

Banking Outside-in: How Design Thinking is Changing The Banking Industry?

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The banking industry is facing unprecedented changes. From the assault launched by various Financial Technology companies (FinTechs), to the shifting customer needs and expectations, banks need to transform itself to remain relevant in the digital age. In this paper, we seek to explore the relevance of design thinking as a method to help banks cope with the disruptive changes. We review the biggest drivers of disruption in the banking industry, the suitability of design thinking for the banking industry and banks' current approaches to design thinking. Lastly, a case study on a Bank in Singapore is introduced to illustrate the example of application of design thinking for a new product design in banking and discuss opportunities and challenges.

Keywords: *Design Thinking; Bank; FinTech; Innovation; Design*

1 Introduction

The rise of FinTechs – new players or startups that specialise in financial services – is disrupting dominant players in the banking market. The popularity of new payment systems like PayPal, Apple Pay, Alipay, Android Pay, Venmo, Samsung Pay, and M-Pesa, indicate a decreasing customer satisfaction and trust advantage on banks (Winch, 2014). In the United Kingdom (UK), it is estimated that one in four bank branches will vanish in the next five years, while in the United States, over 1,700 banks closed in just 12 months as customers needing over-the-counter transactions declined (Louise, Rexrode, & Jones, 2018).

The decline of banking implies a failure to innovate amid a tide of digital disruption. The traditional banking model is being contested as customers grow disillusioned and form new expectations. In fact, a survey suggested that 7 out of 10 millennials in the UK would use a financial service mobile app offered by tech giant (Eurobank, 2018). Innovative approaches in business strategy and development are therefore imperative.

One of the most important concepts that have driven successful innovation in several industries is the concept of design thinking (Jamain, 2014; Beckman & Barry, 2007). Design thinking is defined by IDEO CEO and President Tim Brown as a “human-centered approach to innovation” which takes into consideration people’s needs, technology, and the requirements for business success (Brown, 2008). Despite its popularity and success, design thinking is still significantly under-researched (Clark & Smith, 2008; Suci & Baughn, 2016) in the business context. There has been scant academic research on the experiences

or the opportunities that design thinking offers to the banking industry, especially in the non-Western world.

In this paper, we aim to explore the opportunities of adopting design thinking in banking, focusing on the following questions: What are the biggest drivers of disruption in the banking industry?; Why is design thinking suitable for the banking industry?; How can design thinking be used in banking? We explore these questions through literature reviews and a case study on one bank based in Singapore. Our aim from this study is to identify key research themes related to design adoption in banking and envision relevant strategies, processes and tools.

2 Why banking is ripe for disruption

2.1 Where the banking industry is now

Without a doubt, the financial services sector, of which the banking industry is the largest, is a crucial segment of the contemporary global economy. Over the past decades, however, the banking industry has experienced disruption that forces its players to revisit the way they do business. For example, JP Morgan Chase Chairman and CEO Jamie Dimon famously remarked in a letter to investors about Fintechs: “They all want to eat our lunch. I mean every single one of them, and they are going to try” (Shontell, 2015).

The digital disruption in the banking industry does not only cover mere technological changes or the arrival of new players, but an upheaval of the entire retail banking model due to changes in the market structure (Ferrari, 2016). FinTechs pose a very powerful competition through digitisation of financial services. On the other hand, robo-advisory tools adopted under Industry 4.0 are becoming increasingly popular (Mladenović, 2018). Furthermore, Big data, Internet of Things, Analytics, Machine Learning, and new analytics capabilities need to be utilised to improve work process and customer segmentation (de Galhau, 2016). Already, many banks are doing business by going cashless (Tee & One, 2016) and essentially, completely disappearing – by doing “invisible banking.” Under these current conditions, it would seem that the digital bank is the “bank of the future” (Dermine, 2016).

2.2 Disruption theory

Disruption refers to the theory pioneered by Christensen (1997) who traced the rise and fall of players in the disk-drive industry and how the industry changed hands from the dominant to the new entrant. Disruption theory hypothesises that where incumbent firms possess values that stop them from exploring opportunities despite having the capacity to do so, thereby allowing other entrants known as “disruptors” to take advantage of this opening.

In narrowing the focus on what currently works for the firm, incumbents resist market-driving value innovation. As a result, the disruptor becomes the player exploiting the chance to introduce a new value proposition to the market, which are usually attuned to mainstream customer needs, and at a cheaper price. Thus, any industry disruption may be considered as a development that could either marginalise the incumbent or altogether destroy it (Arnold & Jeffery, 2016). Disruption theory proposes that any product innovation, which would otherwise be viewed as inferior by an incumbent firm, may actually be regarded as superior by a sizable market segment. Thus, disruption theory underscores the recognition of the importance of innovation as a solution (de Galhau, 2016).

2.3 Drivers of disruption in the banking industry

2.3.1 Shift to customer focus

Many studies posit that the financial crisis of 2008 has eroded consumer trust on the entire financial services sector (Järvinen, 2014; Gillespie, 2013). A consumer survey pointed out customers perceived banks with descriptors such as “greedy,” “unsafe”, “untrustworthy,” and “putting profit before people” while only 21 per cent believed that UK banks are learning from their mistakes and changing their ethical behaviours for the better (YouGov-Cambridge, 2013, p. 8).

Other empirical research describes this weakness in traditional banking as a lack of empathy and customer focus (Culiberg & Rojsek, 2010). Many studies support the need for banks to rate highly on empathy and reliability to boost customer satisfaction (Chu, Lee, & Yu, 2012; Culiberg & Rojsek, 2010). Trust, empathy, and engagement are some characteristics that modern customers now seek in their financial service supplier. This means coming up with mechanisms to allow customers to be open, honest, communicate about their problems, and consequently, build trust (Chu et al., 2012). Compared to incumbent firms, making customer focus paramount is what differentiates FinTechs. FinTechs rely on a deep understanding of the customer’s needs and wants by continually offering upgrades on services and offerings, find solutions to challenges, and fuel innovation (EY, 2017a).

2.3.2 Digital revolution

Rapid advances in information technology and mobile devices have already undergirded some of the most groundbreaking innovations in financial services. For instance, the movement towards a cashless society has been implemented in countries like Nigeria (Ezuwore-Obodoekwe et al., 2014). Technologies such as the radio frequency identification (RFID) and near field communication (NFC) have gained increasing acceptance and application. Innovations such as Lollapalooza’s Lolla Cashless, which allows one to pay through a wristband, are capturing the imagination of the millennial market. High-tech giants have also rolled out its own payment systems such as Apple Pay, Google Pay, and Samsung Pay. The rise of Quick Response (QR) codes, which are black and white codes read through scanners and enable payment, also indicate how the trend is veering away from the usual brick-and-mortar branch model of banking. QR codes are popularly used in Japan and China, facilitating \$1.65 trillion of mobile payments in 2016 alone (The Economist, 2017).

2.3.3 Changing customer expectations

Rapid digitisation in commercial services has bred greater expectations of convenience among customers. Such expectations are likely to intensify as technologies evolve rapidly to offer voice-activation, artificial intelligence (AI) capability, and real-time transacting (EY, 2017b). Hence, customer expectations with respect to payments and other financial services include speed, convenience, cost, and user-friendliness (du Toit et al., 2018).

Moreover, demographic factors are driving this shift. The increasing influence of so-called millennials or “digital natives” amplifies the preference for FinTech and the drive for customer-driven design (McCarthy, 2015). In a study, it showed that this market demographic trusts new FinTech entrants more than traditional banks in payments (Milne & Parboteeah, 2016).

2.3.4 Changing market structure

As a result of changing customer expectations and rapid digitisation, the market structure of the financial market has changed (Financial Stability Board [FSB], 2019). Increasingly, digital disruptors are winning new clients and cannibalising the market shares of incumbent banks. Agile and innovative, new entrants provide fresh and exciting ideas to financial services which existing universal banks are unable to.

Consulting group Bain opined in a report that the future of the banking industry is hinged on the ability to “leverage the power of customer insight, advanced analytics and digital technology” (as cited in Marous, 2018). To stay relevant and competitive, banks need to be able to improve their personalisation of the banking experience and offer services by responding to what customers need and want. Thus, banking is right for disruption and innovation, as a growing movement in the industry is calling to adopt design thinking or human-centered design (Wylie, 2017).

3 Design thinking applied in the banking industry

The application of design thinking in the banking industry is a relatively new phenomenon. While there have been case studies written on the potential that implementing design thinking can contribute to business success on health, education, engineering, and technology sectors (Patel & Khanjan, 2017), there is sparse literature on the application of design thinking or human-centered design on the banking industry. In this section, we unpack what elements of design thinking the banking industry finds relevant for its innovation and review existing cases around the world.

3.1 Suitability of design thinking for banking industry

Until now, there is no consensus on a standard definition of design thinking. One of its foremost champions Tim Brown, CEO and president of IDEO, suggested that design thinking refers to a “methodology that imbues the full spectrum of innovation activities with a human-centered design ethos” (Brown, 2008). David Kelley defines it as “a method for how to come up with [...] breakthrough ideas that are new to the world, especially with respect to complex projects, complex problems” (Camacho, 2016, p. 88).

What Brown and Kelley identified, (i) the human-centeredness of innovation and (ii) identification of breakthrough ideas were seen as the most important factors in helping banks assess the suitability of design thinking. In a small market like Singapore, there were already 119 banks competing for a same set of clients based on very similar product offerings.

The hyper competitive banking industry is hard pressed for change, and combined with the above mentioned drivers of shifting to customer focus and digital revolution have contributed to banking industry’s adaptation of design thinking. Banks needed to move from business and technology driven decision making and embrace customer’s insights. They also needed to digitize their offering, but not without capturing the inputs from their customers. In the below industry analysis, we saw that early adopter banks have started to use design thinking as an unique differentiator in the way their products are designed.

3.2 Review of the precedent cases

3.2.1 Hungarian banking industry

Feher and Varga (2017) undertook an exploratory applied research to surface the customer-centric challenges faced by seven Hungarian banks using the design thinking approach. The research was premised on the need for banks to gain deeper insight into what customers want, identify these problems, evaluate the challenges faced, and ideate solutions. The authors modified IDEO’s five-step approach and came up with their “One Week Sprint” methodology, which consisted of the following steps:

1. Preparation: problem mapping based on stories
2. Discovery: learning from industry experts
3. Interpretation: documentation of experiences such as stories, post-it notes, visual reminders to identify the need and problems needed to be solved
4. Ideation: brainstorming of ideas
5. Experimentation: presenting the idea through a storyboard, PowerPoint, or one-page business model canvas, and get feedback
6. Evolution: pitching the concept, risk analysis, tracking progress and learnings

The results of the study indicated problems in the role of the bank branches, online and mobile phone services, and products and services, as well as several digital solutions ideated. For one, young customers viewed going to the branch as an annoyance and when customers need to personally appear, the waiting time was long and dull. During the ideation phase, the group came up with ideas such as providing tablet games to know customer intentions while waiting, providing multi-functionality in mobile banking services such as augmented reality, and visioning of an online bank where important personal data is readily available.

3.2.2 National Australian Bank

The National Australian Bank (NAB) partnered with consulting group Oliver Wyman to provide customer-centric solutions for their small and medium enterprise (SMEs) clients (Oliver Wyman & IESE, 2017). Using the five-step IDEO design thinking methodology, NAB utilised the “day in the life of” tool to relive how clients experience the lending process, leading them to define that the process was complex, time-consuming, preference of unsecured products, and preference for mobile services. From the ideation process, an online application called the NAB Quickbiz Loan was formulated. This app consisted only of three steps and tied to a cash-flow credit model that allowed SMEs to secure up to \$50,000 in business loans, with a decision-making time of 60 seconds and three days funds disbursement (Oliver Wyman & IESE, 2017).

3.2.3 Deutsche Bank

Germany’s Deutsche Bank endeavoured to promote design thinking organisationally by starting with their IT department first rather than imposing it on the entire organisation. It first partnered with design thinking experts as well as a small design thinking team in the department that focused solely on completing successful projects. The design thinking transformation at Deutsche Bank went in three phases: Learning (P1), Adapting (P2), and Diffusing (P3) (Vetterli, Uebernickel, Brenner, & Petrie, 2016). Once the IT community started observing results from this design thinking team, the adaptation of design thinking proceeded step by step. Soon, the design thinking community in the bank grew to 150 members in IT who shared and exchanged knowledge with others. This effort led to the completion of the first prototype in less than a year, and the second prototype in less than 18 months. In five years, eight customer-centric projects were completed. After this “subversion” was considered adequate, design thinking was embedded in the company with the hiring of a Vice President for Design Thinking (Vetterli et. al., 2016)

3.2.4 Singapore Banks

In Singapore, the pioneers of design thinking in the financial services are DBS Bank and OCBC Bank, both awardees in design and service excellence. DBS Bank, acclaimed by Euromoney as the “world’s best digital bank” (Groenfeldt, 2018) rolled out their first successful design thinking project ‘DBS Home Connect’ in 2013. Fueled by a leadership that is passionate and serious about entrenching design thinking, DBS transformed its technology infrastructure to accommodate Big Data, AI, and biometrics (DBS Bank, 2016).

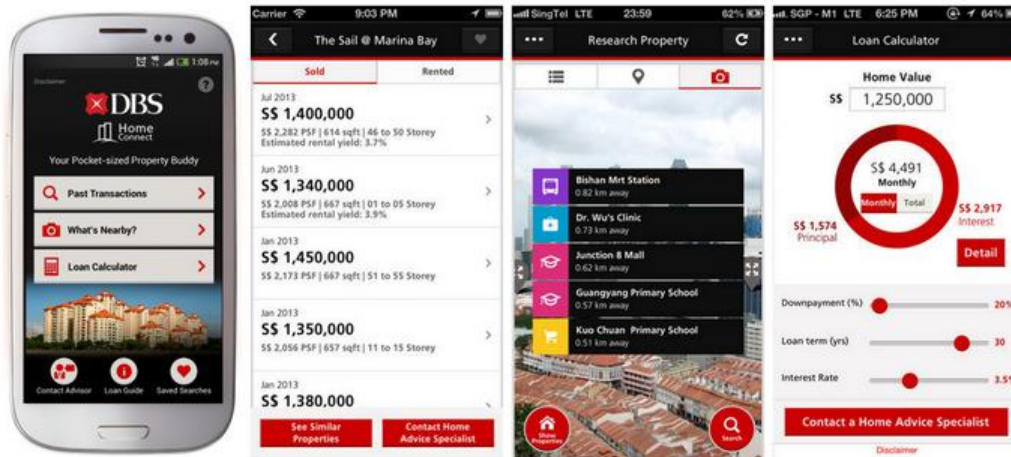


Figure 1. DBS Home Connect. (Source: DBS Bank)

DBS Home Connect was the result of several customer consultations and ideation that led to a smartphone app which allows users to calculate mortgage payments for home buys and check information on previous transactions, including rental information (Tan, 2013).

OCBC Bank implemented design principles in its innovation efforts. In coming up with solutions, OCBC used customer insight, co-creation, community engagement, stakeholder involvement and experimentation, adapting from IDEO's five-step design thinking method. For example, OCBC Bank developed a family and kid-friendly bank policy called OCBC Full-Service Sunday Banking using design thinking. The bank used the diary research technique to produce an "outside in" perspective, focus group discussions, moment mapping for prototype and testing, and learning labs for learning (Wah, 2013).

The above-review of the precedent cases leads us to identify a few common patterns on the adoption of design thinking in the banking industry. Firstly, the initial adoption of design thinking is typically influenced by the framework and processes of IDEO. The popularity of IDEO's framework could be attributed to the many successful case studies they have under their belt that covers a broad spectrum of industries (see Brown, 2008). Secondly, after the initial usage of design thinking the broad sentiment is to localize the design thinking process to suit the bank's own process and type of customers engagement they are involved in. Thirdly, design thinking projects are first used on retail/mass customer segment rather than corporate or High Net Worth (HNW) customers as retail customers are easier to engage and to apply design thinking on. Corporate or HNW customers are typically harder to engage to demonstrate the value of design thinking.

4 Case study

The previous section gave us a broad base understanding of how design thinking has been used in the banking industries around the world. In this section, we will introduce a case study so as to examine in more detail, firstly, in what kind of formats or processes design thinking is adopted in the actual innovation project in the bank, secondly, what kind of benefits design thinking brings to the bank, and lastly what are the limitations in its current adoption. The case chosen is the Smart Senior pilot program (DBS Bank, 2018) by DBS Bank in Singapore launched in May 2018. Smart Senior is an initiative launched by POSB (a fully owned subsidiary of DBS Bank) to help the senior citizen embrace digitization and cashless payments. Singapore defines elderly residents as those 65 years old and above and in year 2018, that accounts for 13.7% of its total population of 5.638 million (Department

of Statistics Singapore, 2019). This is in alignment of the broader Smart Nation agenda pursued by the Singapore’s government and also by the bank (Smart Nation and Digital Government Office , 2018). This program was launched by DBS Bank/POSB, in partnership with the Yishun Riverwalk Resident Committee (RC) and Republic Polytechnic (RP).

In this project, DBS Bank’s Innovation Management team played the coaching role, guiding the students from RP instead of conducting the in-depth interviews and observations for design thinking due to the two reasons of (i) shortage of manpower, as the project required large number of interviews within a short span of time. The RC advised that the team had two half-day sessions to engage sixty senior citizens, and (ii) as part of DBS’ commitment to industry projects to upskill the students to RP and provide actual use cases for the students to experience the tools and theories learnt in classroom.

Table 1 POSB Smart Senior Stakeholders Introduction.

Stakeholders	POSB (Business)	DBS Bank (Innovation Management)	Republic Polytechnic	Yishun Riverwalk RC
Introduction	Subsidiary of DBS Bank	Innovation Management is the internal consulting team of the bank, consisting of mainly design-trained consultants and designers	RP is an institute of higher learning in Singapore, providing diploma-level (pre-university) education to post-secondary school students	The Yishun Riverwalk RC is a volunteer-driven organization to promote cohesiveness within the community of their respective zones
Staff involved	5x Product Managers and analyst	4x consultants/designers	50x students from Diploma in Business and Social Enterprise (DBSE) 2x lecturers	5x RC management committee members
Roles and responsibilities	Funding of initiative Product development and management	Coaching POSB, RP and RC members through the design thinking process Training the RP students in interviewing techniques Collation of insights Design of product	Learning interviewing techniques from DBS, with no prior knowledge/skillsets Conducting of interviews	Liaison and management of senior citizens who would come for interviews Recruitment of pilot participants

Source: DBS Bank.

4.1 Adoption of DBS Bank’s Journey Thinking Framework

DBS Bank’s Journey Thinking 4D framework is the bank’s adaptation of the UK Design Council’s Double Diamond design process (2019), with the four steps similarly named as discover, define, develop and delivery (Figure 2). The process and tools used by DBS Bank is largely aligned to the five-step methodology of design thinking mentioned above. Design

thinking was chosen as the issue is one that is rooted in the human's behaviours, habits and preferences. As DBS have also seen limited success with previous senior engagement projects, the iterative approach allows the project team to iterate and test before deciding on a firm outcome for implementation.

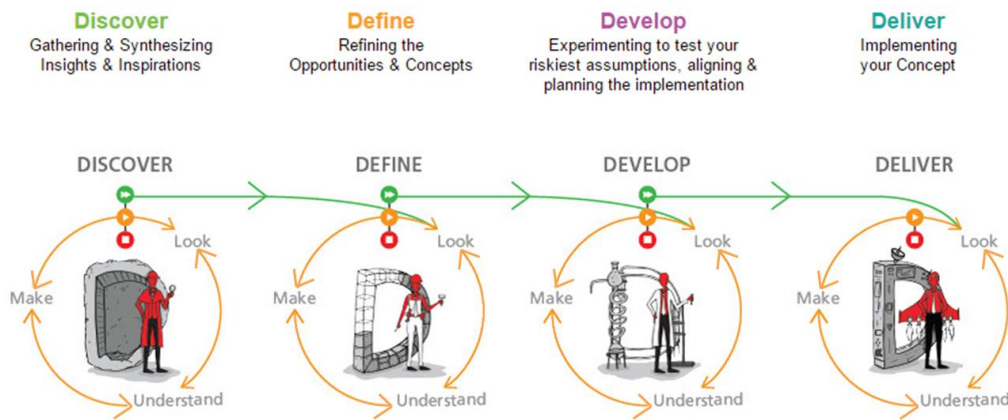


Figure 2. DBS Bank's 4D framework. (Source: DBS Bank)

In Discover phase, the DBS team collaborated with the students from RP to discover the needs, pain points and problems of sixty selected senior citizens. To enable the students to conduct the focus groups effectively, a training and demonstration was conducted by the Innovation Management team of DBS bank to help them understand in-depth interviews and observation techniques. The key findings from the user research by the students focused on day to day lifestyle and habits of the elderly, their social relationships and networks, their financial attitudes, and lastly their experiences on digital platforms and cashless payment.

In the Define phase, DBS Bank and People's Association gathered together for an ideation workshop to identify the opportunity areas. At the end of the workshop, the participants identified four smart value propositions of smart payments, smart transport, smart communication and smart fitness. These four smart features will be designed into a card sleeve, worn around the neck, as they observed elderly wearing similar lanyards in the past and would face less implementation barrier as compared to a format they are less familiar with.

In the Develop phase, user testing was conducted to understand if the four key features were aligned to what they wanted. They were presented with a concept board, with write-ups of the features in different languages (Chinese, Malay, Tamil and English) and different versions of how the wearable devices could look like (see Figure 3).



Figure 3. Different versions of the proposed wearable device for experimentation. (Source: DBS Bank)

Based on the inputs captured during the user testing sessions, the elderly wanted to have a more flexible format that could be worn in different ways. Apart from form factor, the respondents also gave various inputs on the effectiveness of the pedometer, use cases of cashless payment which were all captured for subsequent considerations.

Taking all the feedback into considerations, DBS moved into Deliver phase by issuing a RFP (Request for Proposal) and identified a partner to help manufacture the devices. 62 participants were selected from the Yishun Riverwalk district to take part in the three-months pilot. The selection criteria include being a resident of the Yishun Riverwalk community that is launching the program, being cash dependent. The program would allow DBS and PA to understand if elderly would switch to cashless payment methods and if the behaviour would remain after the program concludes.



Figure 4. The Smart Senior Package (Source: DBS Bank)

The eventual package produced by the vendor is one that is flexible and convenient, with various ways of attaching the card sleeve (see Figure 4).

4.2 Outcomes

“I was very excited when I first heard of the POSB Smart Senior Program, as I can do so many things with just one device! Now I can try using contactless payments when paying for my morning cup of coffee!”

Mdm Morie Lim Teck Cheo, 60 years old, Yishun Riverwalk resident (DBS Bank, 2018)

The Smart Senior pilot was officially launched on 5th May 2018 by Education Minister Ong Ye Kung. The three-months pilot concluded in August 2018 and provided the bank with a rich opportunity to understand and observe the cashless usage of the elderly. The outcome of the pilot was encouraging. The active engagement was observed from all 62 elderly participants and cashless numbers went up. Some highlights of pilot outcome include:

- 40% of elderly converted to cashless methods over the course of three months
- Step tracking is a popular feature that was heavily utilized
- Smart communication feature proves to be unpopular as many elderly were opting out of it
- Many elderly reverted to carrying the elderly concession card instead of using the wearable device as it offered them a cheaper fare
- The wearable format did not reduce the fear of elderly losing their card

4.3 The Role of Design Thinking

After the conclusion of the Smart Senior Program, the Innovation Management team of DBS Bank conducted a series of in-depth interviews with key stakeholders who participated in the pilot to discuss the learnings and takeaways from this pilot, and the process of Journey Thinking was mentioned in several instances:

4.3.1 Strong focus on customers

As compared to the usual problem solving framework of the bank, where customers were rarely consulted and decisions were driven by business profitability and technology feasibility, design thinking provided two opportunities where all the stakeholders would have to engage the customers in an in-depth way.

First of all, while the Product Managers from POSB had years of experience engaging the senior citizens, and the RC volunteers work with their residents on a daily basis, there were blind spots in their understanding and assumptions that they have formed up over the years. The focus groups and test gave them an opportunity to clarify their doubts and most importantly listen to the senior citizens instead of coming in as an expert to solve their problems.

Secondly, the experiments also gave the team added confidence on the robustness of the insights and helped the Product Managers adjust the value propositions before launching it

into the market. This gave the team assurance on the desirability of the product, which was absent in traditional decision making process.

4.3.2 Rigorous process for analysing and communicating insights

While surveys were conducted in the past, the product team in DBS bank often did not have the tools to conduct more in-depth analysis of the data captured. The channels of engagement also did not afford the team such an opportunity to dig deeper. By embracing the approaches of design thinking, the team felt that the post-interviewing process of writing verbatims, clustering them according to themes identified and the writing of insights statement is a much more rigorous process as compared to relying on superficial survey data. The team knew exactly which verbatim and thematic clusters contributed to the insights. This not only gave the sponsors greater confidence that the insights were sound, but also helped the subsequent ideation process where the team had much more in-depth context around the insights to ideate on.

Before embracing this new way of working, insights were largely used as a loose term, anything and everything could be an insight, and the experience of the person identifying the insights then became paramount in ensuring good outcome. The person collating the data and writing up insights also needs to be present during ideation otherwise we run the risk of losing precious context. Design thinking brought replicability of the insight process which is well appreciated by the team and also their sponsors.

4.3.3 Experiments and iterations

The running of experiments to test value proposition is a completely new way of working for most stakeholders on the project. Prior to Smart Senior, the Product Managers in POSB/DBS Bank were exposed to the concept of running User Acceptance Testing (UAT), which centered around user interface, experience (UI/UX) and less of the core product value proposition itself. Those tests were built on the assumption that the product was what the customers wanted, which is a huge risk the Product Managers had to bear. The rapid iteration model introduced by design thinking required the Product Managers to make quick decisions or tweaks for the next round, helping them see a difference in desirability within a short turnaround time, with no additional investment.

In a post-interview conducted with the POSB Product Manager, they mentioned that even if they do not adopt the whole process in their next project, they will ensure that they experiment and test before launching any products into the market in the future.

4.4 Limitations

In the case study of Smart Senior Program, it was initiated by the management of DBS Bank and the Yishun Riverwalk RC. With a top down mandate, the team was given the required resource, and time to co-create a desired outcome.

The conducting of interviews, running of ideation session, and conducting of experiments take time, causing many to revert back to the usual way of working, by jumping straight to a potential solution based on their experiences. The unrealistic expectations of sponsors very often get into the way of conducting rigorous research, as they would try to compress certain stages of the process from weeks to days.

Another common pain point was the lack of trained personal to lead the teams through the design thinking process. Only high prioritized projects such as Smart Senior got the help required, and others would have to wait or self-serve using the tools and framework of the

bank. In addition to the leadership support, a more robust training and support model would also help operationalize design thinking in a better way.

5 Discussion and Conclusion

By improving the entire customer experience, design thinking enhances customer relationships and adds value to the value proposition of a bank's business model. As illustrated in the reviewed case studies, establishing design thinking as a pivotal element in business strategy can strengthen the bank's position as it ensures that customers' needs and expectations are addressed. Nevertheless, embedding design thinking is a complex endeavour. By following the insights captured and experimenting, not all results are going to be positive in the first instance as demonstrated by the Smart Senior Program.

A strong leadership committed to change as exemplified in the experiences of DBS Bank's Smart Senior Program would be key to enable teams to learn and get better at each iteration. Design thinking can also pave the way for innovation not only of standalone banks, but of the entire industry, as illustrated in the Hungarian experience (Feher & Varga, 2017). While the reviewed case studies of design thinking application in banks paint a promising picture of how design methods can fuel innovation, the field still requires more rigorous, holistic and systematic methods to address complex stakeholder relationships and incorporate very recent approaches like data analytics.

Many products and services rolled out using design thinking methods also need time to prove the value it brings, to help ensure continued usage and commitment. More studies in the Asian context also need to be pursued as the Asian financial industry has evolved rapidly and has seen less dependencies on western markets. With Asia looking increasingly different, it will be hard to generalize the western trends in Asia. Moreover, further studies investigating the relationship of design thinking to metrics of business success such as profitability should also be further explored.

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