HONG KONG DESIGN MANAGEMENT ACADEMY CONFERENCE 2017

RESEARCH PERSPECTIVES ON CREATIVE INTERSECTIONS

Design-inspired Foresight: Strategic foresight techniques for preferable futures

BUHRING Jorn H

The Hong Kong Polytechnic University, China
joern.buehring@polyu.edu.hk
doi: 10.21606/dma.2017.48

The external environment in business is becoming increasingly a major source of uncertainty, especially for decision-makers in charge of sustaining the advantage of the organization over time. While tools and practices have been developed to envisage likely evolutions of trends, this paper is motivated by our limited understanding of how designers and inter-disciplinary innovation teams consider desirable futures, especially, when the planning horizon is 5, 10, or even 15 years. Accordingly, this paper engages with the literature to present different perspectives between strategic planning in business, and foresight as emerging activities in strategic design. A design-inspired foresight approach is presented through applied research, where the author employed qualitative data collection and analysis techniques (Delphi, Three Horizons scanning, and futures scenarios building techniques) in a Financial Services industry study to the year 2030. By engaging decision-makers in futures thinking, the value of foresight in business and design as preferred-change provoking, is supported through lessons from this futures study as an emerging practice of foresight in design.

keywords: strategic design; managing uncertainty; design-inspired foresight; desirable futures

Introduction

The external environment in business is becoming increasingly a major source of uncertainty, especially for decision-makers in charge of sustaining the advantage of the organization over time. Whether they are leaders in organizations, entrepreneurs, or designers responsible for the strategic direction of the enterprise, looking further into the

future is essential for navigating inevitable change, and for envisaging next-next-generation of product or service propositions. That is, making decision based on simply projecting today's market trends into the future is no longer possible (Saritas & Smith, 2011; Vecchiato, 2015).

Meanwhile, progressive organizations have noted the favourable use of design principles applied to problem-solving, sparking the popularity of design thinking processes and applications toward transformative innovations in a global economy (Dunne & Martin, 2006; Oster, 2008). Generally, design and innovation has become increasingly synonymous in both meaning (e.g. design thinking) and reach (e.g. strategy, business models, products, services, and systems). Indeed, Design is now being understood by its totality of activities and the competencies spanning across innovation to strategic decision-making. Moreover, as are the dependences on interdisciplinary stakeholders who collectively are responsible for delivering sustainable value propositions that ensure the organization's future (Bohemia, Rieple, Liedtka, & Cooper, 2014; Lojacono & Zaccai, 2004).

This development, as scholars from diverse disciplines have proposed, calls for a deeper understanding of future perspectives and the methodologies, methods, and approaches needed to engage business stakeholders, designers and interdisciplinary innovation teams in futures thinking (Bohemia et al., 2014; Candy, 2010; Gavigan, 2001; Irmak, 2005; Kelliher & Byrne, 2015; Woudhuysen, 1997).

In the field of design, several practices have been central to the development future images, such as performative techniques designed to empathise with stakeholders through ethnography and user observation studies, or probing deeper into emerging needs through the study of extreme users (Djajadiningrat, Gaver, & Fres, 2000; Keinonen, Kokkonen, Piira, & Takala, 2004). However, extending future images beyond the horizon is needed to envisage next-next generation value propositions, which requires a mindset of futures thinking (Evans, 2003). Despite the growing interest in studying the future, and more specifically, the role of futures thinking in design and business, empirical evidence in deploying or adapting foresight techniques is still relatively scant (Newbury, 2014).

The problem to be addressed in this paper is motivated by our limited understanding of how designers and inter-disciplinary innovation teams realize futures that are desirable (Coughlan & Prokopoff, 2004), and when major events or changes could affect their industry. If we are unable to explain the *how*, then we are also unable to take advantage of approaches that could help designers and interdisciplinary innovation teams apply futures thinking (methods, techniques, approaches) to envisage next-next-generation products, services, system, or imaginary value propositions.

Therefore, the aim of this paper is to address two important questions:

10. How can designers and interdisciplinary innovation teams engage with, and prepare for the future, when the strategic planning horizon is some 5, 10, or even 15 years?
11. How can they systematically develop a vision of futures in a world that *could be* while considering varying perspectives: an organization desired, the marketplace to come, the industry to be, or the human equation that defines future consumers by their demands, behaviours, and cultural patterns.

To address these questions, an applied research case study is presented, were the aim was to combining a well-known foresight method with futures techniques. In this study, the author of this paper consciously tried to create a mixed methodology (identified as design-inspired foresight) that would be understandable and inspiring to designers and non-designers alike. The method used as a basis for foresight was Delphi, a proven foresight technique in the field of future studies. To gain access to a high-calibre group of experts in the field of inquiry (Private Banking), the study was supported by a leading global Financial Services brand "ABC".

Important lessons in the application of elected foresight techniques are presented; these focus on (1) the Delphi method (Linstone & Turoff, 1975), (2) a horizon scanning model "Three Horizons" (Baghai, Coley, & White, 1999), and (3) future scenarios building techniques (Ogilvy & Schwartz, 2004). In that, the focus is placed on the value of design *futures* thinking as a creative and divergent thought process in business and design, which has the potential to produce much broader organizational reforms needed to sustain in today's rapidly evolving business environment (Buchanan, 2015; Irmak, 2005; Muratovski, 2016).

The paper is structured as follows: Firstly, the strategic planning process as a traditional business practice of dealing with the future - and its inherent limitations toward long-range planning, are compared to the activities in strategic design that may inform opportunities for future product, service, or integrated system innovations. The design-inspired foresight approach is introduced, which is designed to elicit expert opinions concerning issues and topics that might be impacted by future events, and, as demonstrated in applied research, could define the organization (e.g. Private Bank) in distant futures (e.g. 2030). Resulting from the methodology applied in this futures study, important lessons in employing, or adapting, design-inspired foresight techniques, are presented. An example outcome demonstrates the Delphi method, which allows designers and interdisciplinary innovation teams to engage with futures in form of scenario statements. Derived through synthesis and consensus from industry and academic experts, these statements are their shared visions for desirable futures.

Strategic Planning in Business

In business, the purpose of strategic planning is to assess a current status against a set of environmental factors, thus determining an organizational roadmap (mission goals) based on a vision for the future (Kaplan & Beinhocker, 2003). The success of a strategic plan is reliant on adequate information that inform the objectives, strategies, decision-making, and measuring of results against a set of goals (Miller & Cardinal, 1994). The limitation of strategic planning, however, is that strategic decisions are primarily based on interpreting information about the past and present (Mintzberg, 1994). Similarly, the lack of applying strategic thinking techniques as a creative and divergent thought process, and as a conscious, explicit, and collective business capacity, can be a limiting factor in the conventional strategic planning process (Heracleous, 1998).

When applying a creative thought process, the objective is to think about the future and to consider different ways (alternative futures) in which the external environment may evolve over the next 5 - 10 years, or even longer. In other words, what would the response have to be if a future were to unfold that was distinctively different from the one

anticipated in the current strategic plan? Hence, the purpose of futures thinking in design and business is based on the belief that future outcomes can be influenced by choices made in the present.

Strategic activities in Design

Strategic design are activities that integrate systems of products, services, and communications in organizations highly dependent on shared value creation across different groups of participants, clients, and relevant stakeholders (Manzini & Vezzoli, 2003; Meroni, 2008). As a decision-making tool, strategic design activities enable the designer to consider hard constraints imposed by an organization (internal environment), against ecological and social impacts, and the cultural sensibilities and symbolic meaning that inform external environments in a rapidly changing society (Meroni, 2008).

Historically, strategic design has played a key role in Product Service Systems (PPS), shifting the innovation focus from product (or service) design to an integrated product-service solution. However, due to globalization, technological advancements, and a power shift toward the consumer, increasing business complexity and the associated risks place new demands on strategic design to go beyond satisfying short-term innovation goals (Manzini & Meroni, 2007). Indeed, strategic design activities applied to foresight may offer decision-makers a holistic view on looming issues. It is here where creative thinking, visualization, and prototyping techniques can further advance images of futures that are preferable (Koh, Slingsby, Dykes, & Kam, 2011; Manzini & Vezzoli, 2003).

Design-inspired Foresight

Comparing the business and design practice of dealing with the future, noticeable intersections between strategic planning and strategic design processes are the creation of future value, and the development of perceptions about the future that may inform decisions, or strategies needed to prepare for a desired future. While most organizations fail to look beyond a narrow set of factors, evidence suggests that firms who have recognized the value of strategic design as an important resource in the innovation process, are indeed those who achieve sustainable competitive advantages (Grant, 2010; Heskett, 2009; Martin, 2009). This development further emphasises the need for theoretical and practical knowledge in strategic foresight activities linked to design (Bohemia et al., 2014; Evans, 2012; Grand & Wiedmer, 2010). Indeed, the purpose of employing a design-inspired foresight approach is to combine expert insights with trend analysis, and signs of early change, thus develop a deeper understanding of forward-looking perspectives that may help shape the future.

Moreover, a design-inspired foresight approach affords opportunities for visualization design, and storytelling techniques to enhance the impact of the research findings. Consequently, futures thinking and elected foresight techniques may help advance an organizations' readiness and ability to deal with the increasingly uncertain business environment, or, at the very least, as Glenn (2003) proffers: to enhance [the organization's] anticipatory consciousness. Too often, as we are reminded, the apparent benefits of foresight may only become obvious in hindsight (Simonton, 2012).

Applied research case study: Envisaging futures of Private Banking to the year 2030

An industry increasingly at risk in dealing with uncertainty is the Financial Services industry. As a core pillar of economic activity, changing consumer and user behaviours, technological advances, and disruptive business models are among major drivers of change. Furthermore, globalization and decades of banking deregulations have resulted in the blurring of banking, insurance and capital market boundaries, which are further causes of innovations that create uncertainty and other complications. Indeed, legacy players in the financial services industry are showing signs of losing their competitive edge, while start-up companies (e.g. FinTechs) are using advanced technologies, innovative business models, and value created for a social consumer to disrupt, and fundamentally change the way financial services are being delivered (Chishti & Barberis, 2016). Against this backdrop of inevitable change, designers and interdisciplinary innovation teams have to make sense of evolving trends, and spot the early signs (signals) that may inform discontinuities, which could jeopardise an organization's strategic direction (Saritas & Smith, 2011).

Research Design and Theoretical Framework

Anticipating the future is not commonly practiced by business decision-makers as the focus, too often, is directed toward the short-term horizon and the financial objectives linked to the organization's financial plan. To gain a deeper understanding of future perspectives, and the methodologies, methods, and approaches needed to engage business stakeholders in futures thinking, two key attributes in applying foresight techniques must be considered: a) concerning the nature of inquiry (qualitative, quantitative or semi-quantitative), and the methods to gather and process information (Butter, Brandes, Keenan, & Popper, 2008). To engage foresight techniques as issue identification, researchers often must rely on the opinions of experts who are better aware of what is going to happen in the future (Rowe & Wright, 2001). Since experts possess tacit knowledge over specific business aspects, these can be identify and judge as the most critical uncertainties (Linstone & Turoff, 1975).

Among the established foresight methods is the Delphi technique first introduced by the RAND Corporation in the 1950s (Linstone & Turoff, 1975). The Delphi technique is a qualitative research method, ideally suited to capture experts' forward-looking perspectives, as this structured technique allows a group of individuals, as a whole, to consider, reflect upon and provide opinions on complex issues (Linstone & Turoff 1975). It has proven to be a popular instrument to engage experts in group communications to deal with complex issues, elicit individual opinions, and subsequently seek group consensus as a whole. Researches who have applied the Delphi method often cite a key strength in that experts remain anonymous throughout the Delphi communication, thus making this technique more conducive to independent thought on the part of each participating expert (Denzin & Lincoln, 2000).

A further strength of the Delphi method is that it allows experts to be geographically dispersed, which means that participants can interact around the subject topic, and receive sequential feedback during several rounds of questioning, without ever having to meet as a group (Garrod & Fyall, 2005). To guide a Delphi futures study, a horizon

(environmental) scanning model serves as an appropriate theoretical framework, as the focus in futures studies is on identifying external trends and developments that may suggest potential implications through early signs of change. Horizon scanning may be defined as "the acquisition and use of information about events, trends and relationships in an organization's external environment, the knowledge of which would assist management in planning the organization's future course of action" (Choo, 2002, p.84).

While many horizon scanning models have been developed by those practicing foresight (Talwar, 2010), their commonalities are scanning, analysing, and synthetizing stages as central components of a model framework. An applicable horizon scanning model is the "Three Horizon Model" - first introduced by Baghai, Coley, and White (1999). As Curry and Hodgsen (2008) suggest, the "Three Horizons" model enables diverse futures and strategic methods to be integrated to systems and structures, and connected to different speeds of change as appropriate (Figure 1).

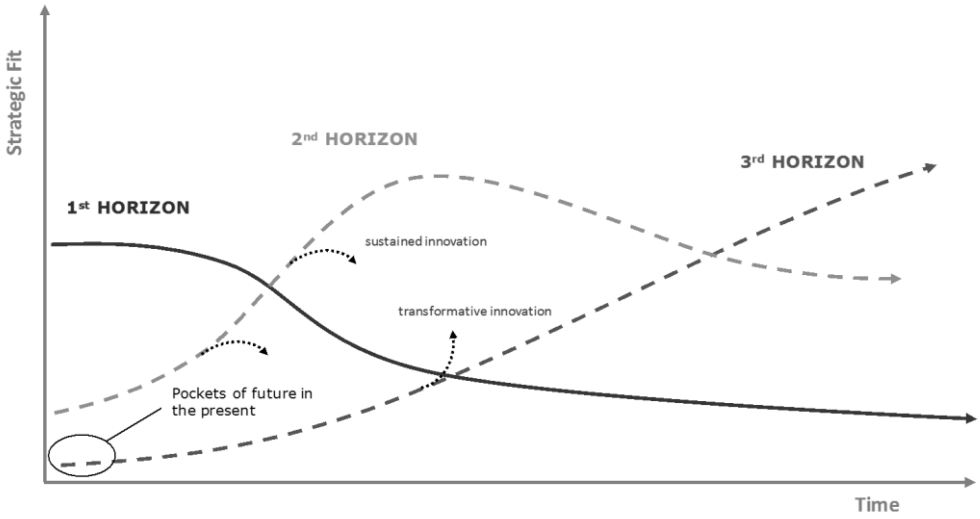

Figure 1 Schematic of the futures-oriented Three Horizon model

As the schematic depicts, potential transition points can be identified based on their likely disruptive or incremental innovation tendencies. As such, the 1st Horizon focuses the conversation on the prevailing systems (status quo); it has high strategic fit to the organization's mission. However, over time it loses its fit as external forces or factors come into play. The 3rd Horizon, conversely, deals with weak signals, options or arguments about the future of systems that may have consequences to the present environment as it is known. In-between these two horizons is the space (2nd Horizon) where the transition from the known to the unknown (or untested) occurs, and where systems are typically unstable. The time distance between horizons depends on the industry domain or nature of inquiry; the third horizon often requires that systems can be allowed to change significantly (Sharpe & Hodgson, 2006).

Fundamentally, foresight methodologies combine foresight techniques such as macro trend analysis and expert knowledge to explore alternative futures (Voros, 2001). To

engage participants in futures thinking, Hancock and Bezold's (1994) futures cone (Figure 2) serves as a valuable metaphor of four types of alternative futures (possible, plausible, probable, preferable), whereby the emphasis is placed on envisaging (or inventing) *preferable* futures. The strength of the futures cone lies in the thought process applied by the participants in futures studies, as the cone allows planners to track relevant trends against the scenarios' plausibility in a systematic and logical progression (Voros, 2001).

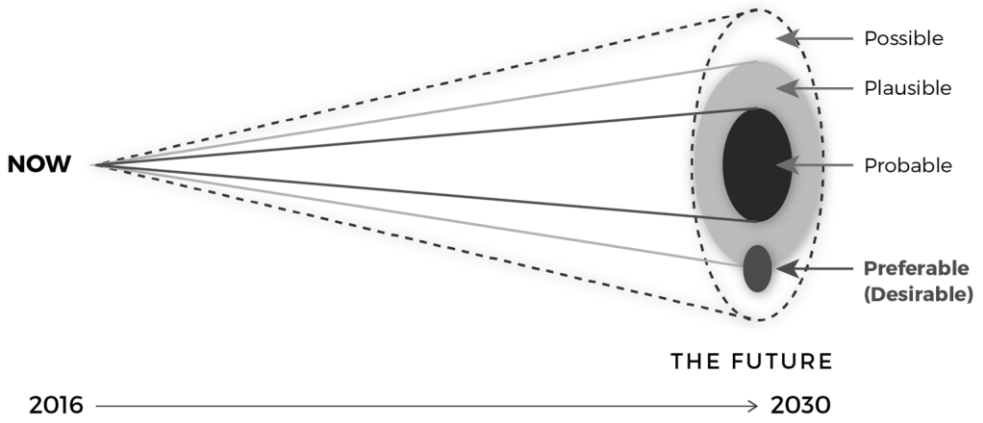

Figure 2 The "future cone" - adapted from Hancock and Bezold (1994)

As business stakeholders become increasingly mindful of the reforms needed to adapt to the relentless change of the business environment, a design-inspired foresight approach, elected methods and techniques applied in the 2030 futures study, are presented. Furthermore, important lessons in employing, or adapting, foresight techniques in the design and innovation process are discussed.

Applied Research Case Study - Lessons and Discussion

Lesson 1: Research Design – Theoretical Framework in Design-inspired Foresight
As a theoretical framework, the "Three Horizon" model (see Figure 1) offered study participants opportunities to engage simultaneously with short-term, medium-term, and long-term futures thinking, thus approaching a given subject over three distinct time horizons. For example, to engage Delphi experts across distinctive time horizons, participants were asked an opening question linked to the present: What are the important topics/issues that define the core of the business, and which will need defending and keep expanding? This question related to the 1st Horizon, and addressed issues that concern images of continuous growth (Dator, 2009). Exploring issues relating to the 3rd Horizon, Delphi panel participants were asked to consider: What are the important drivers of change (early signs) that will radically influence the nature of the (business) in 2025, and 2030?

Survey questions were designed to take into consideration varying perspectives, which the Delphi participants had to identify with. As an example, beyond the experts' views on what may impact an organization in a given time horizon, a response to the industry, market, and consumer perspectives were sought. At the completion of the analysis phases, it was anticipated that this approach would present holistic insights into the early warnings of potential threats and opportunities of the extended external business environment.

Important for designers and interdisciplinary innovation teams who employ the horizon scanning model, is that the 3rd Horizon perspective is deeply informed by worldviews and the values in which the individual expresses his/her opinion. It is here were expert informants exercise their power of voice and experiment, which Inayatullah (2004) suggests, makes the "Three Horizon" model such a useful tool as alternative scenarios are informed by different worldviews and logic. In a long-range futures study (e.g. 5-10 years), it is therefore plausible that experts are no longer constrained by their current views of organizational bias, thus expressing their deep-founded believes and values that inform a desirable, or indeed preferable future organization.

Discussion

As foresight methodologies are usually qualitative rather than quantitative in nature (see Cuhls 2003), a key objective in conducting a design-inspired foresight study is to produce futures scenarios that help prepare for, or indeed actively shape visions of the future. Figuratively speaking, in foresight the focus is directed on "…the world as it could be, through the imagination and realization of possible futures…" (Grand & Wiedmer, 2010, p.2). In this sense, a design-inspired foresight approach is based on creative interpretations derived from various trends, STEP (Socio-cultural, Technological, Economic, and Political) drivers of change, and the opinions and knowledge of subject matter experts who are the key informants in the process. Consequently, a design-inspired foresight approach can prepare key stakeholders to make sense of complexity, thinking and planning for the future, while coordinating creative resources at all levels of decision (Kelliher & Byrne, 2015).

Moreover, as designers and interdisciplinary innovation teams dependent on multi-disciplinary participants to work together to remove uncertainty and anticipating possible futures (Baraquero, 2014), the design-inspired foresight paradigm can be regarded as a collective problem-solving, preferred-change, and vision-provoking undertaking.

Lesson 2: Data collection - the Delphi technique

The main purpose in Delphi is to gain insights on how individual industry and scholarly experts express their understanding to a set of survey questions, and the synthesized opinions they are presented with in subsequent survey rounds (Figure 3). The technique itself involves a set of opening questions, which are presented to the Delphi panel through an online (web-enabled) survey tool. Once individual experts have completed their questions, the data is summarized and a set of new questions are designed based on the findings from the first round. This process is then repeated until consensus is reached (Turoff & Hiltz, 1995).

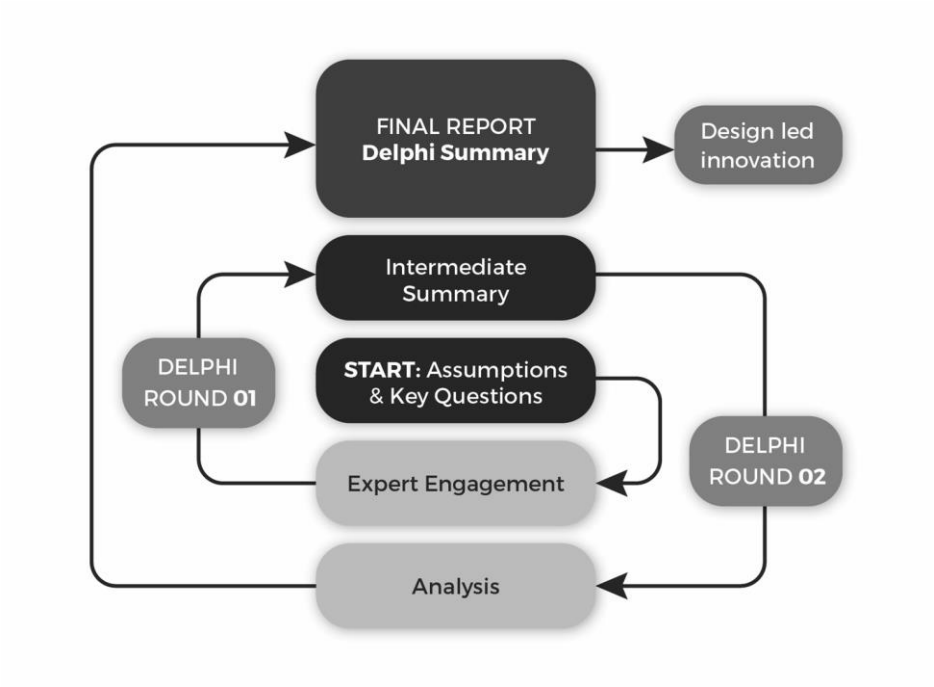

Figure 3 A Two-Round Delphi Survey Research Design, and with analysis stages

Although the Delphi method is well established in a majority of research disciplines (Powell, 2003), many challenges remain to be dealt with during the application stages. This holds true in particular for the first-time user of this method (Ayton, Ferrell, & Stewart, 1999). Addressing these challenges, toolkits have been developed to adapt the Delphi method and meta-analyses to specific fields of inquiry including health care (de Meyrick, 2003), tourism management (Donohoe & Needham, 2009), information and management systems (Okoli & Pawlowski, 2004). A tool kit that has proven to be of value in foresight surveys (Buhring, O'Mahony, & Laitamaki, 2011), is Day and Bobeva's (2005) "Generic Delphi Toolkit" (GDT), which help guide the preparatory, convergence, and consensus stages in classic or modified Delphi surveys.

Discussion

Preparing for a Delphi survey is perhaps most important in achieving a successful outcome, as the focus is placed on identifying and communicating the main research problem to be addressed. During this stage, the research team has to identify and select expert participants, design and test a data collection tool, develop a series of carefully constructed survey questions, and decide on the data analysis framework and method (Day & Bobeva, 2005). When formulating the problem statement, one important consideration should be the overall aspiration of the study purpose and objectives. According to Andranovich (1995), the study problem (purpose) and questions posed should match the study participants' interests in order to ensure meaningful participation. For example, is the inquire intended to be broad: 'What will the future look like?', or is the

issue under inquiry quite specific to an organizational aspect or hypothetical future? Targeted participants may have varying motives; for example, some are interested in exploring ways of navigating change, while others are keener on making sense of disruption. Others still may see the most important outcome in gaining a collective understanding of emerging markets, competitors, or uncovering the deeper changes in stakeholder values, behaviours and beliefs.

It is advised that researchers preparing for a design-inspired foresight study should allow ample time to describe the study aims and objectives, articulate the research problem and ensuing questions, and identifying experts needed on the Delphi panel to achieve the overall study outcome (Donohoe & Needham, 2009).

Lesson 3: Think about images of the future – pre-survey participant engagement

It is highly recommended to develop relevant content in form of an information document to be issued to study participants in the lead-up stages of the Delphi. The aim in that is to encourage Delphi panel experts to open their minds, and start thinking about images of the future prior the official commencement of a Delphi survey. For example, in the lead-up to the 2030 Delphi survey, a "Delphi Information Handbook" was issued to each panel expert at least two weeks prior to the launch of the first survey-round. The objective was to present experts with a foundational futures question, intentionally to start the conversation from a known perspective of the present, while considering the official version of the future. Supporting materials may combine appropriate social, technological, economic, and political mega trends, as well as thought-provoking images of alternative futures (Dator, 2009).

Gaining access to the appropriate calibre of experts can determine the outcome quality; in this research case study, support was sought from a global industry organization "ABC" who is widely considered as a leader in Wealth Management and Private Banking. Under these circumstances, quite often, research teams can gain access to otherwise difficult to engage senior decision-makers, and the professionals identified for their specific commercial and functional expertise.

Discussion

It is important for the research team to remain resourceful in securing the right candidates as there are no certainties that targeted experts are committed to participate in a time-consuming Delphi study. Moreover, the selection process has to remain rigours and adhere to a set of predetermined selection criterion relevant to the study focus (Donohoe & Needham, 2009). The selection criterion can be determined based on obtaining a more holistic understanding from experts across functional disciplines. In this futures study, these were sought from experts in strategy, innovation, client engagement, product development, Information and Technology Systems [ITS], and Marketing. To achieve a balanced view from different inside/out perspectives, a small group of academic scholars from social science, cultural, and technology backgrounds were also invited to join the Delphi panel.

Considerations toward the size of the expert panel was based on the review of the Delphi literature. The method's application suggests that the Delphi technique has been successfully used with expert panels comprising of as few as 4 and as many as 904

participants, and that the panel size should be determined based on the number of experts available (Smith 1995). Following the recommendations obtained from a comprehensive review of the Delphi literature, a heterogeneous group comprising of between 9 and 12 experts was deemed adequate for this study. This was further acknowledged by the high calibre of expertise, and far-reaching areas of responsibility identified among the targeted group of industry and scholarly experts. At the completion of this study (when consensus is reached), the Delphi panel composed of 13 experts, reached consensus on several key futures scenario statements after two consecutive survey rounds. From the launch of the first survey round to the consensus-reaching final round, the Delphi survey took four months to complete.

Lesson 4: Data Analysis in a design-inspired foresight study

Collecting qualitative data through a Delphi method, a general inductive approach to analysing raw data is recommended. The main focus is on the findings to emerge through issues identification, and the rational each individual expert provides for the issue they nominate. From the data analysis, frequent, dominant, and significant issue groups - and their related themes, will emerge. This process allows the data obtained from the experts to be coded and sorted across time horizons (e.g. 2020, 2030). This approach is consistent with the description of how qualitative data should be sorted, coded and analysed through data reduction and display techniques (Miles & Huberman, 1994).

Miles and Huberman (1994) described the three elements of qualitative data analysis as, "Data reduction refers to the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written up field notes or transcriptions" (p.10). The authors also highlighted the benefits of using a matrix approach to analysing large amounts of data, thereby organizing information coherently; while at the same time, focusing on the relevant portions of data needed to answer the research questions.

Discussion

In this case study, an 8-step analysis process was developed; these steps are outlined in the following table (Table 1).

Table 1 Data Analysis – the 8 Process Steps

Data Coding Method – Delphi Round 1
1. Data capture – Round 1
2. Data analysed for issue types (current and emerging)
3. Data analysed for "units of meaning" (emerging issues and themes)
4. Data analysed for issue and theme definitions
5. Emerging data categories
6. Data sorted by issues, themes, categories, and across time horizon
7. Data synthesized by (four) perspectives
8. Scenario statements for each perspective, and across time horizon

Following this data coding process, further analysis in form of 'key words' can be obtained from the rationale each panel participants provided for their nominated issues. The outcome of steps 1 – 7 produced a series of scenario statements (an example statement is to follow) that captured the combined opinions obtained from the expert panel. Scenario statements were developed as a synthesis; a method of qualitative content analysis designed to explore issues at a deeper level (Minichiello et al., 1990), thereby presenting panel participants with an expression of an idea derived from their combined responses in subsequent Delphi rounds.

Lesson 5: Futures Scenario Statements

Key business stakeholders and corporate planners are increasingly dependent on the use of scenario building and analysis techniques to produce a vision of preferable futures. From the traditional approach of applying strategic planning techniques based on the assumption that tomorrow's business environment will be much the same, new creative thinking approaches are needed to define the firm's vision and direction, and to implement the reforms needed in an entirely new business environment of heightened risk and uncertainty.

Discussion

The data analysis in this design-inspired foresight study was designed to produce a series of futures scenario statements that captured the combined opinions obtained from the Delphi expert panel. Presenting the findings of the first Delphi round to the expert panel, occurs at the launch of the second-round survey. Participants have the opportunity to reflect on the statements, and confirm the essence of their combined opinions on the issues that were considered important, now and in the future.

In the second Delphi round, experts were presented with scenario statements (10 in total) that expressed ideas analysed and synthesised from their combined responses in the first round. A likelihood of occurrence rating index was provided for each statement, which had been designed as consensus-reaching indicators through mean value analysis of the group's consensus on each scenario statement.

The following statement provides a futures scenario example derived from the synthesis of expert opinions reached at the completion of the second Delphi-round. This example emphasizes their combined responses addressing the organization perspective, and the early signs (weak signals) that are characteristic of the 3rd Horizon:

> *In 2030, the traditional Private Bank (organization) has ceased to exist, while the Private Bank 2030 operates through client-facing identities that are backed by powerful backend platforms, thus fully embracing the benefits of a highly-streamlined entity with geographical proximity to key markets. This future entity is supported by global systems and specialist teams deploying the highest standard of wealth management advisory services. Operating within prevailing regulatory constraints, services are curated effectively across a network of strategic partnerships. Through open architecture platforms, the Private Bank 2030 specializes in offering primarily investment management and advisory services, while some innovative players are experimenting with holistic, lifestyle-related, and*

behavioural-driven client touch-points most relevant to client interests and talents. To this end, efficient and decentralized product innovation capabilities will provide unique competitive advantages, which will enable the Private Bank 2030 (greater China) to withstand challenges presented by external forces.

Conclusion

This paper is a response to calls for a deeper understanding of future perspectives, and the methodologies, methods, and approaches needed to engage business stakeholders, designers, and interdisciplinary innovation teams in futures thinking. Looking beyond strategic planning in business based on historical and current knowledge and trends, the emphasis in this paper was placed on foresight in design and business as the imagination and creation of possible futures. Through applied research, a design-inspired foresight approach was introduced in a 2030 futures case study, emphasising the value of foresight as an emerging activity in strategic design and innovation.

To demonstrate the use of elective foresight methods, techniques, and models, five lessons were drawn from a design inspired foresight study in the Financial Services industry to the year 2030. This futures study was designed to address two important questions, namely: How can designers and interdisciplinary innovation teams engage with, and prepare for the future, when the strategic planning horizon is some 5, 10, or even 15 years ahead? And, how can they systematically develop a vision of futures in a world that *could be* while considering the organization, market, industry, and consumer perspectives.

Employing a design-inspired foresight approach, the focus is directed toward gaining deeper insights through Delphi-like techniques, thus moving away from the traditional management practices of predicting the future based on current knowledge. In the 2030 futures study presented in this paper, the goal was to help individual stakeholders identity and agree on desirable futures. As seasoned researchers in foresight acknowledge, whichever methodology or method may be applied to futures studies, challenges remain to connect the present with preferable futures in ways that "…helps to identify the divergent futures which may emerge as a result of conflict between the embedded present and these imagined futures" (Curry & Hodgson, 2008, p.2).

Conversely, the value of employing a design-inspired futures approach comes through developing futures scenarios that become powerful visions of desirable futures. From this position, designers and interdisciplinary innovation teams can engage with decision-makers to develop innovation strategies, and pathways on how the organization might achieve its mission across different time horizons. Thus, important contributions can be made to theoretical and practical knowledge in design foresight processes, while offering design researchers practical lessons of employing, or adapting existing foresight methods, such as those described in this paper. Indeed, as the role of design in business is expanding across all aspects of futures thinking, design-inspired foresight activities aspire to prepare key stakeholders to shape the organizations' future.

References

Andranovich, G. (1995). *Developing community participation and consensus: The Delphi Technique* (Vol. WREP0131): Western Regional Extension Publication.

Ayton, P., Ferrell, W., & Stewart, T. (1999). Commentaries on" The Delphi technique as a forecasting tool: issues and analysis" by Rowe and Wright. *International Journal of Forecasting, 15(4)*, 377-379.

Baghai, M., Coley, S., & White, D. (1999). The alchemy of growth. Practical insightsfor building the enduring enterprise: New York: Basic Books.

Baraquero, C., and Garcia. (2014). *Construct the Future: new models and visions.* Paper presented at the 19th DMI: Academic Design Management Conference, London, 2–4 September 2014.

Bohemia, E., Rieple, A., Liedtka, J., & Cooper, R. (2014). *Proceedings of the 19th DMI: Academic Design Management Conference: Design Management in an Era of Disruption*: Design Management Institute.

Buchanan, R. (2015). Worlds in the making: design, management, and the Reform of Organizational culture. *She Ji: The Journal of Design, Economics, and Innovation, 1(1)*, 5-21.

Buhring, J. H., O'Mahony, B., & Laitamaki, J. M. (2011). *Designing and Delivering Memorable Experiences in the Luxury Hotel Sector.* Paper presented at the CAUTHE 2011: National Conference: Tourism: Creating a Brilliant Blend.

Butter, M., Brandes, F., Keenan, M., & Popper, R. (2008). How are foresight methods selected? *foresight, 10(6)*, 62-89.

Candy, S. (2010). *The futures of everyday life: politics and the design of experiential scenarios.* UNIVERSITY OF HAWAI 'I AT MĀNOA.

Chishti, S., & Barberis, J. (2016). *The FINTECH Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries*: John Wiley & Sons.

Choo, C. W. (2002). *Information management for the intelligent organization: the art of scanning the environment*: Information Today, Inc.

Coughlan, P., & Prokopoff, I. (2004). Managing change, by design. *Managing as designing*, 188-192.

Curry, A., & Hodgson, A. (2008). Seeing in multiple horizons: connecting futures to strategy. *Journal of Futures Studies, 13(1)*, 1-20.

Dator, J. (2009). Alternative futures at the Manoa School. *Journal of Futures Studies, 14*(2), 1-18.

Day, J., & Bobeva, M. (2005). A generic toolkit for the successful management of Delphi studies. *Electronic Journal of Business Research Methods, 3(2)*, 103-116.

de Meyrick, J. (2003). The Delphi method and health research. *Health education, 103*(1), 7-16.

Denzin, N. K., & Lincoln, Y. S. (2000). The discipline and practice of qualitative research. *Handbook of Qualitative Research, 2*, 1-28.

Djajadiningrat, J. P., Gaver, W. W., & Fres, J. (2000). *Interaction relabelling and extreme characters: methods for exploring aesthetic interactions.* Paper presented at the Proceedings of the 3rd conference on Designing interactive systems: processes, practices, methods, and techniques.

Donohoe, H., & Needham, R. (2009). Moving best practice forward: Delphi characteristics, advantages, potential problems, and solutions. *International Journal of Tourism Research, 11(5)*, 415-437.

Dunne, D., & Martin, R. (2006). Design thinking and how it will change management education: An interview and discussion. *Academy of Management Learning & Education, 5(4)*, 512-523.

Evans, M. (2003). *Trend forecasting for design futures.* Paper presented at the European Academy of Design 5th International Conference, Barcelona, 2003. Proceedings... Barcelona.

Evans, M. (2012). Designing next-next generation products and services: A design-led futures framework.

Garrod, B., & Fyall, A. (2005). Revisiting Delphi: the Delphi Technique in Tourism Research. *Tourism Research Methods: Integrating theory with practice*, 85.

Gavigan, J. P. (2001). *A practical guide to regional foresight*: FOREN.

Glenn, J. C. (2003). Introduction to the futures research methods series. *Future research methodology, version, 2*.

Grand, S., & Wiedmer, M. (2010). *Design fiction: a method toolbox for design research in a complex world.* Paper presented at the Proceedings of the DRS 2010 conference: Design and complexity.

Grant, R. (2010). Contemporary Strategy Analysis Blackwell Publishing: Oxford.

Heracleous, L. (1998). Strategic thinking or strategic planning? *Long Range Planning, 31(3)*, 481-487.

Heskett, J. (2009). Creating economic value by design. *International Journal of Design, 3(1)*.

Inayatullah, S. (2004). Causal layered analysis: Theory, historical context, and case studies *The causal layered analysis reader: Theory and case studies of an integrative and transformative methodology* (pp. 1-52): Tamkang University Press.

Irmak, O. (2005). Applying the Futures Studies Approach to Design. *Proceedings of EAD, 6*, 29-31.

Kaplan, S., & Beinhocker, E. D. (2003). The real value of strategic planning. *MIT Sloan Management Review, 44(2)*, 71.

Keinonen, T., Kokkonen, V., Piira, S., & Takala, R. (2004). Konseptisuunnittelun työtapoja. *Teos Keinonen, Turkka & Jääskö, Vesa (toim.): Tuotekonseptointi. Helsinki 2004*.

Kelliher, A., & Byrne, D. (2015). Design futures in action: Documenting experiential futures for participatory audiences. *Futures, 70*, 36-47.

Koh, L. C., Slingsby, A., Dykes, J., & Kam, T. S. (2011). *Developing and applying a user-centered model for the design and implementation of information visualization tools.* Paper presented at the Information Visualisation (IV), 2011 15th International Conference on.

Linstone, H., & Turoff, M. (1975). *The Delphi method: Techniques and applications*: Addison-Wesley Pub. Co., Advanced Book Program.

Lojacono, G., & Zaccai, G. (2004). The evolution of the design-inspired enterprise. *MIT Sloan Management Review, 45(3)*, 75.

Manzini, E., & Meroni, A. (2007). Emerging user demands for sustainable solutions, EMUDE. *Design Research Now*, 157-179.

Manzini, E., & Vezzoli, C. (2003). A strategic design approach to develop sustainable product service systems: examples taken from the 'environmentally friendly innovation'Italian prize. *Journal of cleaner production, 11(8)*, 851-857.

Martin, R. L. (2009). *The design of business: why design thinking is the next competitive advantage*: Harvard Business Press.

Meroni, A. (2008). Strategic design: where are we now? Reflection around the foundations of a recent discipline. *Strategic Design Research Journal, 1(1)*, 31-28.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*: Sage Publications.

Miller, C. C., & Cardinal, L. B. (1994). Strategic planning and firm performance: A synthesis of more than two decades of research. *Academy of management journal, 37*(6), 1649-1665.

Mintzberg, H. (1994). The fall and rise of strategic planning. *Harvard Business Review, 72*(*1)*, 107-114.

Muratovski, G. (2016). Paradigm Shift: report on the new role of design in business and society. *She Ji: The Journal of Design, Economics, and Innovation, 1(2)*, 118-139.

Ogilvy, J., & Schwartz, P. (2004). Plotting your scenarios.

Okoli, C., & Pawlowski, S. (2004). The Delphi method as a research tool: an example, design considerations and applications. *Information & Management, 42(1)*, 15-29.

Oster, G. W. (2008). Practitioners corner: Derailing design thinking. *International Journal of Leadership Studies, 4(1)*, 107-115.

Powell, C. (2003). The Delphi technique: myths and realities. *Journal of Advanced Nursing, 41(4)*, 376-382.

Rowe, G., & Wright, G. (2001). Expert opinions in forecasting: the role of the Delphi technique. *Principles of forecasting: A handbook for researchers and practitioners*, 125–144.

Saritas, O., & Smith, J. E. (2011). The Big Picture–trends, drivers, wild cards, discontinuities and weak signals. *Futures, 43(3)*, 292-312.

Sharpe, W., & Hodgson, A. (2006). Technology forward look. *London: Foresight Programme. Retrieved February, 29*, 2008.

Simonton, D. K. (2012). Foresight, insight, oversight, and hindsight in scientific discovery: How sighted were Galileo's telescopic sightings? *Psychology of Aesthetics, Creativity, and the Arts, 6(3)*, 243.

Talwar, R. (2010). Scanning the Horizon *Trends and Issues in Global Tourism 2010* (pp. 237-268): Springer.

Turoff, M., & Hiltz, S. R. (1995). Computer based Delphi processes (pp. 55-88): London, Kingsley Publishers.

Vecchiato, R. (2015). Strategic planning and organizational flexibility in turbulent environments. *foresight, 17(3)*, 257-273.

Voros, J. (2001). A primer on futures studies, foresight and the use of scenarios. *Prospect: The Foresight Bulletin, 6(1)*.

Woudhuysen, J. (1997). *Structuring Information for Designing the Future*: Design Management Institute.

About the Author

Dr Jorn Buhring is a Research Assistant Professor at the PolyU School of Design; his research focus is on human-centred value innovation with emphasis on user engagement in experiential settings. Addressing future perspectives, Jorn explores design foresight, vision and fiction approaches through applied research. His aim is to advance emerging design processes in business through vision-provoking futures thinking.

.