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**Designing for Meaningfulness in Life: creating  
new meaning in products and services to enhance  
psychological meaningfulness**

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In a world of breathtaking material affluence with ever-increasing diversity of values and options in life, people easily lose meaning in life and pursue meaningfulness stemmed from more psychological desires such as purpose, transcendence and spiritual fulfillment.

This paper aims at investigating into the approach of designing new meaning in product and service which enhance psychological meaningfulness in life. As theoretical bases for empirical study, this paper reviewed two theoretical realms: a) meaningfulness in life from positive psychology as an ideal psychological state, b) design-driven innovation which strategically makes new meaning in product or service. In empirical part, the semi-structured interviews were conducted with six design experts to investigate how designers create new meaning in product or service for meaningfulness in an end-user's life.

The finding suggests that designing meaningfulness is not as straightforward as design-driven innovation which deepens internal vision in future (inside-out) and unlike design thinking model which emphasizes on empathetic understanding of users (outside-in). It's a hybrid approach of outside-in approach exploring the existing meaning in an end-user's life and inside-out approach envisioning the possible future life scenario and meaningful experience in the envisioned context. The literature review revealed six core elements of meaningfulness constituted of purpose, value, significance, engagement, narrativity and connectivity. The finding implies the possibility of enhancing meaningfulness in end-users' life if core elements of meaningfulness are used in conceptualizing ideal meaningful experience in future. It was also found that designing new meaning in product or service requires the behavioral change of end-users toward the envisioned ideal state. To drive a change, the behavioral science could be utilized to inspire the short-term motivation, and it needs to be balanced with the true meaning to the end-user in the long-run.

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**Keywords** design, positive psychology, human experience, product/service innovation

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# 1. INTRODUCTION

## 1.1 BACKGROUND

Everybody searches for ‘meaning’ in their lives as humanity. Meaning helps us explain the world and ourselves, learn, and make sense of what is around us (Diller, 2006). As Barry Schwartz (2004) argues in his book “paradox of choice”, previous generations naturally found answers as they grew older because they found a direction in the less frequent changes and was more easily determined by a clear and stable institutional culture. They slowly focused on the solutions without challenging the ‘meaning’ of their lives anymore. However, the radical change of society and technology makes it easy for us to lose the meaning of lives, and people themselves do not know what is meaningful for their lives (Barry 2004). Baumeister (2002) from positive psychology described this phenomenon as “the loss of consensus of values”. Diversity in modern society frustrates the quest for solid values, which means the strong values that guided our ancestors, such as tradition and religion, have been weakened during the modernization of society, and no firm values have replaced them.

Looking at our everyday lives, we are surrounded with too many options and freedom to choose. In this circumstance, the dimension of the question in the everyday life becomes the form of “Why?” rather than “How?” (Verganti 2016). Everything we use in our lives has meaning(s) in the relationship with users, and people select and use products or services based on their lifestyle and values (Mihaly Csikszentmihalyi, 1981). As a big picture in the modern world, we are surrounded with too many options of everything(s) (incl. product or service) which have various “meaning(s)” for our lives with no consensus of firm values in our lives. The situation calls for the product / service which effectively propose “meaning”, answering the question of “why” people use in their lives.

As a potential approach of creating meaning in product or service, design fulfills the essential role. The relationship between meaning and design goes back to the epistemology of design “Latin de + signare and means making something, distinguishing it by a sign, giving it significance, designating its relation to other things, owners, users, or gods.” (Krippendorff, 1989). Verganti (2009) extended this original meaning of design to the innovation strategy called as “design-driven innovation” or “innovation of meaning”, which has its uniqueness in the creation of new meaning(s) of products and services, and which radically innovates the reason why people want the products and services.



Notwithstanding the increasing attention on design-driven innovation (also called as innovation of meaning) from scholars and practitioners with increasing examples in practice such as Apple, Yankee Candles, Philips Healthcare and Nintendo, the creation of new meaning(s) has not been well studied as an approach to innovation in academic fields of design and innovation management (Norman, 2013). Especially, in the design practice level, the intentional design process which leads to the new meaning(s) of product/service is almost a neglected area of studies.

## 1.2 MOTIVATION

Since my original background lies in social technology with focus on civil engineering, my motivation has always been in the contribution to people's living in terms of “YUTAKA (豊か)”, which is related to the concept to wealth, well-being and meaningfulness in life in English. My question in the career to be pursued is how I might drive the change of people's thinking and behavior toward “YUTAKA” in their lives. With my intuition, the design-driven innovation (DDI) or the innovation of meaning is the possible approach which can be developed to inspire such a change because DDI is the innovation strategy proposing new meaning(s) of products or services for humans. But, the design process of DDI has been very little known. One of the reasons explaining why design-driven innovation has largely remained unexplored is that its processes are hard to detect when one applies the typical methods of scientific investigation in product development, such as analyses of phases, organizational structures, or problem-solving tools (Brown and Eisenhardt, 1995; Shane and Ulrich, 2004). Unlike user-centered processes, design-driven innovation is hardly based on formal roles and methods as ethnographic research (Verganti, 2008). For example, in the design operation level, only one empirical research on the design firm is available, which focused upon the design process of constructing new meaning(s) in a Danish design firm (Line, 2018). Therefore, my motivation in this study is to deepen understanding of the design practices which intentionally creates new ‘meaningful’ products and services in the context of our lives.

## 1.3 GOAL AND MAIN RESEARCH QUESTION

To summarize the above-mentioned research backgrounds and motivation, the overall quest of this study aims at achieving the following research goal with the associated main research questions. The empirical researches are conducted from the designer's perspective

with the focus on examining meaningfulness on an individual level. Though corporates or organizations rarely develop solutions only for an individual, this study darely targets an individual level meaning because meaning in life does not pertain to group(s) of people but to an user who is a person on an individual level.

The main research goal is:

“To discover (or establish) the design approach in practice to intentionally create new meaning(s) in products or services, which contribute to “meaningfulness” in one’s life.”

#### Main Research Questions

1. How do designers interpret meaningfulness in life (of intended users) and incorporate concept of meaningfulness into their designs?
2. How do designers create new meaning(s) of product or service in their design processes?

The first research question aims at investigating designer’s understanding of meaningfulness in a person’s life, and how designers utilize the concept of meaningfulness in life into their design practice. The second research question is to explore the approach of designing new meaning(s) in products and services, which may be practiced in their design process. Through answering these questions, this thesis explores and investigates the practical design process to intentionally create new meaning(s) of products and services, which result in the contribution to “meaningfulness” in an end-user’s life.

## 1.4 STRUCTURE OF THE THESIS

The structure of this study is as follows: First, the psychological theories especially from positive psychology are reviewed. Second, the theoretical background for the design-driven innovation from the design management perspective are presented. These theories are followed by a presentation of the results of the empirical parts. Finally, the findings of the research are discussed, and conclusions are made.

## 2. LITERATURE REVIEW

There are two purposes of conducting this literature review. First, it shows the standing point of this study by comparing it with the previous studies about the innovation management and design research. Second, it constructs a theoretical position prior to the empirical research as Yin (2009) recommends that case study research should be theory-driven in order to investigate what theories work and what does not in the practice. The literature review consists of three parts: psychological basis for meaningfulness in life, positioning within innovation management study field, design theory for innovating meaning (Figure 1). Firstly, as the main concept of the study, the theoretical frame for “meaningfulness” in life is constituted in reference to a wealth resources in psychology. Second, to show the standing point of innovation of meaning among the innovation management, the key drivers and background of innovation of meaning are discussed comparing with the technology-driven and market-driven innovations, which have been main research focuses of innovation management. In the design literature part, the concept of the design-driven innovation (innovation of meaning) is referred and synthesized as main possible approach of achieving the meaningfulness through products and services. The key features of innovation of meaning are also illustrated in the comparison with the previous research focuses in the design innovation such as the human-centered design and design thinking models.

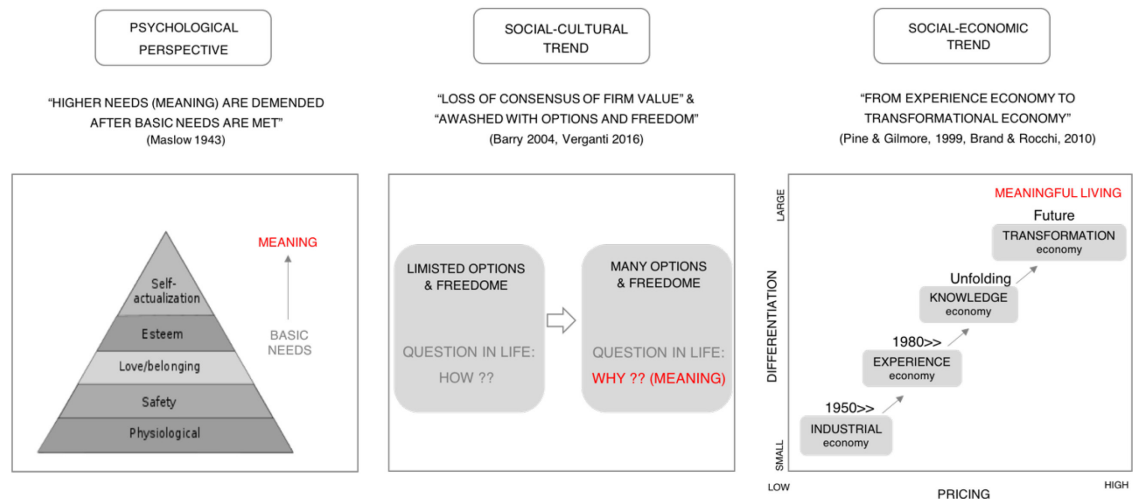


Figure 1. Structure of the literature review

### 2.1 BACKGROUND OF INCREASING DEMAND IN “MEANING”

When it goes back to as old as humanity itself, everybody wherever they are, have the desire for meaning because human beings require an explanation of the world that helps us decide how to act. Meaning helps us understand the world and ourselves, learn, and make

sense of what is around (Diller, 2006). It provides a framework for assessing what we value, believe and desire. However, the search for meaning has never been as relevant as today (Verganti, 2016). There are three possible lines of arguments to support that meaning has been getting important at least in the developed markets: a psychological perspective on the individual level, the socio-cultural level and the socio-economic level (Figure 5). These three lines are not independent but interrelated closely.



**Figure 2. Three lines of explaining why meaning becomes important innovation strategy**

First, the explanation comes from the individual psychology perspective, which leverages from the well-known model of the need hierarchy proposed by Maslow (1943). As the basic needs of people become satisfied, they can afford to wonder ‘why’ they buy and use things instead of seeking for ‘how’ to meet the basic needs. In the advanced consumer markets where products and services are already designed to meet the basic needs, customers are seeking for further dimension, which is meaning.

Second, the socio-cultural trend also supports the increasing demand in people’s searching for meaning. There is no firm consensus of values nowadays under the circumstance where we are overcrowded with possible selections in everyday lives from everyday products to career selections. In the world where everything becomes relatively possible, the frequent questions in life become “why?” instead of “how?” (Verganti, 2016). As Barry Schwartz (2004) argues in his book “paradox of choice”, previous generations naturally found answers as they grew older because they found a direction in the less frequent changes and was more easily determined by a clear and stable institutional culture. They slowly focused on the solutions without challenging the meaning of their life anymore. However, the radical change of the society and technology makes it easy for us to lose the meaning of life, and people themselves do not know what is meaningful for their life. Baumeister (1997) pointed out that diversity in the modern society frustrates the quest for solid values.

The strong values that guided our ancestors, such as the tradition and the religion, have been weakened during the modernization of the society, and no firm values have replaced them. In this context with more choices and diversified values, the challenge is to find the right direction which comes from the right ‘meaning’.

Third, the social-economic trend suggests a shift from the industrial and service economies to the experience and transformation economies (Pine & Gilmore, 1999; Brand & Rocchi, 2010). The underlining philosophy behind the explanation is that the corporates create more economical value from the larger differentiation with competitors. Pine & Gilmore (1999) named the industrial paradigm emerged in the early 1980s as “Experience economy” where the experiences are the economic offerings that are in highest demand, and which thus generate the highest value returns. The experience economy has its key feature in the customization which provides higher value by escaping the commodities manufactured as the standardized goods in the industrial economy. This experience economy has been driven by the brand management which focus upon the lifestyle identities. The emergence of the experience economy has supported that new ‘meaningful’ experiences are demanded, usually with significant implications for their cultural, symbolic and emotional dimensions. The information age also made it easy for the companies to deliver their brand messages and information. However, the abundant information generated by the companies for the marketing purposes has increased the level of ad-fatigue which consumers are overly familiar with the advertisements and grow tired of them. The interest and trust in corporate brand messages have been replaced by trust in peer opinions based on the interactive knowledge platform, which indicates the paradigm shift into the “knowledge economy” (Brand & Rocchi, 2010). As observed in many platform businesses such as Facebook and YouTube, the differentiator in the economy shifted from lifestyle identities to the individual empowerment based on the peer-to-peer networks. The unfolding knowledge economy suggested an increased demand in the dimension of self-actualization as the new dimension of product / service ‘meaning’. It reported that the next paradigm shift expected in the future is the “transformational economy” driven by the increasing awareness on the socio-environmental issues such as sustainability, malnutrition, climate change and aging society (Brand & Rocchi, 2010). It is becoming increasingly apparent to many visionaries that companies can flourish by doing good for society. Since the transformation economy is driven by a systemic shift in the socio-economic mindset toward socially good, it is implied that the demand in the “meaningful” living as a whole in the society, such as Whim offering mobility as a service. Overall, the paradigm shifts which have occurred and are expected to occur support the reason why ‘meaning’ in life has become more relevant nowadays as depicted in Figure 6. It’s worth noticing that the needs of ‘meaning’ in life become different and diversified

along with these industrial paradigm shifts, for example, emotional, cultural meaning in the experience economy to self-actualization in the knowledge economy, and to socially meaningful meaning in the transformation economy.

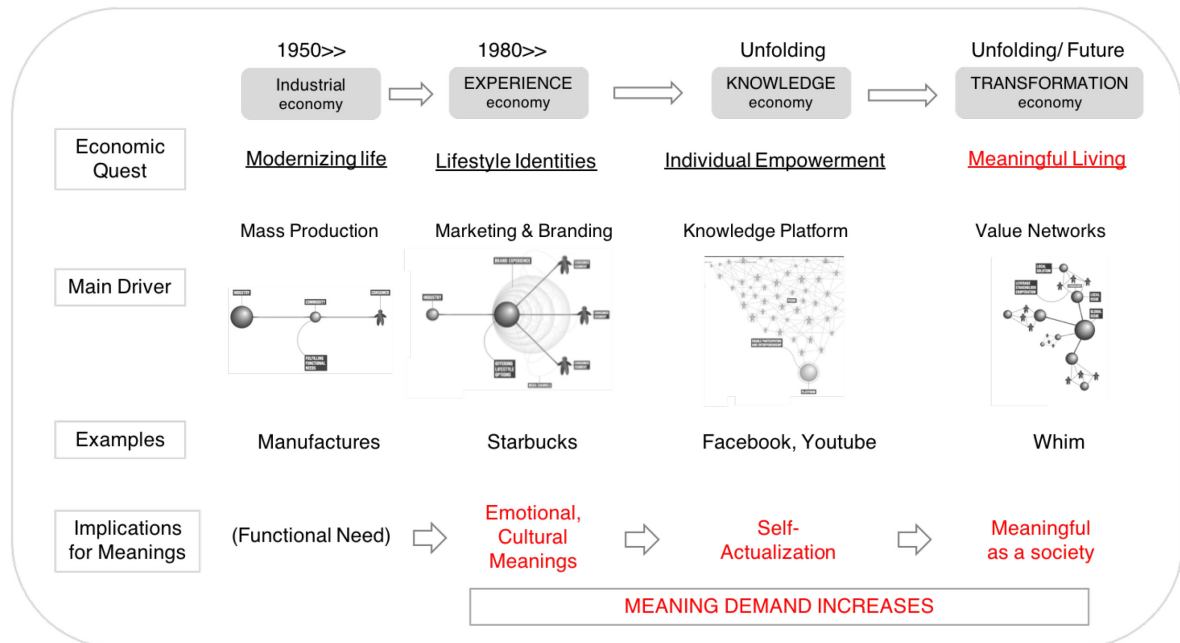


Figure 3. Paradigm shifts for increasing needs in ‘Meaning’ (based on Brand & Rocchi, 2010)

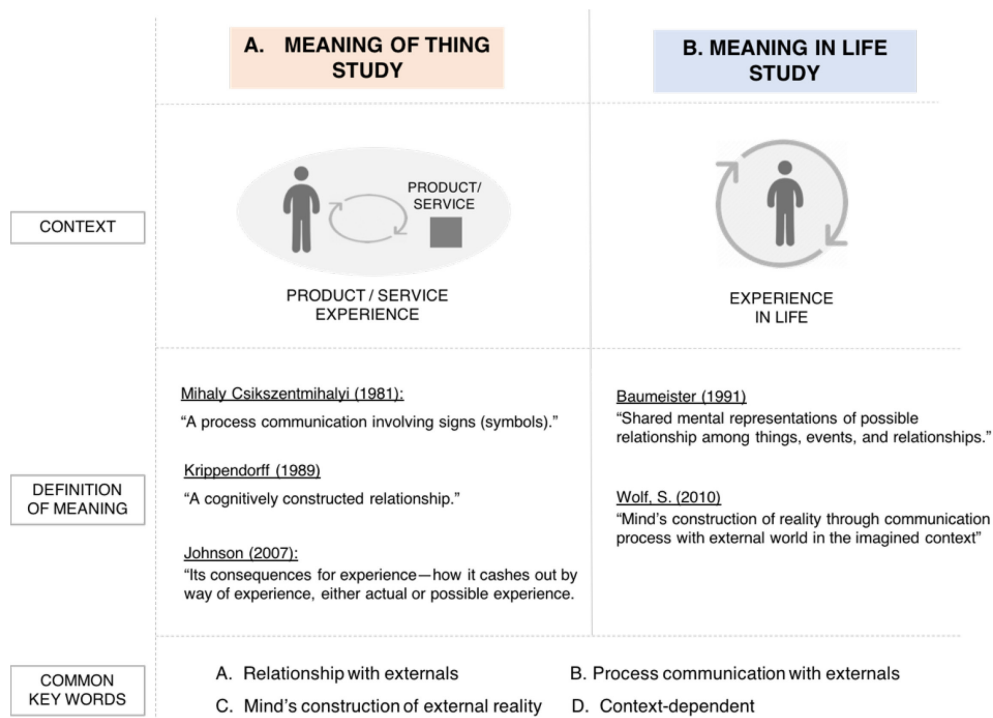
## 2.2 PSYCHOLOGICAL BASIS FOR MEANINGFULNESS

As discussed, previous researches indicate the increasing demand in “meaningfulness” in life in the modern age, this section aims at exploring the concept of “meaningfulness” in life and constituting the theoretical frame for meaningfulness by referring to a wealth of psychological theories into meaning.

### 2.2.1 CONCEPT OF MEANING

The concept of meaning is considered as an elusive private affair and not firmly defined. Wolf (2010, p. 7) mentioned that academic philosophers do not talk much about meaningfulness in life because the term is mainly used by theologians or therapists, and by people who are in some way dissatisfied with their lives but are unable to pin down why. However, in order to discuss meaningfulness in life, this section refers to a couple of definitions of “meaning”, and identify common key features which could be found across theories. “Meaning” has been studied in two main streams of research: the things-oriented approach and the living-oriented approach. The things-oriented approach has been studied

in the semantics, rooted in the linguistic or philosophical study. The living-oriented approach is studied as meaning in life (MIL) research in positive psychology. In product semantics study, the researchers have tried to explore, what and how things mean to a person. Krippendorff (1989) defined the meaning as “a cognitively constructed relationship” in his work of exploring the symbolic quality of product. Csíkszentmihályi (1981, p. 7) who is a well-known scholar in the positive psychology and psychology of things, defined meaning as “a process communication involving signs (symbols)”. He also mentions that meaning selectively connects features of an object and features of its real environment or imagined context into a coherent unity. In short, this means that meaning depends on the context imagined by person. In MIL studies, Baumeister (1991, p.15) defines it as ‘meaning is shared mental representations of possible relationship among things, events, and relationships.’ When we ask what something means, we are trying to locate that something within our web of mental representations. Meaning is about mentally connecting things. Johnson (2007, p. 10) mentioned that the meaning of a thing is its consequences for experience—how it “cashes out” by way of experience, either actual or possible experience’. Geertz (1977), one of the pre-eminent thinkers in contemporary anthropology, noted that meaning does not emerge from our genes, or from our Creator, complete and ready for use. Instead, Geertz explained, meaning is our mind’s construction of reality, the translation of existence into conceptual form. Considering these definitions, central to the meaning, thus, are “Relationship”, “Mind’s construction of external reality”, “Process communication (shared understanding)” and “Context-dependency” (Figure 4).



**Figure 4. Definition of meanings from two main streams of meaning study**

### **2.2.2 CONCEPT OF SENSEMAKING**

The concept of sensemaking is focused on the ambiguity giving primacy to the search for meaning as a way to deal with uncertainty (Karl, 2005). This section describes the concept, key features and the general process of sensemaking. Sense-making is the process by which people give meaning to their collective experiences. It has been defined as "the ongoing retrospective development of plausible images that rationalize what people are doing" (Karl, 2005). Sensemaking starts with chaos, and it organizes the flux of fleeting sense impressions. In the early stage, sensemaking involves noticing the raw experiences, conceptually fixed and labeling them which are guided by one's mental models and salient cues, leading to the simplified understanding of the perceived world as a result. The sensemaking is the activity of seeking for a plausible answer to what is the story which explains the circumstances rather than seeking for accuracy. The other point is that sensemaking depends on a variety of social factors, which means interpretation is affected by the social interactions such as the previous communication before sensemaking. Sensemaking is expressed as the retrospective activity looking back over the earlier observations and seeing a pattern, which invents a new meaning (interpreting) for something that has already occurred during the organizing process. At the same time, sensemaking is the prospective activity in the sense that it requires the answer to the question what is the next, emerging from presumptions about the future, articulation concurrent with action, and projects that become increasingly clear as they unfold.

### **2.2.3 THEORETICAL FRAME OF MEANINGFULNESS**

This section intends to constitute the theoretical frame of meaningfulness in life by exploring the common determinants of meaningfulness across literatures. There are many different answers to the question what makes experiencing life as meaningful. This section tries to identify the core elements constituting meaningfulness in life by referring to the literatures. The diversity of the proposes for meaningfulness in life include, according to the summary of meaningfulness studies by Wim 2012: 'Creativity and excellence' (Audi 2005, p. 331), 'flow' (Csikszentimihaly 1991), 'commitment to a purpose' (Frankl 1959), 'belonging to and serving something that believe is bigger than the self' (Seligman 2011, p. 17), 'the experience of raising children' (Gopnik 2009, p. 238), coherence among the diverse aspects of one's life, such as personality, daily life, cultural values, and life-story (Haidt 2006), 'self-conception-related achievement' (James 2005) and 'love for and engagement with things of objective value' (Wolf 2010).



Baumeister et al. (2013) defined *meaningfulness as presumably both a cognitive and an emotional assessment of whether one's life has purpose and value*. Meaningfulness may therefore often involve understanding one's life beyond the here and now, integrating future and past. Based on this definition, Baumeister (1991, p. 29) concluded in his work of life stories and needs for meaning that the quest for a meaningful life can be understood in terms of four main needs of meaning; *Purpose, Values, Efficacy, and Self-worth*. *Purpose* is both objective and subjective. The objective purpose is one's goal that is desired but not yet real. The subjective purpose is a fulfillment which is a subjectively anticipated state of future fulfillment. The essence of purpose is that present events draw meaning from their connection with future events. *Values* refer to a sense of goodness or positivity to life and justify certain courses of action, and it enables people to decide whether certain actions are right or wrong. *Efficacy* refers to a belief that one can make a difference to fulfill purpose and value because people seek control over their environments and over themselves. *Self-worth* is a belief that they are worthy persons. The one from individual regarding oneself as superior. The other comes from collective pursuit, such as self-esteem from belonging to some group or category. In the psychological research, which aims at discovering what makes human beings experience meaningful experience, meaningfulness in life (MIL) is defined as the extent to which one's life is experienced as making sense, as being directed and motivated by valued goals, and as mattering in the world. Although many definitions have been asserted for the construct of MIL, there is no commonly accepted definition. Recent reviews, however, reveal a growing consensus for a tripartite model of MIL with three dimensions: mattering or significance (Evaluation of Life), purpose or goals (Motivation of Life), and coherence or comprehensibility (Understanding of Life) (Clara 2018). Mattering or significance refer to the sense of life's inherent value and having a life worth living, which is the domain of Evaluation. People seem to have to transcend themselves in a way that makes them feel that they make a difference, are significant, or matter to others. Purpose or goals refer to the sense of core goals, aims and direction in life, which is the domain of Motivation of life. Having goals involves developing intentions, achieving plans, creating a course for one's life, and implementing one's aims in various arenas (e.g., work, family). Coherence or comprehensibility refer to the sense of comprehensibility and one's life making sense, which is the domain of Understanding of life. The ability to understand one's life, such that a life "makes sense to the person living it, it is comprehensible, and it is characterized by regularity, predictability, or reliable connections" (Heintzelman & King, 2014, p. 562).

Considering the above-mentioned definitions and understandings of what constitutes meaningfulness in life, the high-level elements of meaningfulness in life are summarized as; *Purpose, Value, Significance, Engagement, Narrativity* and *Connectivity* (Figure 5).

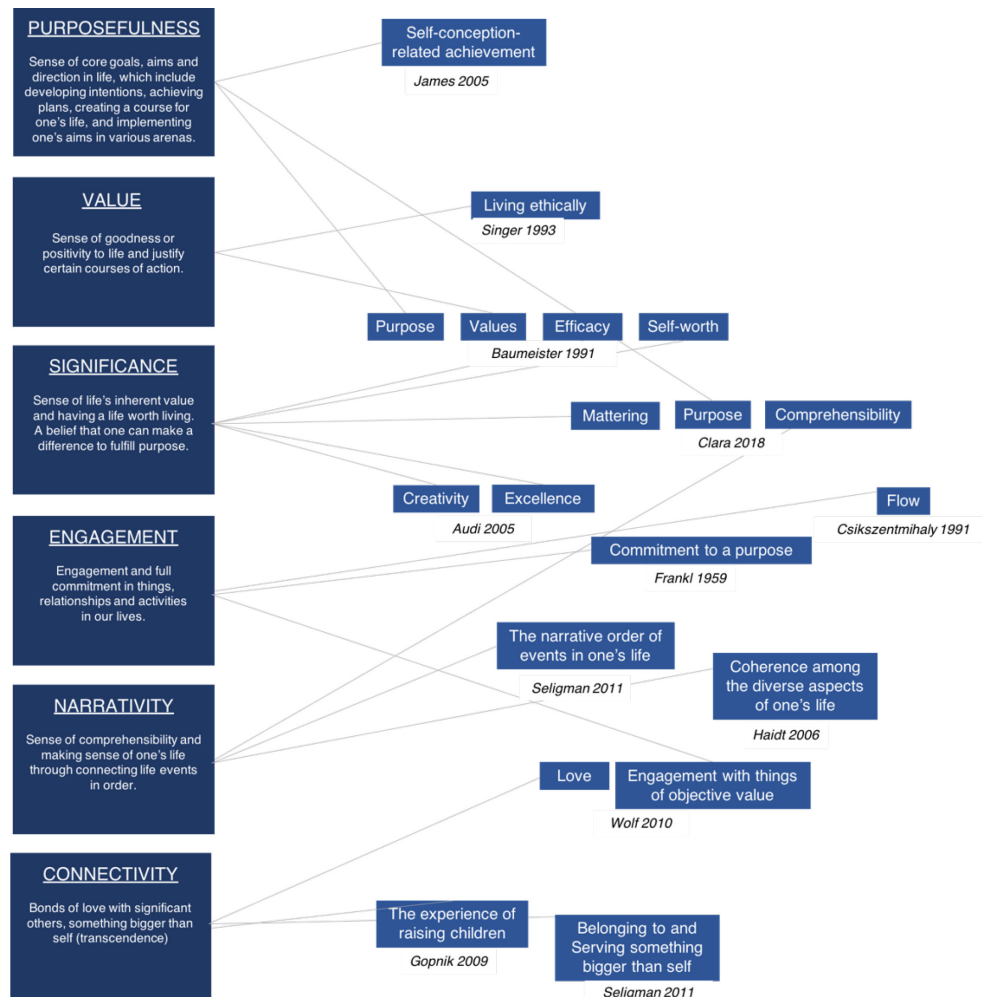


Figure 5. Key elements of meaningfulness in life

## 2.3 'MEANING' AS NEW DRIVING-FORCE OF INNOVATION

As discussed in the previous section, meaningfulness in life is theoretically modeled from human psychological perspective. This section introduces the concept of innovation of meaning with its positioning comparing with the other innovation strategies. As a hypothesis of this study, innovation of meaning seems a possible approach which can be developed to create product / service contributing to “meaningfulness” in life.

When looking back to the history in the innovation management researches, as the driving forces of innovations, there have been two major elements focused upon: ‘technology’ and

‘market’. A rich stream of studies has explored the antecedents of technological breakthrough in the past decades. (Abernathy & Clark, 1985; Christensen, 1997; Christensen & Bower, 1996; Henderson & Clark, 1990; Utterback, 1994). These studies have a common premise in explaining how the innovations have occurred as the result of the disruptive technological changes based on the technology-based inventions from the industrial engineering, applied sciences and/or pure sciences. Main roles have been fulfilled by inventors (engineers) and entrepreneurs, ranging from the birth of typewriters to the emergence of personnel computers.

Later, the innovation studies have shifted their attention to the market-driven innovations, which focused upon the applications of technologies to enter the new market domains (Chan & Mauborgne, 2005). The philosophy behind the market-pull innovation is that the source of innovation comes from the deep understanding of user needs which subsequently followed by searches for the technologies and languages. Main roles have been fulfilled by the marketers or entrepreneurs who could analyze the new customer needs in unexplored market space and combine existing technologies to produce a market-fit product or service.

The 1991 OECD study on technological innovations well captures the essence of innovations from these technology-driven and market-driven perspectives by defining innovation as follows: “Innovation is an iterative process initiated by the perception of a new market and/or a new service opportunity for a technology-based invention which leads to development, production, and marketing tasks striving for the commercial success of the invention”.

In addition to technology and marketing perspectives, ‘design’ and ‘meaning’ have gained much attention as the third driving-force of innovations from practitioners and scholars. Firms are increasingly investing in design and involving design firms in their innovation processes (Nussbaum, 2004). ‘Meaning’ has recently been recognized as the unique proposition of design in terms of driving innovation, which differentiate with the marketing and technology in innovation. Verganti (2008) who is a design management scholar in Italy proposed the concept of design-driven innovation focusing upon ‘meaning’. The design-driven innovation is defined as the innovation strategy aiming at radically change the emotional and symbolic content of products or services (i.e., their meanings and languages) through a deep understanding of broader changes in society, culture, and technology. The innovation of meaning concerns the purpose of a product or a service: ‘why’ people use things and services. The design-driven innovation occurs with or without the combination of the technological change. The relationship among technology,

market and meaning as the sources of innovation is illustrated in Figure 4. This study targets this third dimension of ‘meaning’ as new driving force of innovation.

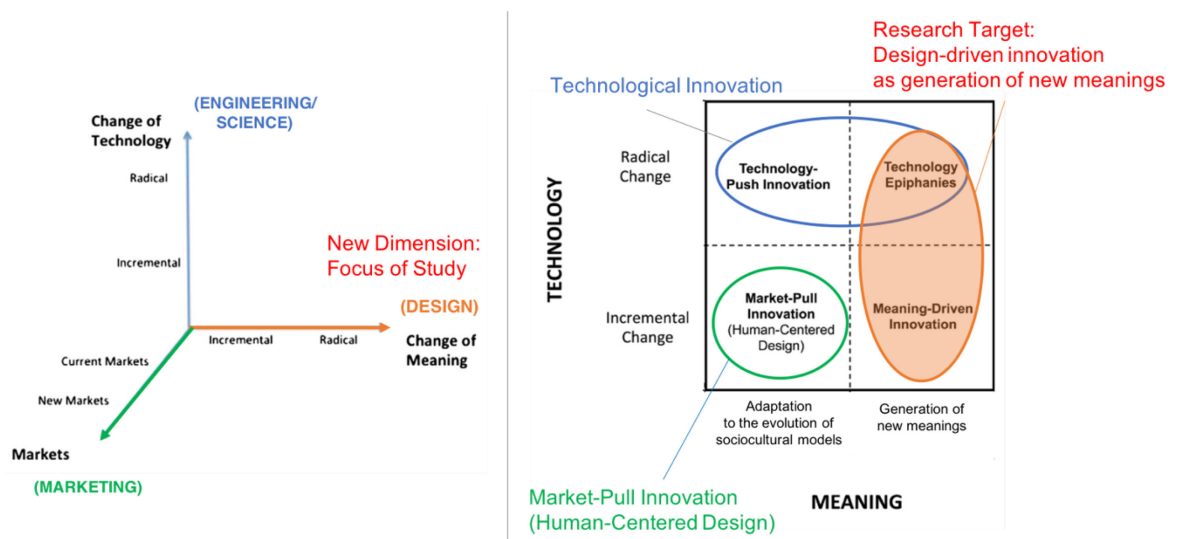


Figure 6. Focus of this study in the realm of innovation study (Edited based on Verganti 2013)

## 2.4 DESIGN FOR CREATING NEW MEANING

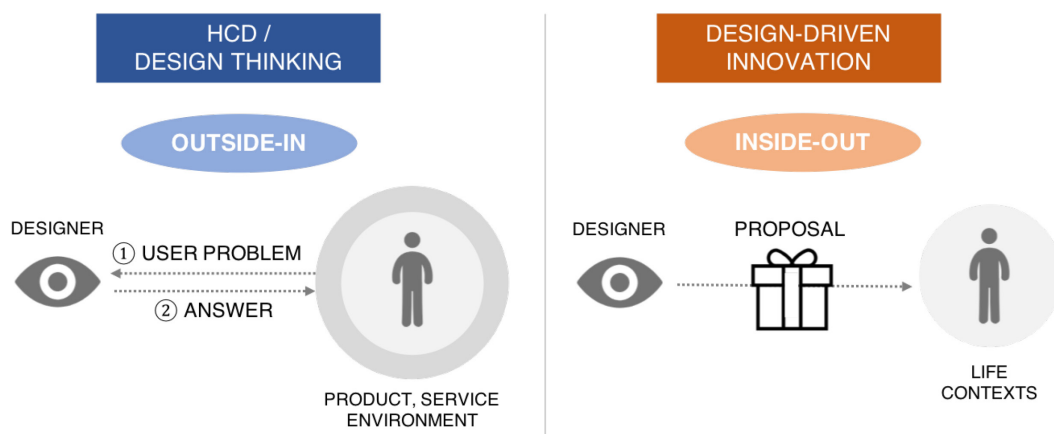
Innovation of meaning is also called the design-driven innovation due to the essential role of design in making meaning. The word “design” has broad definitions which are sometimes vague and slippery. There are the researches, which are targeted the thinking process of professional designers or ways to describe what designers do in practice, called as “designerly thinking”. According to the designerly thinking researches, design can be categorized mainly in the five discourses (Johansson et al., 2013): design as the creation of artifacts, design as a reflective practice, design as a problem-solving activity, design as a method of reasoning and design as a meaning creation. These five discourses are not contradicted but can exist simultaneously. Especially, Krippendorff (1989, 2006) argued that design fundamentals lie in “creating meaning” by referring back to the etymology of design, the Latin *de + signare* and means making something, distinguishing it by a sign, giving it significance, designating its relation to other things, owners, users, or gods. In this sense, it has been acknowledged that design fulfills an essential role in the meaning construction of a product and a service.

There are two design strategies for innovating the meaning of products / services: the user (market)-driven and meaning-driven designs. The studies on the design contributions to the innovation have historically paid attention to the user-driven approach normally called the

human-centered design in the last decade. Its common assumption is that the product and service development always start from the deep understanding of the users, i.e., their needs and values. The underlying philosophy behind HCD is the empathy with users, which emphasizes the applied ethnographic research observing users in the use context. The HCD model has been considered the major contribution of the design which enables the technology to match with the user needs (market). Norman (2013), who is one of the originators in HCD, argues that user-driven approaches fit for the incremental innovation which improves the product / service within a given frame. The design thinking model, which has been spotlighted by the successes of major design firms such as IDEO (Kelley, 2001), has the same philosophy as HCD, which is the empathy with users behind the design model. In the design thinking model, design is regarded as “a process for creative problem solving”, which corresponds to one of the design discourses of design as a problem-solving activity. Both HCD and the design thinking model are the Outside-In approaches, which try to answer the user’s problem based on the deep understanding of the user needs. The source of creativity in these design models lie in the ideation, which combines many and diversified ideas generated under the open-minded atmosphere and environment.

On the other hand, it has been pointed out that the design-driven innovation essentially requires a fully new approach, which is often regarded as the contrasting model to the traditional HCD method or the design thinking model. Through the empirical studies conducted with the well-known design brand companies mainly in Italy, it has been discovered that the design-driven innovation starts from the internal ideas, a vision or a philosophy regarding the corporate’s worldview what the corporate want people to love in the future (Verganti 2016). It means that the design-driven innovation does not start from the user research, rather sometimes there was no user research or market research conducted when retrospectively reflecting back on the successful design process for the innovation in meaning. The design-driven approach is therefore the inside-out approach which proposes what people do not know yet but love once presented, like a birthday gift. The creativity in this model lies in the constructive criticism which deepens one’s internal idea, vision or philosophy to brush up those internal visions toward the people’s hidden needs. It was mentioned that the design-driven innovation brings about the radical innovation, which is considered as a change of frame, i.e., “doing what we did not before” on the contrary to the incremental innovation which is the improvements within a given frame of solutions, i.e., “doing better what we already do” (Dahlin & Behrens, 2005). It has been explained that the underlying reason why the design-driven innovation does not put an emphasis on the user understanding is that people are immersed in the existing socio-cultural regime and they themselves don’t know what they will love in the future

socio-cultural regime (Figures 8 and 9). In this sense, theoretically, the design-driven innovation starts from the subtle comprehension of the change in the socio-cultural regime rather than reacting to the already existing user needs in the current socio-cultural regime. The outside-in approach itself has the connection to some other innovation strategies such as blue ocean strategy (Kim and Mauborgne, 2005) and disruptive innovations (Clayton, 1997). The design-driven innovation has the same direction as these strategies in terms of aiming for a change in the direction of which customers give values to products and services. The uniqueness of design-driven innovation lies in the design which proposes the “meaning(s)” which is empathetically closer to the persons in lives.



**Figure 7. The comparison of HCD/design thinking and the design-driven innovation**

	HCD / DESIGN THINKING	DESIGN-DRIVEN INNOVATION
MAIN DRIVER	HUMAN NEEDS	VISION IN FUTURE
TYPES	INCREMENTAL	INCREMENTAL + RADICAL
DIRECTION	OUTSIDE-IN	INSIDE-OUT
CREATIVITY	IDEATION	CHANGE IN MEANING
MINDSET	OPEN-MINDED	CRITICISM
DESIGN ATTITUDE	SOLVE PROBLEM	MAKE PROPOSAL
INSPIRATION	USER PROBLEM / NEED	SOCIO-CULTURAL REGIME CHANGE
CONTEXT	USERS IN USE	PEOPLE IN LIVES
FRAME	WITHIN A GIVE FRAME	REFRAMING

**Figure 8. Two contrasting design in a nut shell (based on Verganti, 2016, Norman, 2013)**

## 2.5 CASES OF INNOVATION OF MEANING

The approach of innovating ‘meaning’ of a product / service has not been well investigated in the previous studies (Norman, 2013), however, the cases of innovation of meaning have been historically observed across various products / services including business-to-business and business-to-customer. These cases are most likely linked with the change of the socio-cultural dynamics.

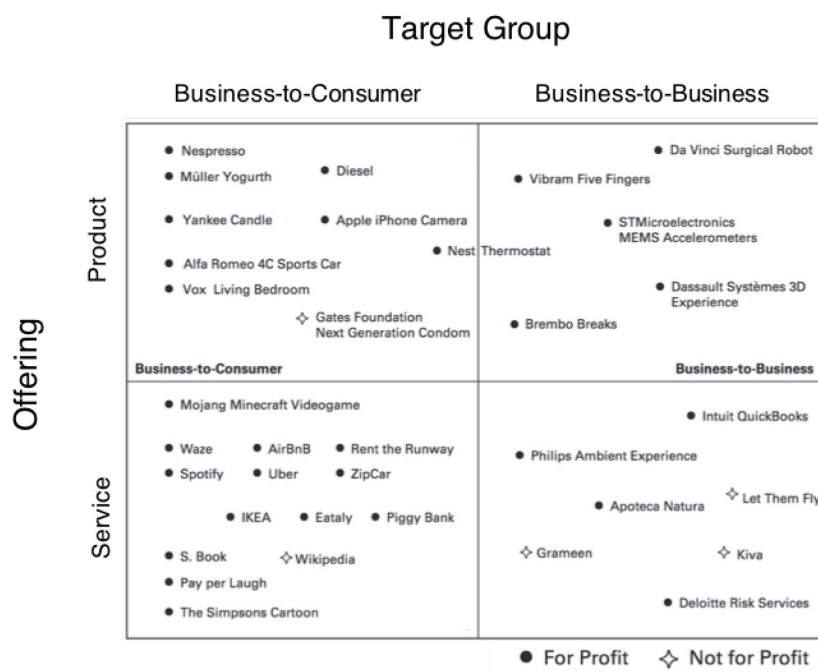
For example, mini-skirts became a fashion trend and has continued to be commonplace particularly among younger women and teenage girls from 1960s. Before that time, short skirts were only seen in sport and dance clothing, such as short skirts worn by female tennis players. Once invented, the mini skirt has been a symbol of “freedom and liberation” for woman as represented by the statement of Mary Quant who named the skirt that “I liked my skirts short because I wanted to run and catch the bus to get to work. It was that feeling of freedom and liberation”. The new meaning of miniskirts as the freedom and liberation of woman was coincided with the socio-cultural dynamics of the women’s movement for feminism that women became active and visible. In broader sense of the change in meaning, there is the example of innovating the whole concept of book stores.

The bookstore Morioka-Shoten in Japan changed the concept of the bookstore in a radical manner. In the bookstore, there is only one book which changes weekly, often accompanied by art and photos that complement the title (Figure 9). The owner, Yoshiyuki Morioka, created a space to spotlight just one literary work in a bid to address decision fatigue caused by having too many options. This bookstore also organizes the book event which connects the reader and the author in person and the author has the chance to tell its story behind the book so that the reader can feel the underlining contextual value and can be motivated for purchasing. In this bookstore, consumers no longer come to bookstore for the reason of searching for what they like, rather they come to the bookstore to meet one book offered by the renowned shop manager. The concept of “One Book Store” gains the popularity under the socio-cultural trend that the consumers often buy book online and there are so many options of books available.



**Figure 9. Japanese bookshop stocks only one book at a time (Photograph: Miyuki Kaneko)**

The above-mentioned examples have occurred without any new technological change. Innovation of meaning brings a radical change in meaning, when it occurs accompanying with a new technology or the use of existing technologies in totally new contexts (Norman, 2013). A classic example of a successful, design-driven technology innovation is Nintendo's Wii, which innovated a video game product meaning from an entertainment gadget for children to an active physical entertainment in the real world, through socialization (Verganti, 2009, 4–6). In the service area, design-driven service innovation such as Airbnb is also observed. Airbnb innovated the meaning of loading from a safe rest in a standard room to an opportunity to socialize with people and immerse oneself in the authentic life of a local place.



**Figure 10. Examples of innovation of meaning (Verganti 2016, p. 206)**



## 2.6 DESIGN PROCESS OF INNOVATION OF MEANING

In order to intentionally create innovation of meaning, Verganti (2009) who is the originator of the concept of design-driven innovation proposed the process of “Interpretation”. It is explained that the help of *interpreters* fulfills the critical role in creating new meaning. Interpreters are the experts who are familiar with the context of the targeted products and services, and can provide various meaning interpretations in the targeted meaning(s) of products and services.

The process of innovation in the meaning making consists of the three stages (Figure 12): Listening, Interpreting, and Addressing (Verganti, 2009). In the listening stage, the company or the internal design team utilizes a network of external interpreters who are experts in the targeted life context. This stage aims at developing the knowledge of product and service meaning(s) by identifying the multiple interpreters and dialoguing with them. The company, firstly, needs to define the life context that its innovation project is addressing, then, identify and engage the multiple interpreters who have the deep knowledge into how people give meaning in the targeted life context or who are likely to influence the emergence of new meaning.

The second stage is interpretation, where the company integrates the insights from the previous stage with the company’s portfolio and knowledge to explore and develop their own vision and proposals of a possible breakthrough concept for the product / service. This process is the explorative in nature, and the process is compared to the research project which requires the deep investigation and experiments, unlikely with the fast-creative brainstorming.

The last stage is called addressing, which proposes the constructed new meaning and the associated product / service to the market. The challenge in this stage is that a firm needs to support people who are not familiar with the proposed life context, by facilitating the understanding, assimilation, and adoption of the new meaning. This is because innovation of meaning implies a change in sociocultural paradigms, therefore, the market and the consumption culture will not be the same if the innovation is successful. To succeed this stage, the company can utilize the cultural prototypes such as exhibitions, cultural events or books in order to resort to the interpreters (not the end-users) who are considered as early adopters and also have large influences on the end-users. Through the cultural prototypes, the company can convey the intimate emotional and symbolic value to the interpreters (communicating value of new meaning).

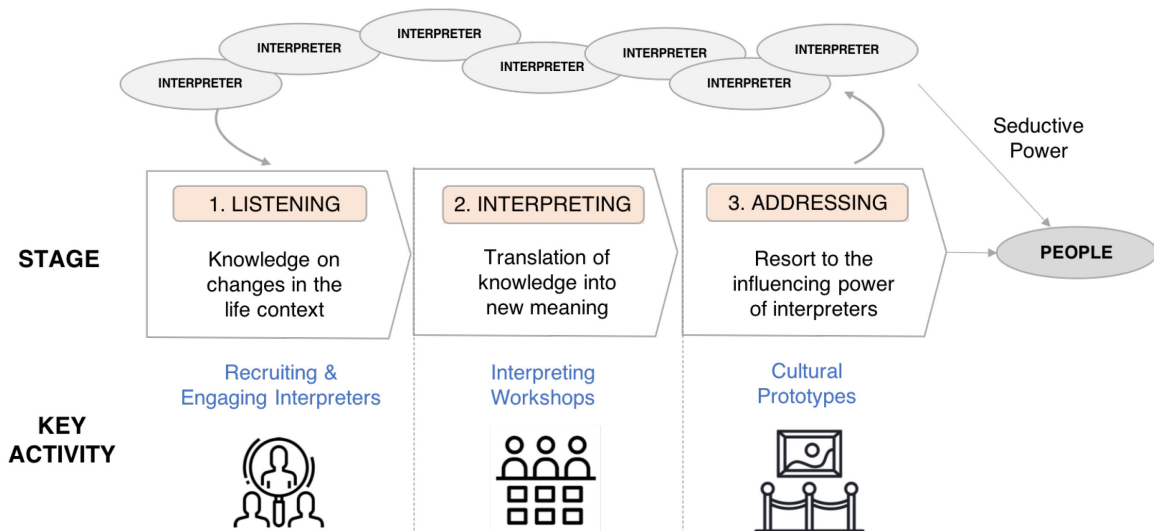


Figure 11. The overall process of innovation of meaning (based on Verganti 2009)

Verganti (2016) extended the above-mentioned general process into the detailed process, which focused upon the creation of new meaning (Figure 14). The process consists of five steps, which were generally designed to validate the individual hypothesis about the vision in the new meaning of a product / service, by deepening own meaning toward more meaningful for other people through receiving the constructive criticism from others. The initial step is called envisioning, which aims at exposing the individual hypothesis about new meaning of product or service. This step requires the critical reflection in depth. The second and third steps aim at brushing up meaning and find a new direction of meaning by receiving the criticism from the pair and the radical circle. These two steps are the central processes of making new meaning(s) within the internal organization. The fourth step is to further receive the criticism from the outside experts, who can help with making the new meaning more robust and toward what other people would love. Innovation of meaning is compared to the inside-out approach in the contrary to the outside-in approach such as HCD method. This step is the process how to move on to Outside from Inside assumptions of a new meaning. The final step is the testing and feedback state, which turns the constructed vision and the new meaning into the action. The suggested method and tool included the sprint process (Jake, John & Braden, 2016) and the minimal viable product (Taylor, 2013).

It's worth highlighting that these processes are proposed from the management perspective and activities. There are limited researches available on the process of construction new meaning(s) on the design operation level. Line (2018) concluded in her research into meaning design process of Danish design firms, that further empirical studies are required for identifying the clear pattern of the process. This study regards the process model (Figure 14) as the theoretical basis, which requires empirical evidence from the design

practice perspective as one of the main research objectives. In addition, previous researches have not paid attention to the variety of meaning(s) in product / service. This study targets at the specific meaning, which contributes to meaningfulness in life as discussed in section 2.2 that ‘meaning’ from one’s life perspective becomes increasingly relevant nowadays.

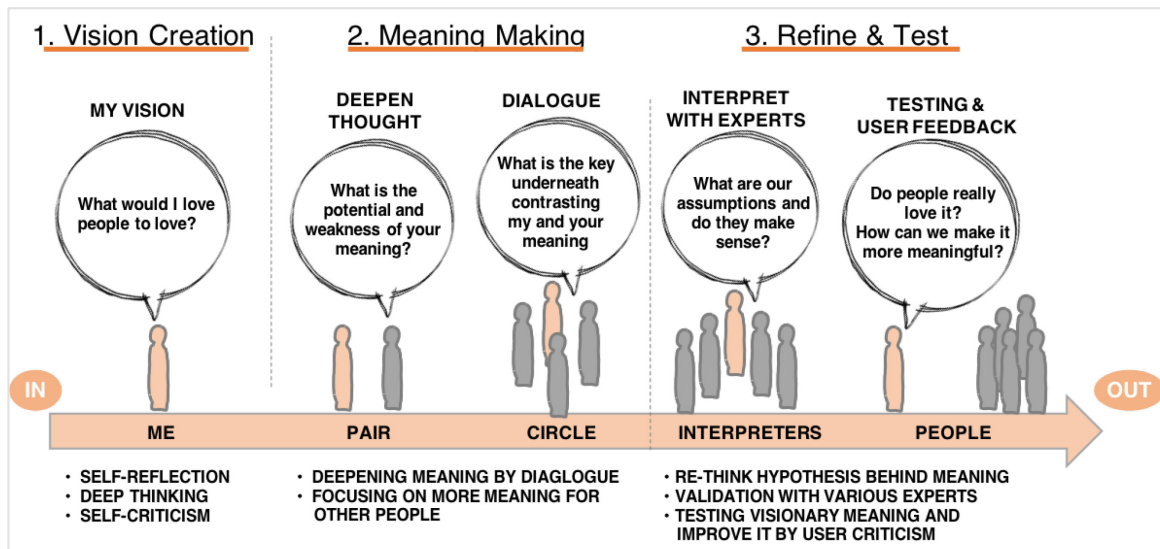


Figure 12. Process of new meaning making (based on Verganti, 2016, p. 130)

## 2.7 SYNTHESIS OF THEORETICAL FRAME

This section illustrates the theoretical frame synthesized from the previous researches in order to discuss the empirical findings from the next sections. The frame can be considered as the basis for exploring the phenomenon of innovation of meaning, contributing to meaningfulness in life (Figure 13). As the basic concept in this frame, both a model of meaningfulness in life from psychology and innovation of meaning are integrated. The model of meaningfulness in life is considered as the intended outcome of the product or service by creators such as designers, and innovation of meaning is hypothetically considered as the possible approach which creates new meaning(s), supporting the meaningfulness in life of persons (intended users).

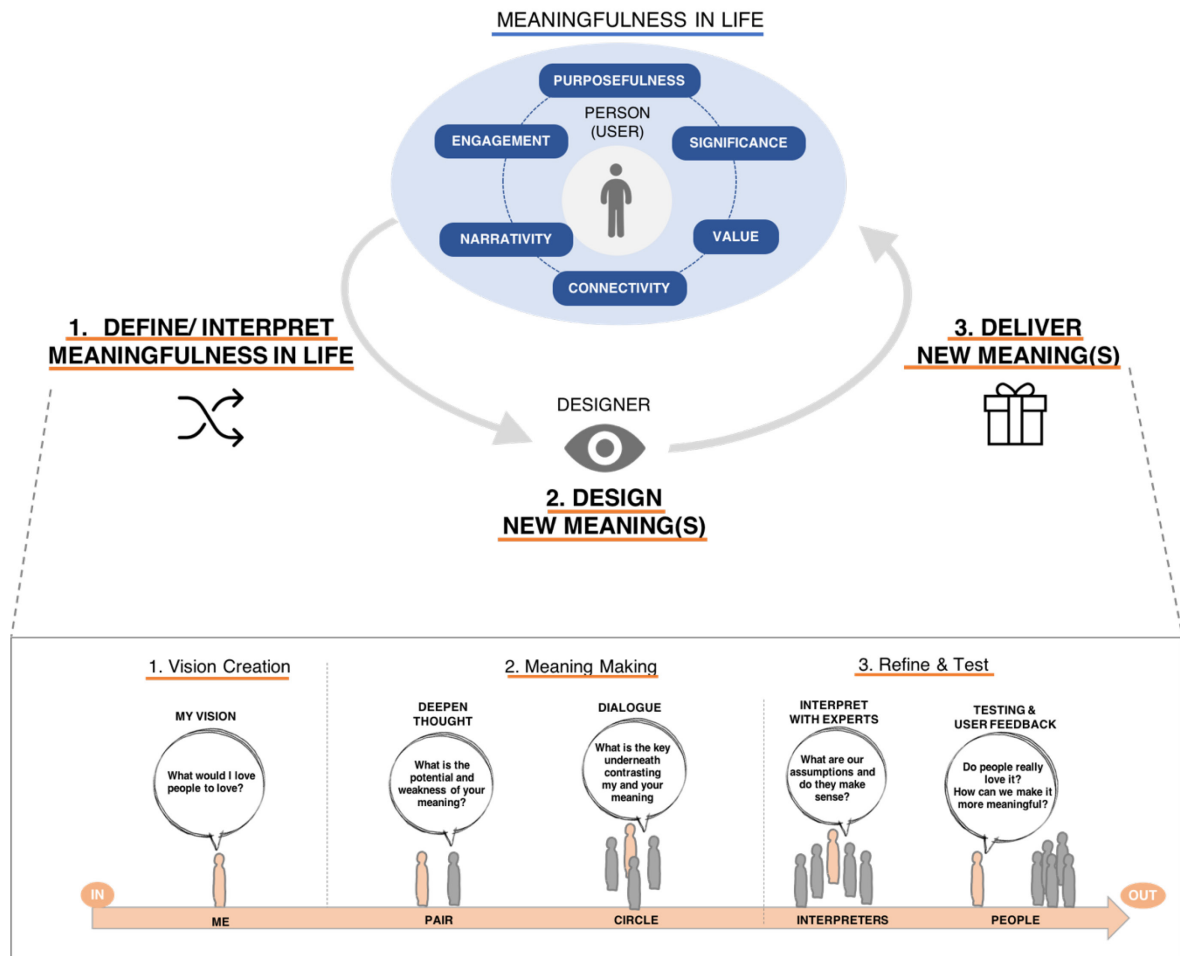


Figure 13. Synthesized theoretical framework in a nut shell, with research agendas

## 2.8 SUMMARY

The literature reviews explored and synthesized the arguments in the previous researches, regarding the phenomenon of innovation of meaning which proposes new meaning(s) of products and services. The previous researches indicate that innovation of meaning becomes more relevant in the present age from three possible lines of perspectives: (a) increasing the diversity and freedom of selections leads to the search for meaning, (b) the higher needs after satisfying basic needs suggest more demand for the self-actualization, and (c) the predicted economic driving-force nowadays adds new layers of meaningfulness in life. The existing literature about innovation of meaning indicates fundamental differences with the traditional design approach for innovation such as design thinking (DT) and human-centered design (HCD) in terms of the direction of innovation process and the mindset. Innovation of meaning moves from the internal vision to the outside people needs and values (inside-out) rather than the outside-in approach by DT and HCD. It is grounded on the criticism to deepen one's vision unlikely with the mindset for ideation

emphasized in DT and HCD. Further, the literature review looked at the proposed methods and processes for innovation of meaning, which constituted of three stages that is vision-creation, making-meaning and testing. In order to discuss the “meaning” contributing to meaningfulness in life in the empirical part, the concept of meaning and the elements of meaningfulness are summarized by referring to the wealth resources of psychologies. These psychological theories help by compensating the lack of considerations into the variety of “meaning” in the previous researches of innovation of meaning. Further, it supplements the long-term perspective into design for experience which has normally focused upon the short-term product / service experience (Desmet, 2012).

Notwithstanding with these previous researches into innovation of meaning, the literature review also identified three research challenges, which validate this empirical study. First, the creation of new meaning(s) has not been well studied as an approach to innovation in academic fields of design and innovation management (Norman, 2013), though meaning is the core of design, and the designer’s work is therefore a matter of creating this meaning. Second, there are a couple of studies available proposing models and processes for meaning design. However, those have focused upon the management perspective and activities. There is very little guidance for designers or non-designers on how to practice this creation of new product and service meanings which require empirical evidences (Line & Louise, 2018). Third, the previous studies into innovation of meaning have not paid attention to the variety of meaning(s) created. Especially, specific meaning, “meaningfulness” in one’s life, has not been studied as the approach of innovation of meaning even though the socio-cultural, socio-economical and psychological perspectives indicate the increasing demand for meaning from one’s life perspective.

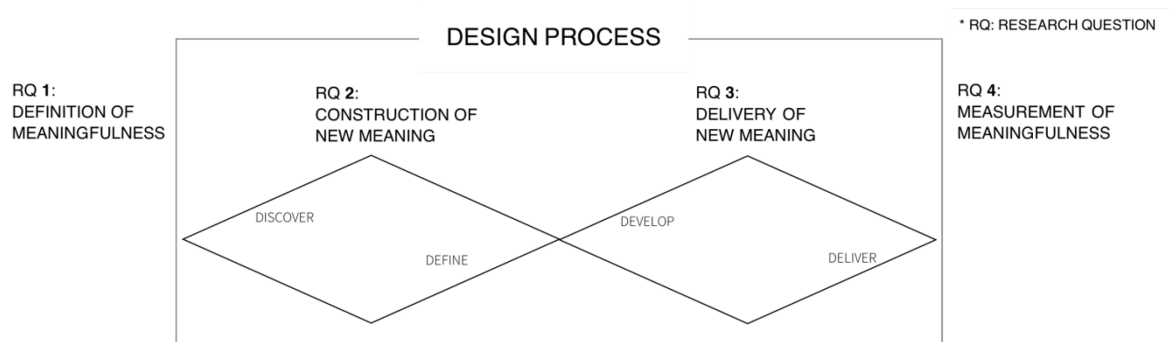
### 3. RESEARCH DESIGN AND METHODS

#### 3.1 RESEARCH QUESTIONS

This research study focuses on exploring how to create meaning of products and services in the design practice, especially contributing to “meaningfulness in life”. Based on the results of literature review part, the explorable research questions are developed from the initial main research questions as follows.

- RQ 1. How do designers define and take into consideration of meaningfulness in an end-user’s life into product and service meaning?
- RQ 2. How do designers conceptualize meaning of product and service in their design processes?
- RQ 3. How do designers embed a conceptualized meaning into the product and service concept, and deliver those to end-users in their design processes?
- RQ 4. How to measure the meaningfulness of product and service for an end-user’s life after launching those into market?

Research questions are illustrated in line with the double-diamond design process which is known as the general design approach made by synthesizing the commonalities across many various design organizations (British design council, 2007).



**Figure 14. Research questions with double-diamond design process (British Design Council, 2007)**

## **3.2 RESEARCH DESIGN**

In order to effectively address the research problems (questions) discussed in the literature review section, this section articulates the research design. As the nature of this study is explorative, the qualitative research method was used, which typically aims at coming to an understanding of “the meaning, not the frequency, of certain more or less naturally occurring phenomenon in the social world” (Van Maanan, 1979). The appropriate methodology among qualitative research is exploratory case study for the phenomenon which is not yet fully understood and no clear boundaries with its context. Yin (2009) defines the case study as: an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. The case study method is ideal when a ‘how’ or ‘why’ question is being asked about a contemporary set of events over which the researcher has no control (Gray, 2018). This allows researchers to introduce the problem or concept to be studied, and perhaps generate hypotheses to be tested. Exploratory case studies also provide the background information necessary to plan a descriptive or further explanatory study.

There are two specific purposes in this case study. Yin (2009) recommends that case study research should be theory-driven, with researchers constructing a theoretical position prior to the study. In the same line with this recommendation, one of purposes is to confirm what works and what does not work with the initial theory about design process of meaning of innovation by cross-case analysis across the case studies. Further, since the research is the almost neglected area of previous researches, the second purpose in this study is to explore and identify a new pattern to construct hypotheses to be tested, which include theoretical and practical implications.

## **3.3 DATA COLLECTION**

The interview is the main source of empirical data in this study. The website information is added to describe the context of the company which interviewees are working. The interviews (Appendix A) were face-to-face semi-structured type which allows for probing views and opinions where it is desirable for respondents to expand on their answers. This is because a phenomenological approach is taken where the objective is to explore subjective meanings that respondents ascribe to concepts. The interviews were based upon the retrospective accounts by those experiencing the phenomenon of innovation of meaning. Such probing may also allow for the diversion of the interview into new

pathways which, while not originally considered as a part of the interview, help towards meeting the research objectives (Gray, 2018). The questions were prepared based on the information from the research objectives, questions and the constructs in the theoretical framework. A digital voice recorder was used wherever possible. Respondents were asked for their permission to use the recorder. All the interviewees were transcribed.

OBSERVED CONCEPTS	COMMON INTERVIEW QUESTIONS
RQ 1 - Designer's perspective about Meaningfulness in Life	<ul style="list-style-type: none"> <li>- How do you define what is meaningful in an end-user's life?</li> <li>- How do you utilize information of meaningfulness in life for new meaning in product and service?</li> </ul>
RQ 2- Creation of new meaning(s) in design process	<ul style="list-style-type: none"> <li>- What kind of researches do you conduct to create new meaning in the design process?</li> <li>- How do you conceptualize new meaning based on the researches?</li> </ul>
RQ 3 - Meaning delivery in design process	<ul style="list-style-type: none"> <li>- How do you deliver new meaning as product and service in the concept design process?</li> <li>- What is the unique design process required for designing new meaningful product and service?</li> </ul>
RQ 4 – Measurement of influencing on meaningfulness in life	<ul style="list-style-type: none"> <li>- How do you verify the meaningfulness of design which person makes sense?</li> <li>- How do you measure the change as a result of your new meaning product and service?</li> </ul>

**Figure 15. Interview question guidelines**

### 3.4 CASE SELECTION AND DESCRIPTION

The selection of the interviewees (N=6) as the source of information for case analyses were critical in this study. The creation of new meaning(s) in the product / service has not been rarely conducted intentionally, and it is not most likely based on formal roles and methods as ethnographic research (Verganti, 2008). The following three conditions are taken into account to select cases / interviewees and conduct the interviews.

- a. A designer who has experienced and intended to design meaning of product or service in the previous design projects.
- b. A designer who has the intention in creating not only value in function or form but also emotional or symbolic value in the design activity of product or service.



In addition, the corporates where the interviewed designers are working are carefully selected based on their unique vision in terms of meaningfulness in persons' life because the theory of innovation of meaning tells that new meaning(s) is driven by the corporate unique vision (Verganti, 2008). Since there were so little known about these conditions before meeting with interviewees, it was necessary during the interview with the experts to ensure that the above-mentioned criteria are relevant.

The research data comprised of six interviews of design professionals in different organizations from consultancy, software product company to research institute. The secondary sources of information were used in conjunction with primary data sources to describe the cases because for most businesses, their website is their 'window onto the world' providing details not just of their products and services, but their chosen image of themselves, their cultural values and 'brand' (Gray, 2018).

No .	Person / Organization	Data Source	Contexts of corporate and interviewee (vision, offering, meaning)
1	Design Entrepreneur / Innovation Lab	<input type="checkbox"/> Design workshop <input type="checkbox"/> Website <input type="checkbox"/> Paper	The vision of laboratory is indigenous and unique in the sense of "increasing positive engagement across different groups", and relevant with meaningfulness of life. The lab has collaborated with industries and students to create real world impacts through utilizing behavior design and social technology for achieving their vision.
2	Design Strategist / Design Consultancy	<input type="checkbox"/> Interview <input type="checkbox"/> Website	The consulting service covers branding, service, user experience, product and retail & space design. The interviewee has experienced in the innovation of meaning in various projects with clients such as a company developing food concepts - meaningfulness related to aspirational consumption, ethical and ecological food-related decision making etc.

3	UX Designer / Company benefits product and service	<input type="checkbox"/> Interview <input type="checkbox"/> Website	The company is a pioneer and market leader in offering the product and service for enhancing well-being of working life. The interviewee experienced the whole product development design especially in user experience, and also has expertise in the motivation design.
4	UX Designer/ Consumer online marketplace company	<input type="checkbox"/> Interview <input type="checkbox"/> Website	The company offers the online marketplace that touches people's everyday lives under the vision of empowering the worlds' economy and promoting sustainability. The interviewee has expertise in the interaction design, cognitive ergonomics and motivation design.
5	Chief Experience Officer / Mobile learning service company	<input type="checkbox"/> Interview <input type="checkbox"/> Website	The company offers the mobile learning service from career, healthy living, sustainability and community., aiming for the learning to be accessible to all with high quality. This mission achieves their vision which allows people all around the world to live happier and more sustainable lives.
6	Service Designer, Insight Researcher / Design Consultancy	<input type="checkbox"/> Interview <input type="checkbox"/> Website	The designer's company offers the design consulting service across various industries especially with the focus on building the digital service. The interviewee has the expertise in human insights with a special focus on future scenarios and the human experience.

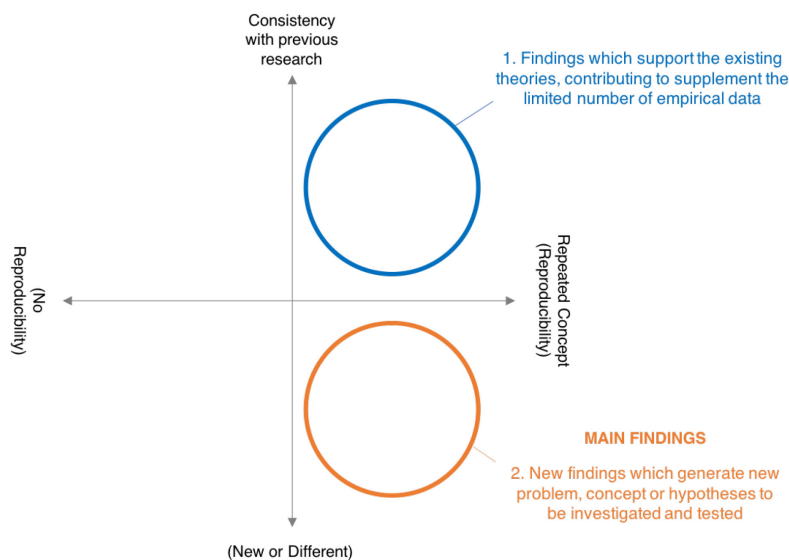
**Figure 16. Profiles of cases**

### 3.5 DATA ANALYSIS

Qualitative data analysis requires to move constantly between inductive and deductive thinking as he/she moves through such stages as identifying code categories and their attributes, developing working hypotheses that describe the relationships among the

categories, refining the hypotheses and forming higher-level generalizations from the data (Glaser & Strauss, 1967). For this research, this principle was used for the whole analysis. In addition, pattern matching was used as the main form of data analysis. Pattern matching is that the patterns to emerge from the data, match (or perhaps fail to match) those that were expected (Gray, 2018).

Further, there are, essentially, two ways in which the case study evidence can be analyzed. First is to analyze the data on the basis of the original theoretical propositions and the research questions that flowed from them. The second one is a descriptive framework, which is used when a case study is chosen for an issue for which an underlining theoretical proposition is not obvious. In this study, the data is analyzed based on the original theoretical propositions to firstly confirm what theory works and what does not work. The findings about the repeated key words or concepts which are in line with the previous researches support the existing theories by compensating the limited number of the empirical data. Further, once the repeated key words or concepts which contradict with the previous researches are found (main findings in this study), it may generate new problems, concepts or hypotheses to be studied and tested. This requires the explanation building whose purpose is to a) construct an explanation for a new or different pattern to reveal its underlining causes, and b) propose what theoretical models, which have not been considered in the previous research are relevant and need to be addressed.



**Figure 17. Data categories and focus areas for analyses.**

The data analyses were consistently structured by using the qualitative data analysis software (Atlas). The use of the software allows us to ensure the consistency of the data analysis procedure, i.e., it is possible to go back to the raw data and the result of each data analysis cycle when necessary. The data structure not only makes it possible to configure

the data into a sensible visual aid, it also provides a graphic representation of how it was progressed from raw data to terms and themes in conducting the analyses (Dennis, Kevin & Aimee, 2013). The data structure in this study is basically constituted of three orders, and the data is analyzed in the category-wise for each research question.

In the 1<sup>st</sup>-order analysis, which follows faithfully with native data (transcribed language data), the key sentences or words were extracted so that the abundant raw information is reduced into more manageable numbers without the subjective interpretation on the original sentences as much as possible. The number of categories still tends to explode on the front end of this study, i.e. 50-100 concepts per the research question. In the 2<sup>nd</sup>-order analysis, the analysis attempts to seek for the similarities and commonalities among many categories in the 1<sup>st</sup>-order analysis across different interviews. This analysis suggests the emerging concepts that might help with describing and explaining the phenomena of innovation of meaning and meaningfulness in life. The particular attention was made on both the emerging concepts that do not seem to be adequate to the theoretical references in the existing literature (dissimilarities with the existing theories) and the repeated concepts, which match with the existing theories (similarities). These analyses ensure the credibility of the process, which eventually reduces the relevant categories to the manageable number for writing up the finding and discussion chapters. In case that there is still needs to identify one more high-level concepts, the 3<sup>rd</sup>-analysis is conducted to seek for the aggregate dimensions (the problem domain) for the finding and discussion, which helps the understanding of the data with arriving at the consensus interpretations. The sample of the analyses processes is illustrated in Figure 18.

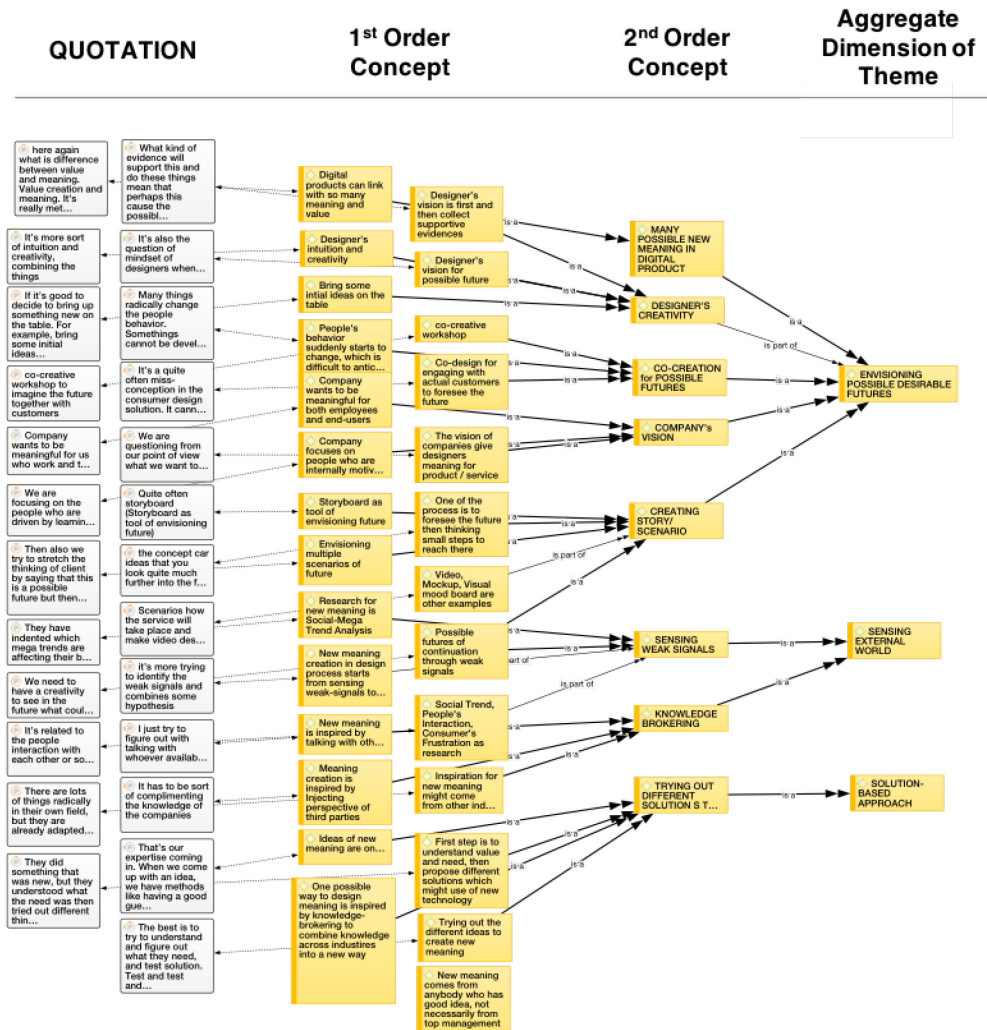


Figure 18. Data analysis structure

### 3.6 RESEARCH PROCEDURE

This study was proceeded and progressed in the following chronological order.

1. Literature Review
2. Research problems and questions
3. Prepare interview guideline
4. Conduct pre-case study
5. Brush up interview questions and focuses
6. Conduct interviews with design experts
7. Data generation - transcription of the interview recording
8. Incorporating the transcribed data into the data analytical software (Atlas)

9. Analyses of data – identification of concept, theme and aggregate dimension
10. Describe findings
11. Generate discussion
12. Draw conclusion

The empirical study process from gathering the data to the showcase of the findings are illustrated in Figure 20.

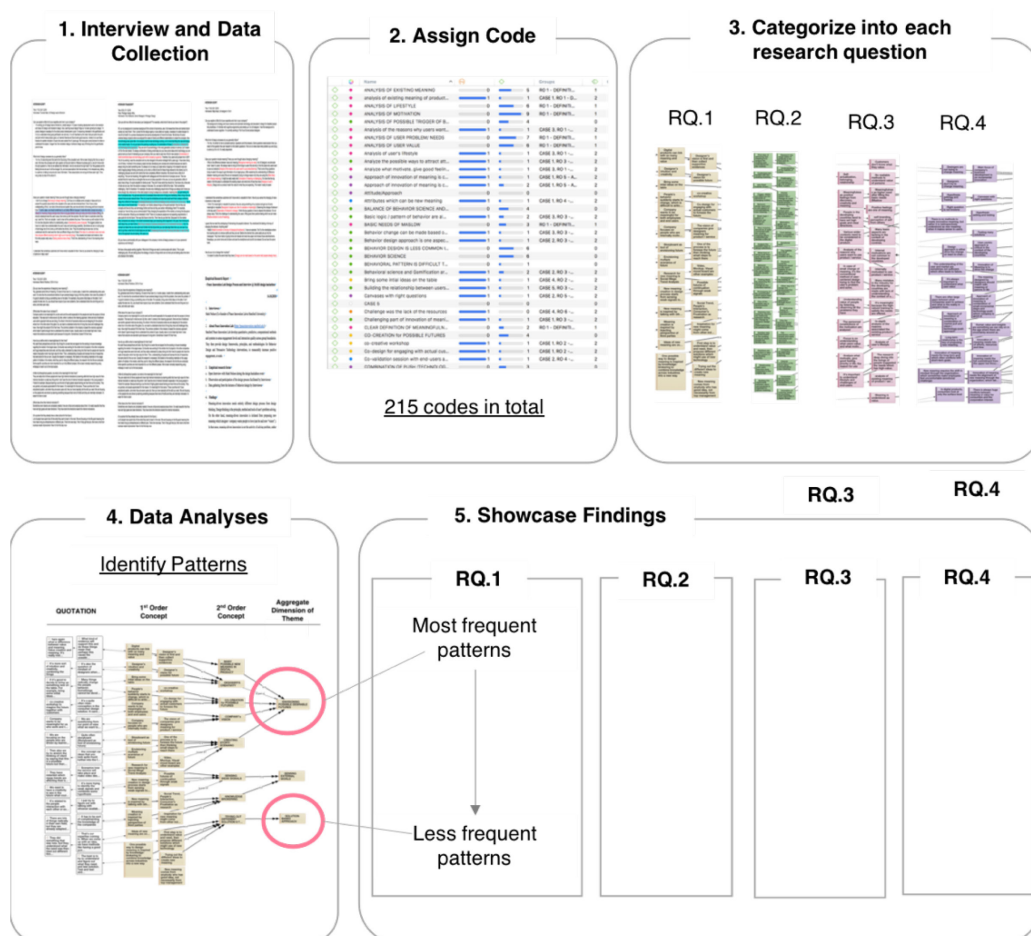


Figure 19. Empirical study processes in chronological order

## 4. FINDINGS

In this section, the findings of the empirical study are shown. The findings are structured based on each research question, and it starts with the quotation from the interviews, which most tell the major contents for the findings. The findings are illustrated from the most frequent patterns which could be observed across the interviews.

### 4.1 INTERPRETATIONS OF MEANINGFULNESS AND SEARCHING FOR IT

Research question 1 -

“How do designers define meaningfulness in an end-user’s life and search for it?”

In the first place, it was observed that designers do not attempt to define “meaningfulness” in an end-user’s life, but try to search for any “meaning(s)” in an end-user’s life. In searching for “meaning(s)”, a pattern seemed to appear across the five interviews among six interviews: they search for “meaning(s)” in life by not relying on directly asking persons about meaning(s) in an end-user’s life but rather exploring, listening and observing all the possible meaning(s) of an end-user’s life in the broader context than the context of using product or service.

#### **NO CLEAR CONCEPT OF MEANINGFULNESS AMONG DESIGNERS**

In the first place, to answer the research question, all the designers interviewed do not try to define meaningfulness in a user’s life. It becomes clear that all the interviewed designers consider that there is no reliable approach to fully comprehend meaningfulness in an end-user’s life, and they are struggling with the fact that there are no proved methods to ensure meaningfulness in an end-user’s life.

*“Everyone is sort of struggling with the fact that it’s hard to use some kinds of methods to understand what users value themselves.”*

#### **SEARCHING FOR ANY FORM OF MEANING(S) IN A USER’S LIFE**

Instead of overly defining meaningfulness in an end-user’s life, all the designers interviewed attempt to search for any form of meaning(s) in an end-user’s life in design practices. Designers understand that meaningfulness in an end-user’s life does not take the standard form which can be rigidly defined in all the contexts of designing products or services. Therefore, designers interviewed do not use the term “meaningfulness” in an end-

user's life, but they search for all the possible meaning(s) in an end-user's life no matter how those meaning(s) are related to meaningfulness in an end-user's life.

### **SEEKING FOR MEANING(S) IN BROADER LIFE CONTEXT**

The common pattern observed across five interviews among six revealed that designers intend to explore all the possible meaning(s) in an end-user's life by listening and observing all the elements which seem relevant with meaning(s) in an end-user's life. This means that designers do not rely on what an end-user talks about meaningfulness in life on the surface, such as an end-user's answer to the question of what is meaningful in his/her life.

*“We don't listen to customers when they say I want this. That's not valuable. I want to hear all the problems they have.... It's more like discipline method of understanding value”*

All the designers interviewed attempt to look for the extensive life contexts and personnel values or beliefs, in order to understand meaning(s) in an end-user's life. Meaning(s) in life was expressed in the different concepts such as motivation in life, human value and urgency in life. During the designer's quest for meaning(s) in an end-user's life, all the designers interviewed attempt to answer a question such as why an end-user behaves in the existing manner. There was no single element commonly used by designers, but the following items are observed across more than one designer.

- Analysis of motivation: What do people (users) feel motivated in their lives?
- Analysis of user needs: What are the user needs (problems, challenges)?
- Analysis of lifestyle: What kind of lifestyle do people have and how is it changed?
- Analysis of existing meaning: What meaning(s) do people associate with existing product / service?

Three designers among six interviews mentioned that meaningfulness concept is understood in a broader sense, related to the higher needs of Maslow's hierarchy of human needs. As the result of the designer's explorations, the following meaningfulness characteristics were highlighted by at least one of designers: belonging, relationship, positive emotions, discovery, creativity and self-branding.



## **CREATING A HYPOTHESIS ABOUT MEANINGFULNESS AND UPDATING**

An outcome of exploring meaning(s) in an end-user's life is the hypothesis about what he / she finds meaningful in life, which are investigated and tested in the latter stage of design processes. Three of six interviewed designers mentioned that their design activities iteratively brush up hypotheses about what an end-user finds meaningful in life by exploring and testing. This means that the designer's hypothesis about meaningfulness in an end-user's life is updated along with the progress of design activities. It was called as the "design guess".

*"It's a design guess. Good design guess is to test and have a better guess."*

Three of six interviewed designers explained that there are always limitations of time and budget to search for meaning(s) in an end-user's life. Due to this reason, designers attempt to conduct quick searches for meaning(s) in an end-user's life and create the best possible guesses about meaningfulness in an end-user's life, and conduct quick tests of those guesses.

## **CONCEPT OF MEANINGFULNESS IS CLEAR IN DEVELOPING COUNTRY**

One of the interviewed designers retrospectively talks about designing digital products for end-users in Africa where it can be considered as so-called developing countries. It was mentioned that the concept of meaningfulness in an end-user's life can be clearly defined in those countries by simply asking what is meaningful in his/her life. This was explained that those living in the developing countries have not met with their basic needs, and they know the clear direction what they want to become in the future. In other words, it was expressed that those living in the developing countries are internally motivated. In this context, designers listen to an end-user about meaningfulness in his/her life, and they can rely on what he/she answers to the question.

*"In so-called developing countries, it's really beautiful that they have set high goals and clear directions..... Internal motivation is really key thing which I don't see this kind of internal motivation especially in the young people in Finland for example."*

This design approach used in the developing countries differ from design practices in the so-called developed countries such as Finland. A designer looks for the definitive form of meaningfulness in an end-user's life living in the developing countries by simply listening and observing human needs, whereas, designers search for unclear meaningfulness model in an end-user's life living in the developed countries by exploring the broader life context.

## 4.2 CONCEPT DESIGN OF NEW MEANING(S)

Research Question 2 -

“How do designers conceptualize new meanings of products and services in their design processes?”

In order to innovate meaning(s) in a product or a service, the designers adopt the role of creating a new concept of product and service. How do designers conceptualize new meaning(s) in their design processes? The existing theory describes this process starting with having an inner vision toward what a designer or a manager would like people to love. But, in the design practice, how is it actually initiated and where to start the research? Or what challenges do they have in designing meaning and how to overcome those?

### **TWO APPROACHES: REACTING TO A CHANGE OR DRIVING A CHANGE**

There was no single common design process to conceptualize new meaning(s), observed across all the interviews. However, there are two general approaches how designers conceptualize new meaning(s): either reacting to a change or driving the change. The change is related to change in a social and cultural dynamics, such as consumer's behavioral pattern, daily routines and life style. In the first case, designers do not attempt to change meaning(s) of a product or a service. Rather, they try to correctly understand the existing user problems about the existing product or service, and they come up with new solutions for the problems. This approach possibly leads to a minor update on meaning(s) of the product or service which end-users associate with. On the other hand, in the second case, designers intend to drive a change by two processes. Initially, designers sense various weak signals which may affect the socio-cultural change in future. Then, designers depict the possible future scenario based on the gathered weak signals, and envision meaningful experience for an end-user's life through products and services in the scenario. This design approach may create a comparatively large change in meaning of products and services.

*“As a company, we always sort of trying to drive the change or just react to change.”*

These two design approaches are practiced depending on the intended scale of meaning change. The smaller change of meaning in a product or a service corresponds to the approach of reacting to the socio-cultural change. On the other hand, a larger change in meaning corresponds to the approach of driving the socio-cultural change. These two approaches are described in the following paragraphs.

## **DESIGN APPROACH FOR REACTING TO A CHANGE**

It was noticed that it is not common for designers to change meaning(s) of a product or a service. Rather, their approaches are intended for answering user needs, which means an improvement without any intention to change existing meaning(s) of a product or a service. This design philosophy was observed across five designers interviewed among six. This design approach possibly leads to a slight change of meaning(s), with which consumers interpret and associate. As a result, the small change of meaning(s) has occurred in this case in the design process for answering the user needs.

*“I don’t try to change meaning. Our focus is to validate some concepts or ideas and try to answer the question about what is valuable to the users and what motivate them.”*

This approach represents the so-called human-centered design (HCD), which has been considered as the most typical design approach in the design. In this process, the designed concept comes from solution(s) for the existing user problems. In order to solve the user problems, the ideas for a solution can take a different form from the previous product or service, i.e., the idea using the emerging technology. As a result of conceptualizing a new solution, the concept sometimes triggers new meaning(s) in a product or a service even without the intention of designers to change meaning(s).

## **DESIGN APPROACH FOR INTENTIONALLY DRIVING A CHANGE**

The design approach to create new meaning(s) intentionally was identified driving the change rather than reacting to a change. This approach is considered as a different model compared with the human-centered design approach which answers to the user needs.

*“Many things radically change the people behavior. Some things cannot be foreseen before happened. Something suddenly started developing, which we did not anticipate.”*

*“It’s more trying to identify the weak signals and combines some hypothesis”*

In this approach, there are three main activities to conceptualize new meaning(s) in their design processes: sensing signals of a socio-cultural change, creating hypotheses (scenarios) about what the world looks like in the future, and conceptualizing new meaning(s) in the envisioned future life context.

## **SENSING SIGNALS OF CONTEXT CHANGE IN AN END-USER’S LIFE**

The empirical findings show that designers firstly attempt to sense various signals around them to identify the general trend for future life context. In specific, designers attempt to

detect various weak signals of changes in an end-user's life context. The weak signals include social mega-trends, lifestyle, value, the way of interacting each other and the influence of technological changes on an end-user's life. These weak signals are considered as just the signals which may lead to various possible future scenarios.

## **CREATING SCENARIOS IN FUTURE LIFE CONTEXT**

It was commonly observed among three of six designers that designers attempt to create scenarios from weak signals. This process makes full use of designers' creativity to foresee the future to answer what could be the possible continuation of these weak signals. This future thinking is based on not only just a creativity but various collected weak signals (data) about implications of the socio-cultural changes.

*“We need to have creativity to see in the future what could be the continuation of these weak signals”.*

Designers use the form of 'story' to foresee and express a future life context by utilizing the tools such as storyboards, scenarios and mood boards. The co-creation workshop with the end-users is also used to collaboratively envision the life context. Further, when foreseeing the future, another source of inspirations come from other industries, which already have adapted some socio-cultural changes because these adapted changes most likely happen in the other industries in the future as well. To conceptualize new meaning(s), designers engage the actual customers to foresee the future (co-creation session). In the co-creation session, designers bring the sources of envisioning the future, i.e., the collected quantitative and qualitative data of weak signals.

## **CONCEPTUALIZING NEW MEANING(S) BY STORY (SCENARIO) IN FUTURE**

By creating the future scenario allows designers to create new meaning(s) of a product or a service in the future life context. In this design process, four of six designers interviewed highlight that designers look for the answer to the question what is meaningful for an end-user's life in the future story. The concept of new meaning(s) in a product or a service is expressed in the form of story by using videos, mockups, visual mood boards and so on.

*“As design actor, we need to be creative one who sees into the future not only asking and observing and understanding. Being a brave and somebody needs to create the future.”*

## **ALIGNMENT OF NEW MEANING(S) WITHIN ORGANIZATION**

In addition to the design practice itself, an essential activity of conceptualizing new meaning(s) is to align new meaning(s) with the internal stakeholders. Across four interviews among six, it was found that the challenges in creating new meaning(s), especially large meaning changes, may result in conflicts. Designing new meaning(s) is often conflicted with the short-term business goal, which requires short-term profits. New meaning(s) in a product or a service requires long-term efforts and time to actually include them when designing a product or a service with new meaning(s) compared with the same or smaller change in meaning(s).

*“Sometimes company want to create new meaning, but it’s conflicted with the short-term business goal. The biggest conflict is the short and long-term goals.”*

*“Lots of company don’t want to be the first one to bring into the market. This can be expensive or miss of strategy or uncertainty of radical change.”*

In order to conceptualize new meaning(s), designers need the alignment of new meaning(s) with various stakeholders’ opinion especially with executives and managers who have the decision-making power for the business strategy. The corporate which bring new meaning(s) for the first time to the market have the risk of being imitated by competitors. In this sense, designers understand that they require the alignment and support from the corporate executives and managers to conceptualize new meaning(s) in a product or a service.

## **4.3 OFFERING NEW MEANING(S) TO END-USERS**

Research Question 3 –

How do designers deliver new meaning(s) through the product / service to the end-users?

Meaning(s) in a product or a service are dependent upon the interpretation of the users. In order to communicate intended new meaning(s) through a product or a service, how do designers embed those new meaning(s) into the product or service concept? How do designers attempt to deliver new meaning(s) to the end-users through a product or a service?

## **DESIGNING MOTIVATION FOR DRIVING BEHAVIORAL CHANGE**

The interview analyses showed that the common philosophy shared across interviews was to induce a behavioral change toward the direction of intended new meaning(s). When designers design product or service concepts from the conceptualized new meaning(s), designers bear in mind that a successful innovation of meaning(s) invites users' routines for the designer's intended manner as a result.

*"Most difficult things are to get out of auto drive.*

*They get used to do in the certain way. Difficulty is to change their routines."*

As a common feature repeatedly observed across interviews – and the challenging part of designing product or service concepts with a new meaning - is that the existing users have a rigid behavioral pattern, which is difficult to intervene. When meaning(s) in a product or a service do not change or change only slightly, it is expected that users' behavior keeps the same pattern in purchasing or using those products or services. On the other hand, in the case that new meaning(s) designed in a product or a service is delivered to the users, i.e., users purchase and use new meaning product or service, users' behavioral patterns would be directed toward the intended manner of designs as a result. To overcome the challenge and effectively deliver new meaning(s), designers intentionally motivate the user behaviors into the intended new meaning(s) of product or service concepts.

## **DESIGNING TRIGGERS TO INVITE THE MEANINGFUL BEHAVIOR**

Four of the six designers interviewed attempt to motivate the end-user's behavior into a hypothesized meaningful manner because designers understand that the successful offering of a new meaning(s) to the end-users change the end-user's behavior as a result. There are three design activities found across at least three designers interviewed, how to design motivation of the end-users for the intended use of a product or a service with a new conceptualized meaning(s). First, designers search and explore the possible triggers of user behaviors. The research items include user habits, user motivations, routines, user lifestyles and usage patterns of a product or a service in their lives with reasons. The purpose in this research is to explore and identify possible ways of attracting users' attention in the intended manner, where designers get the inspirations of effectively delivering new meaning(s) in a product or a service. Second, based on the insights from the trigger analyses, designers make quick prototypes to try out various ideas of driving a change in the end-user's behavioral pattern. In essence, designers attempt to influence on the end-users' five senses and/or design environment around the end-users. In specific, the ideas of prototypes include: designing something inspiring five senses such as smell, environmental design (space design), delivering a story and emotional design. Three of six designers

referred to the theories of behavioral science or gamification as the source of inspirations to invite the user attention. Further on, it was highlighted that the basic behavioral pattern of humans does not change, and it is possible for designers to design new meaning(s) inviting only the tiny change of habits.

### **BALANCING ACT: DRIVING A CHANGE AND OFFERING MEANINGFULNESS**

The design approach of driving the user behavioral development does not necessarily match with the hypothesis of meaningfulness in an end-user's life. It was found that designers attempt to balance between what designers think an end-user finds meaningful in life and what he/she feels motivation to use new meaning product or service. Three of six designers interviewed consider that designing motivation resorts to the short-term feeling of the end-users, such as the sense of urgency to use a product or a service. Only designing the short-term motivation does not guarantee the meaningfulness of a product or a service for an end-user's life. Therefore, designers design new meaning(s) of products or services in the long-term perspective, which can balance between designing meaningfulness in an end-user's life and designing short-term motivation to use.

*“If it's missing balance, it would not work. It's design guess. Good design guess is to test and have a better guess. It hopefully gives balance in the long run.”*

### **TRANSPARENCY OF NEW MEANING IN ORGANIZATION**

To deliver new meaning(s) through a product or a service, it is essential for designers to communicate and align a new meaning(s) concept with the stakeholders in the whole internal organization especially from the upper level management.

*“If you are in huge organizations, everyone has different metrics like what my department sells this much, and the other department has different shoes. That might be conflicting. Of course, then it's difficult to succeed because you need the full commitment from the upper level through the organization.”*

In the design process of the organization, not only a designer who conceptualized a new meaning(s) but various other actors involve in the actual design process. Two of designers interviewed highlighted that designers who conceptualized new meaning(s) need to align its meaning(s) with the internal stakeholders especially from the upper level management. It is easy to lose the core of new meaning(s) during the design process in the organizations unless all the stakeholders who are involved in the design process understand the new meaning(s) concept in the same manner.

*“When you want to make really meaningful, you shouldn’t surprise anyone. It takes lots of time and efforts. Otherwise you ended up creating easy to copy which anyone can make.”*

The transparency of new meaning(s) across the organization is the key of delivering the new meaning(s) to the users though it sometimes requires the engagement from the upper management beyond the scope of designers. It takes lots of times and efforts to explain why designed new meaning(s) is important for the organization. Designers align their designed new meaning(s) with the whole organization in their design processes, to communicate that new meaning(s) to the users through the product or the service.

#### **4.4 EVALUATION OF MEANINGFUL PRODUCTS AND SERVICES**

Research question 4 –

How to measure the meaningfulness of product / service for an end-user’s life after launching into market?

In order to design new meaning(s) which contribute to meaningfulness in life (of the end-users), how do designers evaluate their creations such as product or service with new meaning(s)? After launching a new product or service of new meaning(s), how is it possible to ensure that new meaning(s) contribute to meaningfulness in an end-user’s life?

##### **UNCOMMON PRACTICES TO EVALUATE MEANINGFULNESS**

First of all, it was found that there are no common practices for designers to evaluate or measure meaningfulness in an end-user’s life after launching a product or a service to the market. In the common design practice, designers do not engage in the process after completing the product or service design. In most of cases, designers are only informed about the outcome of the results in the business, such as the number of sales, profits and active users. Notwithstanding the fact that there are no observed common practices to measure meaningfulness, there are two general approaches observed across interviews to evaluate meaningfulness of their product or service for persons’ life in some cases.

##### **TWO GENERAL APPROACH OF EVALUATING MEANINGFULNESS**

First approach is the qualitative research method to test the attributes, which users associate with the product or service of new meaning(s). By comparing the attributes in the previous product or service with new ones, designers attempt to make sure that their designed new meaning(s) are interpreted by users in the same manner as what was their intention. To conduct the user testing, a co-validation session is prepared, and designers



engage the same persons as in the co-creation session to compare the difference of old and new meaning(s) in the qualitative way. Second, it is possible to evaluate the meaningfulness by observing and measuring the change of behavior in terms of whether the behaviors are directed toward in the intended manner. As discussed in the previous section, the successfully delivered new meaning(s) bring about a change in the user's behavior to some extent. Four of designers interviewed evaluate meaningfulness in a product or a service for an end-user's life by comparing an end-user's behavior before and after testing their product or service. For example, in the case of an online learning company, which provides a mobile learning platform for people, it was mentioned that meaningfulness can be measured by the numbers of users who learned new skills or knowledge. In this example, the measurable indicator for meaningfulness is set and retrospectively understood as meaningful for users. It is evaluated as meaningful if it makes sense to users and users change their behaviors in the intended manner. In another example, a designer interviewed define meaningfulness in an end-user's life by a measurable indicator in the early stage of the design process, and the indicator is used throughout the whole design process to ensure that the design direction and the design outcome contribute to meaningfulness in an end-user's life.

## **5. DISCUSSION AND CONCLUSIONS**

The purpose of this section is to discuss on the findings by referring to what was already known about the research problem being addressed in this study and explain the reasons and logics of new insights that emerged as the result of the study. The structure of the discussion parts consists of the following sub-sections: 1. Main findings in this study, 2. Benefits of this study, 3. Comparison with other studies, 4. Practical implications, 5. Study limitation and future research perspectives.

### **5.1 MEANINGFULNESS IN DESIGNING PRODUCTS AND SERVICES**

#### **5.1.1 CHALLENGES IN DESIGNING MEANINGFULNESS**

This study investigates the design approach in practice, which creates new meaning(s) in products or services, contributing to the meaningfulness in an end-user's life. As an empirical study, the semi-structured interviews were conducted with six design experts who have experiences in intentionally creating new meaning(s) in products or services. The results revealed the main design challenges and those design practices that create new meaningful meaning(s) in a product or a service.

The first identified challenge is that there is no definitive concept of meaningfulness in an end-user's life because the end-users by themselves do not know what is meaningful in their lives especially in the context of the developed countries where the basic needs are mostly satisfied. This challenge could be explained in the psychological literatures that the diversity of values and options in life make it difficult for people to clearly find meaning in life. To design new meaning(s) to overcome the challenge, designers attempt to hypothesize a meaningfulness in an end-user's life by (a) searching for any form of meaning(s) in the broader life context of an end-user, (b) foreseeing the possible future life context, (c) creating a hypothesis of what is meaningful in the envisioned life context, and (d) validating the hypothesis along the design process. Design thinking in theory emphasizes on (a) outside-in approach searching for any form of meaning in an end-user's life. Design-driven innovation in literature puts an emphasis on (b) inside-out approach creating a vision in future. The meaningfulness design approach in practice is a hybrid approach of combining both inside-out and outside-in approach to create innovative new meaning in products or services.

The second challenge is that the end-users have rigid habits to use products or services of the existing meaning(s). Therefore, the behavioral change of end-users is required to let them use products or services designed with new meaning(s). Designers intend to motivate the end-users and invite them into using a product or a service with new meaning(s) by (a) exploring possible triggers of the end-user's behaviors and (b) making and testing the behavioral change prototypes without losing the balance between meaningfulness of a product or a service and driving a change. The existing design literature does not highlight the approach of driving a behavioral change when designing new meaning in products or services. This could be explained that the previous researches focused on the process of constructing new meaning rather than the process of how to design product or service concepts based on new meaning.

The third challenge is that new meaning(s) in a product or a service are easy to be lost because various actors involve in the design process to deliver a new meaning(s), and/or new meaning(s) are often conflicted with the existing corporate goal, which aims at making short-term profits. Designers who conceptualized a new meaning(s) align with those internal stakeholders who engage with designing and delivering a new meaning(s) product or service. Further on, designers often require the full commitment from the top management to execute new meaning(s) in a product or a service beyond the expected scope of design itself, which requires the alignment with the corporate strategy from the long-term perspective and the corporate's risk-taking to launch new meaning(s) into market. This finding is in the same line with the existing theory of design-driven innovation that emphasizes on the importance of management perspective and engagement when innovating meaning in products or services.

### **5.1.2 APPLICATION OF PSYCHOLOGICAL MEANINGFULNESS**

The psychological basis of meaningfulness is not used as a common practice among the interviewed designers when they design new meaning(s) in products or services. Further on, designers do not attempt to completely define meaningfulness in an end-user's life, rather they explore what constitutes meaningfulness for him or her in the existing context during the design process and hypothesize a new meaningful meaning(s) in the envisioned future life context. However, one designer interviewed took a different approach when designing new meaning(s) in an end-user's life. The approach in the interviewed designer was driven by a predefined vision in design, which came from the unique corporate vision. To be more specific, the designer created new meaning(s) based on the corporate vision about a meaningful behavior of an end-user in future, i.e., the positive engagement across

at least two different groups. The designer came up with a product or a service which induces a behavioral change of an end-user toward the pre-defined meaningful manner, leading to a new meaning(s) of a product or a service as the result. This approach suggests a possible design approach for meaningfulness, starting from creation of a new vision about a new ideal meaningful experience in life based on the psychological meaningfulness, and designing a product or a service that invites the end-user's behavior into it. For example, by referring to the constituents of psychological meaningfulness, a new meaning(s) can be defined as supporting the engaged interaction between parents and children (*engagement* and *connectivity*), and designers' attempt to design a product or service which enable them to interact in the more engaged manner. Desmet & Hassenzahl (2012) proposes the concept of possibility-driven design towards enhancing happiness in an end-user's life as an alternative approach to the problem-based design approach. In this theory, the possibility-driven design approach was introduced, which focuses upon not the apparent problems to solve but finding possibilities of enhancing and re-scripting the status-quo toward happiness. In the same line, the finding in this study proposes meaningfulness design approach is possibly driven by the pre-defined ideal meaningful experience toward enhancing psychological meaningfulness in life. The findings also suggest that the meaningfulness design is challenging in the sense that the end-users are familiar with the existing meaning(s) and have the rigid behavioral pattern, which requires that the end-users are already receptive and motivated to change their routines, have ability to do it, and designers design the appropriate triggers to initiate a new meaningful behavior. Fogg (2009) proposes a behavior model for driving a change into an intended manner. The literature explains three factors to understand a behavioral change consisted of motivation, ability and trigger. The finding suggests that designers have in their minds of this behavioral model when designing the targeted meaningfulness in an end-user's life. To enable the application of psychological meaningfulness in design, the finding indicates that designers need to provide (balance) both the short-term motivation to use a product or a service and what the end-users truly find meaningful in the long run. Since the psychological meaningfulness is achieved in the time-scale of life much longer than the limited experience in using a product or a service, it requires designers create the system for the end-users to use a product or a service in the sustainable manner until a new meaningful experience forms a new behavioral pattern. In designing for meaningfulness in life, the finding suggests the necessity of shifting the focus in design from the short-term product or service experience such as emotional design on the long-term meaningful experience in life. This point differentiates meaningfulness design approach aiming for enhancing the long-term experience from designing for experience generally focusing on short-term experience. In the same line, Desmet (2012) explores in how design contributes to human flourishing directly, and proposes the activity-focused design rather than

product-focuses design. This design for well-being approach starts from conceptualizing activities that include ingredients of happiness-enhancing activities, and then design technology or products that inspire and enable users to engage in these activities which focuses on long-term life appreciation.

### **5.1.3 INTEGRATION WITH DESIGN-DRIVEN INNOVATION IN THEORY**

This study addresses the design practice to create a new meaning(s) in a product or a service. The existing theory of design-driven innovations (innovation of meaning) addresses the corporate strategy and management perspective to create a unique vision (meaning) of a product or a service. This section addresses three key features of design-driven innovation in theory comparing with the findings in order to discuss what findings confirm or disconfirm the existing theory, and emerge as the emerging concept.

Firstly, design-driven innovation explains the main driver as the future in vision, and emphasizes on the inside-out approach which expresses the individual's (such as designer and manager) internal vision to create the vision. The findings confirm that the driver of creating new meaning(s) in product or service is the vision in future as theory describes. On the other hand, the finding suggest that designers do not take the simple inside-out approach, rather they use the combination of the outside-in and inside-out approaches to create new meaning. To be more concrete, designers sense the outside various signals such as social megatrends and people's behavioral pattern change in order to foresee the possible future scenario of the end-user's life context. In addition, designers explore the end-user's current meaning(s) in life, value and lifestyle to envision the possible new meaningful experience in the future. Based on these external information (outside-in), designers create their own visions about new meaning(s) in an end-user's life by envisioning the life context and hypothesizing a new meaningful experience in the future story (inside-out).

Secondly, design-driven innovation in literature explains that it requires the re-framing of the existing context (radical change in socio-cultural context) rather than creating meaning within the given frame. In the same line, the findings confirm that designers attempt to propose a new meaning(s) of a product or a service to the end-users in the future living context beyond the existing context. As an emerging concept, the finding suggests that the behavioral design approach would be utilized to drive an end-user's behavioral change toward a newly defined meaningfulness in the future life context. This drives a socio-

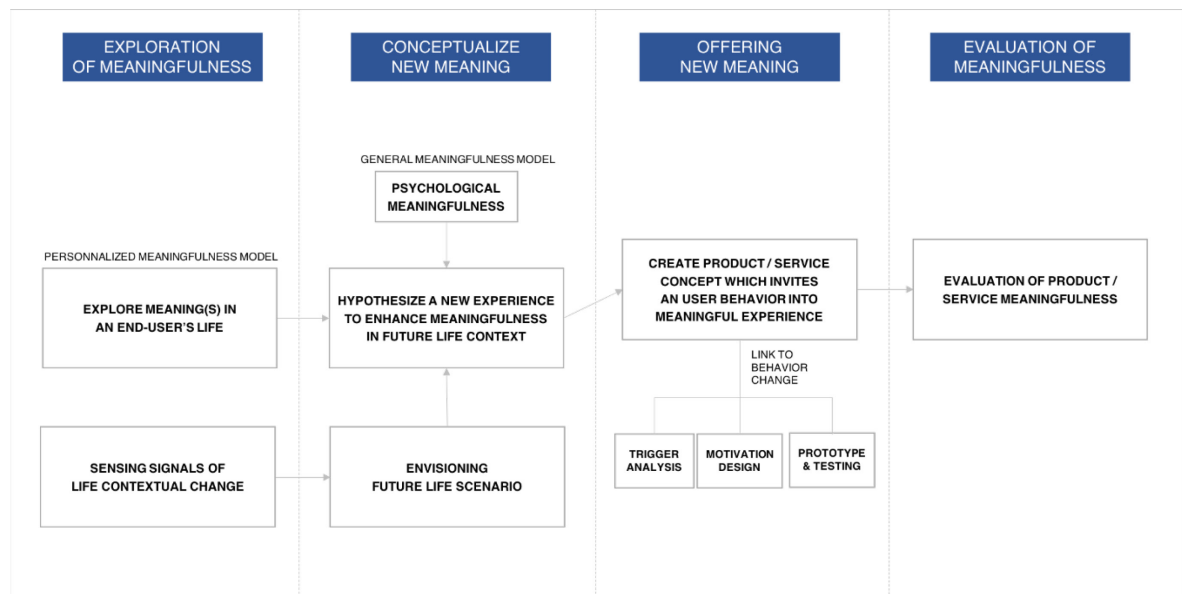
cultural contextual change toward the intended new context as the result. The behavioral design approach was also called as motivation design including the activities of designing an end-user's behavior trigger, motivation and ability.

Thirdly, the design-driven innovation in theory addresses the management and corporate's executive perspective, which implies the key driver of design-driven innovation is the managerial activity more than the design operational activity. The finding confirms that designers need to gain the managerial support which sometimes exceed the original scope of designers, when designing new meaning(s) in product or service especially completely different from the existing meaning(s). To overcome the challenge, designers need to align with the top management in order to take the big risk considering lots of resources, time and budget to actually design new meaning(s) products or services. Further, designers communicate the conceptualized new meaning(s) with all the internal actors involved in the whole design processes in order not to lose the new meaning(s) during the design process. The findings suggest that meaning(s) in a product or a service affects the corporate meaning such as corporate identity, vision and mission, which are the core philosophy of the corporate. This finding underpins that designers need to align new meaning(s) with all the stakeholders especially the corporate management to deliver the new meaning(s) to the end-users, which is also related to the corporate brand strategy.

## **5.2 PRACTICAL IMPLICATIONS – PROPOSAL OF MEANINGFULNESS DESIGN APPROACH**

This section describes how to benefit from this empirical study when applying the meaningfulness design approach into practice. From a designer's perspective, there is no established way of creating a new meaning(s) in products or services to enhance meaningfulness in an end-user's life. Designers are generally not conscious of the concept of psychological meaningfulness in an end-user's life. It turns out that designers have their practices to create a new meaning(s) in a product or a finding which the end-users may find meaningful although designers commonly do not pay attention to the variety of meaning(s) in products or services. The empirical finding reveals the common design challenges and their design know-hows in designing a new meaning(s). In addition, the empirical finding implicates that the concept of psychological meaningfulness can help designers with constructing a hypothesis of a new meaningful experience corresponding with the psychological meaningfulness as discussed in the section 5.1.1. By synthesizing both the designer's practice which creates a new meaning(s) in a product or a service and

the human's psychological meaningfulness in theory, the guideline of meaningfulness design can be formed. The brief model of meaningfulness design is presented in Figure 20.



**Figure 20. Meaningfulness design model**

This model starts from two research activities: the exploration of meaningfulness in an end-user's life and the sensing signals of life contextual change. The purpose is to understand an end-user's meaningfulness in the existing context of life, i.e., user needs, value and lifestyle. Another purpose in this phase is to gather information which affect the context of life in future, i.e., social trends and cultural changes. Based on the researches, in the second phase, designers envision the future life scenario and hypothesize what is meaningfulness in an end-user's life. This phase combines both the fact-based understanding of the existing contexts researched in the first phase and the designer's creativity to foresee the future meaningfulness in an end-user's life. To increase the probability of matching the new meaning with psychological meaningfulness, the general constitutes of psychological meaningfulness can be referred as the direction of ideating a new meaning in the envisioned life context. In the third phase, designers create a product or service concept based on the hypothesized new meaningfulness. The product or service concept is developed to invite an end-user's behavior into a hypothesized meaningful experience, which is closely linked with the design of behavioral change. This phase should provide not only a long-term user value based on a new meaningful experience but also a short-term motivation (experience) to use a new product or service, and balance both of them. In the last phase, the hypothesized new meaning(s) and its contribution to enhance psychological meaningfulness are evaluated along with the design activities, and designers repeatedly update product or service concepts to ensure the positive impact on

meaningfulness in an end-user's life. From the management point of view, the finding suggests that a conceptualized new meaning(s) should be carefully aligned within the internal stakeholders across departments and disciplines so that designers effectively offer the conceptualized new meaning(s) to the end-users. This means that designers require the commitment from corporate's management and other internal stakeholders when designing new meaning(s) especially radically different from the existing meaning(s) in a product or a service. It's worth highlighting that the branding perspective needs to be addressed in the design processes in the sense that the brands fulfill the essential role in carrying meaning of products or services in the long-run.

### **5.3 EVALUATION OF THE STUDY**

This study attempted to enhance the validity by conducting the systematic data gathering and analyses in the consistent manner without adding unnecessary bias. Further, the study illustrates the findings in the order of pattern emergence, which could emerge as the common patterns observed across designers in order to increase the credibility of the empirical findings. Since this study conducted the interviews with the limited number of the six designers, this study is seen as the first study, which needs further empirical research in order to identify clear patterns of design approach of creating new meaning(s) in products or services for psychological meaningfulness. The interview methods might have the limitation to uncover all the aspects of the meaningfulness design approach. It may be needed to ensure the findings through the different methods of investigations because the interviewing with designers did not necessarily provide clear answers to the questions such as the designer's interpretation of psychological meaningfulness. The possible research methods would be the case analyses of the specific products or services, which link with the concept of psychological meaningfulness in an end-user's life. The other approach would be the analyses into the observation of the hands-on process of designing new meaningful meaning in products or services.

### **5.4 FUTURE RESEARCH CHALLENGES**

This study focused upon the designer's perspective in designing new meaning(s) to enhance psychological meaningfulness in an end-user's life. The empirical finding suggests that designers themselves do not have the established way of understanding meaning(s) and meaningfulness in an end-user's life. In the literature review, it also turns out that the relationship between psychological meaningfulness in life and a product's or a service's meaning is not well studied. Therefore, the future research challenge would be



the investigation into the end-user's perspectives in perceiving meaning(s) in a product or a service in relation with their meaningfulness in their lives. By integrating both perspectives of the designer who offers meaning (this study) and the end-user who receives meaning, the meaningfulness design approach would be developed further. The other future research perspective would be to focus on the specific cases of products or services, which could enhance meaningfulness in an end-user's life. This study collected the empirical data from designers who have the experiences in designing any meaning(s) in products or services. The findings show that designers are not necessarily conscious of the variety of meaning(s) no matter what meaning contributes to meaningfulness in an end-user's life. By conducting the empirical studies focusing on the meaningfulness in an end-user's life as new meaning(s) in products or services, the findings and discussions in this study would be verified and developed further. From designer's perspective, the process of seeking for new meaning in product or service is relevant with the concept of abductive reasoning rather than inductive or deductive reasoning. The future research into the application of abductive reasoning in constructing new meaning provides the insights on the approach of intentionally designing new meaning in product or service. Further on, this study focuses upon a designer's perspective. Still, it turns out that typically there is a development team of various expertise and the role of multidisciplinary may play an important role. The future research needs to investigate not only a designer's perspective but multidisciplinary viewpoint including technology and business perspective to create new meaning in product or service.

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## A. APPENDIXES

### INTERVIEW THEME

#### ■ Common Questions:

- RQ 1 – Designer’s perspective about meaningfulness in an end-user’s life
  - ✧ How do you define what is meaningful product / service?
  - ✧ How do you define meaningfulness in an end-user’s life and how is it related to your design?
  - ✧ How do you utilize knowledge or information about meaningfulness in an end-user’s life for new meaning(s) in product or service?
- RQ 2 - Design process of creating new meaning(s)
  - ✧ How do you conceptualize new meaning from meaningfulness in an end-user’s life?
  - ✧ What kind of research do you conduct to create new meaning?
  - ✧ In what ways do you use your research into making new meaning?
- RQ 3 - Design process of offering new meaning(s) to an end-user
  - ✧ How do you design product / service that deliver new meaning(s) to an end-user?
  - ✧ How do you design product / service which people get to accept and use new meaning(s) in product/service?
  - ✧ How do you communicate new meaning(s) to an end-user through the product or service design?
- RQ 4 - Evaluation of new meaning in product or service from the perspective of meaningfulness in an end-user’s life
  - ✧ How do you verify the meaningfulness of design which person make sense of?
  - ✧ How do you measure the change or impact as a result of your new meaning product / service?

As the semi-structured interview, the subsequent questions are asked to explore each research question.