izumiya Naoki		Chairman, Asahi Group Holdings, Ltd.
Suzuki Inahiro		Auditor
Nagai Kazumasa	Senior Executive Adviser	

This table is made by the authors according to the website: <https://www.ndc.co.jp/en/about/company/>, 2019-01-23.

From what mentioned above, we can find that the working experience is closely related to the direction of entrepreneurship, and all of them have been working on one entrepreneurial field for a long time. According to the companies' strategic objectives, the composition of the core positions can be different. The number of staff can be more or less, but it must have its value.

4.2.3 Every brand should pursue its differentiation and make definitive marketing strategy as well as considering customers' benefits.

Most companies focus on matching and beating their rivals, and as a result their strategies tend to converge along the same basic dimensions of competition. Hence, creating new market space requires a different pattern of strategic thinking, such as looking systematically across the accepted boundaries that define how we compete. (W. Chan Kim & Renee A. Mauborgne, 1999)

Ken Terao found most household appliances were disappointing, for instance, fans pushed around hot air, toasters turned bread into bricks. Then Terao built his niche market on improving the most ordinary domestic goods. *BALMUDA* launched the *GreenFan* in 2010, a home air circulation fan that eliminates the strong air current. The idea of this product, which combines two different blade systems operating at different speeds, came from watching children linking arms and trying to run in a circle. Later, *BALMUDA* designed and distributed more small appliances, such as a toaster, a microwave oven, an electric kettle, and a rice cooker. The company has also developed a signature food product, *BALMUDA* The Curry, intended to be prepared with *BALMUDA* appliances.

Dyson designs and manufactures household appliances such as vacuum cleaners, air purifiers, hand dryers, bladeless fans, heaters and hair dryers. *Dyson's* breakthrough in the UK market came more than ten years after the initial idea, unlike most of its rivals, the *Dyson* vacuum did not require the continuing purchase of replacement bags. And the slogan "say goodbye to the bag" proved more attractive to the buying public than a previous emphasis on the suction efficiency that its technology delivers.

The mission of *Nippon Design Center* is to provide corporate and organizational clients with the highest quality management resources through design in which the work is identifying the fundamental nature of a thing, and the skill is fashioning a visible form for it.

4.2.4 Business strategies developed from design thinking and customer-centered mindset.

Planning to launch the business into a single market and creating strong network effects. Once the basic operations were running smoothly and the business model was proven, Jebbia believed that there were at least skating related fashion products would be excellent long-term growth targets. Operating a highly exclusive retail strategy, there are eleven *Supreme* stores worldwide, one in Los Angeles, London and Paris, two in New York and six in Japan. The first *Supreme* store opened in an old office space on Lafayette Street in downtown Manhattan, where permitted skaters with backpacks to skate into the central store. Ten years later, a second location was opened on North Fairfax Ave in Los Angeles, California. The shop of *Supreme* seems to be an art gallery masquerading as a skate shop, or a skate shop masquerading as an art gallery. *BALMUDA* has drawn comparisons to Apple Inc. for its approach to "turning humidifiers, toasters, and space heaters into objects of desire". The original *GreenFan* received a *Red Dot Award* and *iF Product Design Award*. Several subsequent products have also received *iF Design Awards*.

Taking additional collaborations to promote the advertising and competitions in business model innovation. *Supreme*, received the *2018 Menswear Designer of the Year Award* from the *Council of Fashion Designers of America*, has become one of the foremost underground street-wear brands, which not only caters to the skateboarding, hip hop, and rock cultures, but also to the youth culture in general. The brand has a diverse history of collaborations with various skateboard and fashion brands. Louis Vuitton, Nike, Vans, Clarks, Hanes, Playboy, Levi's, Timberland, The North Face, and Comme des Garçons are its frequent collaborators. These partnerships have helped propel the brand's iconic status among youth counter-culture. *Supreme* produces clothes, accessories, skateboards, and other non-clothing items as well, such as the gas-powered mini bike with Coleman. The brand has also released skateboard decks featuring the artworks of Harmony Korine, Ryan McGinness, Larry Clark, Jeff Koons, Christopher Wool, Nate Lowman, and John Baldessari. In addition, they have collaborated with other photographers, artists, and designers such as David Lynch, Marilyn Minter, Takashi Murakami, Peter Saville, Bad Brains, Public Enemy, Mark Gonzales, M.C. Esher and Nan Goldin. The global influence of brands' collaborations was proved highly effective and valuable.

Pricing was another critical component of business strategy development. Fans of *Supreme* form long queues and even camp out in front of stores every Thursday, when the brand drops a new collection. Many of them are limited editions and scarce, which has only further increased the fervor for *Supreme* products. Its shoes, clothing, and accessories are also sold extensively at high price in the secondary market.

The concept should be emphasized as important as convenience and cost savings in the market environment. *BALMUDA* announced its expansion into Europe in 2013. In 2017 *BALMUDA* opened its first retail store, located in Tokyo's Ginza neighborhood. In 2005, Dyson incorporated the wheel ball from his

Ballbarrow concept into a vacuum cleaner, creating the *Dyson Ball*. After produced the *Dyson Airblade* (2006) and *Air Multiplier* (2009), Dyson launched the *Dyson Supersonic* in 2016.

The website, now and in the future, would be the primary platform for subscribers to exchange information and purchase online. A well-designed website or app would be crucial to deliver good service to its members. The works of *Nippon Design Center* (NDC) refer to a lot of industries, such as Movie, Graphics, Advertising, Package, VI/Experience, Signage, Book Design, Exhibition/Space, Products, and Tourism/Social, which including the tangible products and intangible products. And NDC does a good job in every field.

Growth Prospects and the continued funding for research and development could be classified as customer-centered mindset. In 2017, *Dyson* announced plans to produce an electric vehicle, aiming to be launched in 2020, investing £2bn of his own money. The vehicle will reportedly be powered by a solid-state battery, possibly provided by Sakti3. In the same year, *Dyson* spent £7m a week on research and development of new products.

5. Discussion: Suggestions for entrepreneurship and its education in Design disciplines

In regard to Design disciplines, it is necessary to clarify the connection between design and entrepreneurship education, and then strengthen the construction of both product design entrepreneurship and design thinking entrepreneurship in addition, Design discipline has two educational objectives. One is to train students to study the basic knowledge of product design, market connection, brand management, etc. The other is to guide them to develop the mindset of design thinking, and encourage them to have the courage to seek new changes around them, as well as the entrepreneurial spirit they can obsess after graduation, no matter starting their own businesses or devoting themselves to the businesses founded by others.

With respect to entrepreneurship teachers, they should concern about those students with different learning background, explore the theory & practice of entrepreneurship, and improve the ability of curriculum organizing. The knowledge of entrepreneurship in Design disciplines is involved a lot with others, such as art and business, art industry and its operation, innovation and development, design and production, statistics and accounting, market and strategy, finance and economy, organization and management, law and risk, publicity and promotion, etc. Every professional teacher must constantly learn the core and frontier knowledge, and participate in entrepreneurial practice while teaching. In addition, some teachers, who can select appropriate entrepreneurs with both practical experience and teaching ability, should also organize courses those are core and frontier knowledge, arrange the teaching team with systematic teaching contents, and carry out the education tasks in a professional, periodical and typical way.

As for entrepreneurship curriculum, they should focus on logical standard, diversification's enrichment, professional strength and applicability's improvement, such as *BMTP* and *BMIP* in the entrepreneurship curriculum of the Design disciplines. Meanwhile, it could also do some collaborations at home and abroad, in order to become the mature system of global shared curriculum in the era of "Internet +". In traditional entrepreneurship courses, such as *Theory of Entrepreneurship*, *New Venture Creation* and *Small Business Management*, students encounter business issues when they are required to develop new products and services. There are some compulsory courses suggested, such as *Introduction in marketing*, *Basics of entrepreneurship*, *Commercializing transition*, *Cross-discipline design*, *Business Model design*, *Strategic design thinking*, and *Finance & economics*.

All in all, entrepreneurship education in universities is neither to encourage college students to start from scratch, nor to encourage them to dream big, but to hope them to plant the seeds of "changing themselves" and "changing the world" in their hearts. Specifically, there are three aspects: one is to encourage students to lead social progress through professional technological innovation; The second is to encourage students to change the way of life through business model innovation; Third, students are encouraged to lead others to progress through their leadership and entrepreneurship.

6. Summary

In order to conduct business model design more effectively, innovative business model for product design should be divided into two parts. One is for tangible products and the other one is intangible products, according to the totally different form of products. Creating representative business models of tangible and intangible products is the highlight of this research. These two business models (*BMTP* & *BMIP*) clearly distinguish their differences and emphasize the key roles of "customer-oriented" and "future-oriented" participating in the business model. Besides that, this article proposes a new theory of entrepreneurship in product design.

Product design is closely tied to firms' marketing strategies (Bloch, 1995). Thus, it is a major aspect of new product development. Generally speaking, product design is to create a new product to be sold by a business to its customers. In order to avoid the underachieving products being canceled by entrepreneurs without well understanding the market, entrepreneurs should be permitted to put their products in risks and do some values to check the profitable scale. If some products have good performance, brands link sustainable commercialization could also be tapped. A clear branding could act a key role not only in guiding customers to purchase, but also in giving designers' feedback to innovate. Without this, it is difficult for these tangible products to have a clear

market segment. Meanwhile, the charges on advertisement will also become a great waste. Further more, strategic design should also be sensitive to every design-thinking market. A good relationship with customers is a good method to increase the benefits and brand reputation, and the value got from the strategic design thinking products overpasses the value of design products. Good practice in entrepreneurship education is another sustainable approach to shaping the structures of design industry and creating opportunities for entrepreneurs.

Entrepreneurship in product design is not only a simply business education, but also a creation of inter-discipline subject or curriculum. Some people suspected that entrepreneurship cannot be educated, however, a high-quality and innovative business model is able to be learned by focusing on the stages of analyzing the marketing segments, price setting, channels comparing and so on. With the combination of design and business brings a brand new level of entrepreneurship education, with a rise in the innovative industries that mixes entrepreneurship with design, fashion, architecture, and film-making. Teaching and learning in the process of entrepreneurship education in Design disciplines influence each other, but teaching with a suitable method can help learning much more effective. The goals of entrepreneurship education in product design are to promote the marketing ability of product design, innovation of business models and self-employment by making a career as designer and entrepreneur.

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