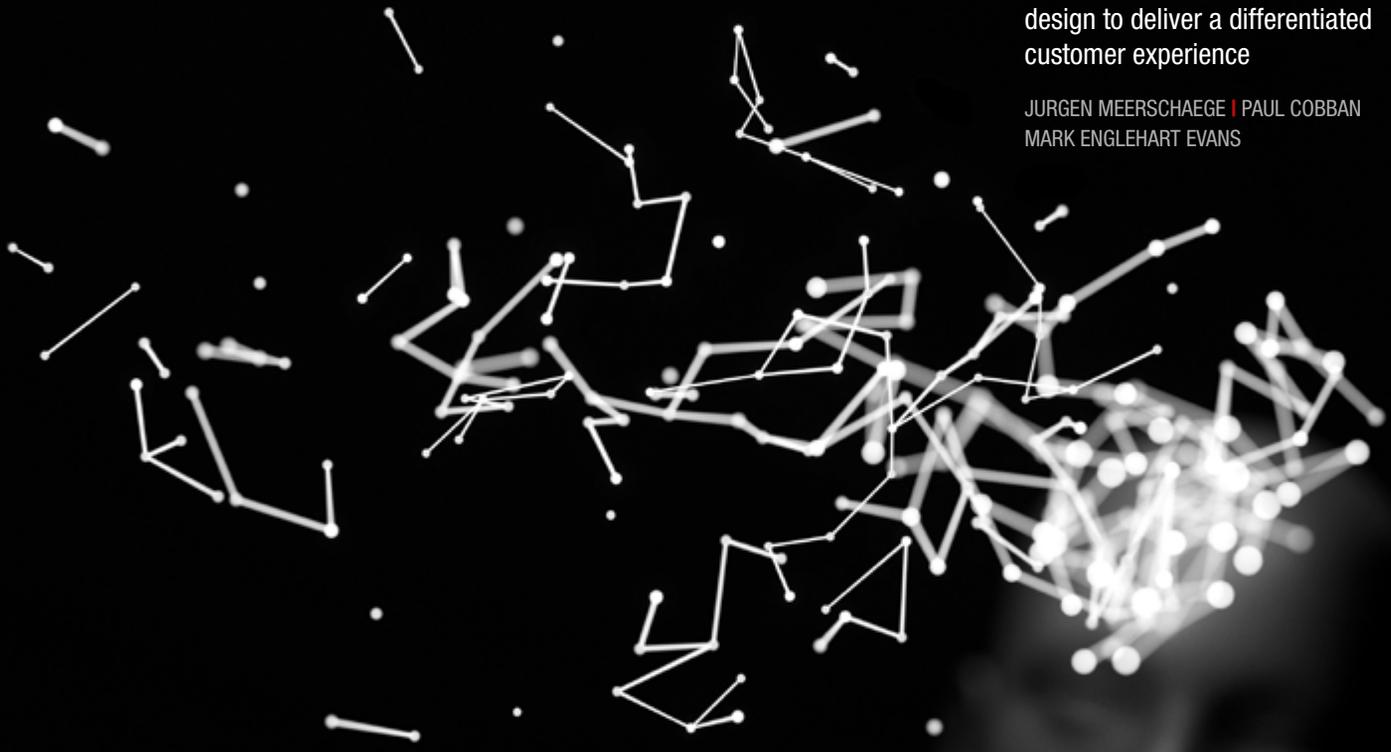


THE CAPCO INSTITUTE
JOURNAL
OF FINANCIAL TRANSFORMATION

DESIGN

How DBS embraced data-informed design to deliver a differentiated customer experience

JURGEN MEERSCHAEGE | PAUL COBBAN
MARK ENGLEHART EVANS



DESIGN THINKING

#48 NOVEMBER 2018

THE CAPCO INSTITUTE

JOURNAL OF FINANCIAL TRANSFORMATION

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DEAR READER,

Design thinking, a collaborative, human-focused approach to problem-solving, is no longer just for the creative industries. It has become an important management trend across many industries and has been embraced by many organizations. Its results are hard to ignore. Indeed, design-driven companies regularly outperform the S&P 500 by over 200 percent.¹

To date, the financial services industry has not led in adopting this approach. However, leaders are recognizing that important challenges, such as engaging with millennial customers, can be best addressed by using design thinking, through the methodology's exploratory approach, human focus, and bias towards action. This edition of the Journal examines the value of design thinking in financial services.

Design thinking introduces a fundamental cultural shift that places people at the heart of problem-solving, which is critical in a technology-driven environment. If the customer's real problems are not fully understood, technological solutions may fail to deliver the desired impact. In this context, design thinking offers a faster and more effective approach to innovation and strategic transformation.

The case studies and success stories in this edition showcase the true value of design thinking in the real world, and how this approach is an essential competitive tool for firms looking to outperform their peers in an increasingly innovation-driven and customer-centric future. At Mastercard, design thinking has become a part of almost all organizational initiatives, from product development, research and employee engagement to solving challenges with customers and partners. Meanwhile, at DBS Bank in Singapore, a data-informed design model has been firmly embedded into the bank's culture, enabling them to successfully move from being ranked last among peers for customer service in 2009, to being named the Best Bank in the World by Global Finance in 2018.

I hope that you enjoy the quality of the expertise and points of view on offer in this edition, and I wish you every success for the remainder of the year.

A handwritten signature in black ink, appearing to read 'Lance Levy', with a stylized, flowing script.

Lance Levy, Capco CEO

¹ <http://fortune.com/2017/08/31/the-design-value-index-shows-what-design-thinking-is-worth/>

HOW DBS EMBRACED DATA-INFORMED DESIGN TO DELIVER A DIFFERENTIATED CUSTOMER EXPERIENCE

JURGEN MEERSCHAEGE | Head of Culture & Curriculum, DataFirst, DBS

PAUL COBBAN | Chief Data and Transformation Officer, DBS

MARK ENGLEHART EVANS | SVP, Head of Experience, DBS Transformation Group

ABSTRACT

Design thinking has led to tremendous improvements in business practices and customer service at a multitude of organizations. DBS Bank in Singapore initially followed the standard playbook for design thinking, though it adopted a '4D' framework of 'discover, define, develop, and deliver'. It soon strengthened the standard practices by implementing data-informed design thinking, which enabled staff to embed data into their design thinking practices and deliver an even better customer experience. The results are self-evident, as DBS Bank was recently named the Best Bank in the World by Global Finance. This article explains the processes DBS Bank went through on its design thinking journey, provides tangible examples of how it uses design thinking, and outlines how it is building on its success by embedding data into design thinking practices more deeply to deliver even better results.

1. INTRODUCTION

As it went about making significant improvements to its service levels over the past decade, DBS Bank also went through an evolution in its practices. It started by focusing on 'Asian Service' and developed an innovative framework called 'RED' that started a cultural shift within the organization. To drive change further, DBS soon embraced design thinking as a core methodology to make the shifts more effective. And, after finding that design thinking methodologies alone did not fully enable the process changes it aspired to, it developed data-informed design as an enhanced methodology that delivers even better results. It is still continuing the

process evolution, by refining its practices even further so that all staff can fully leverage the benefits of the enhancements the bank is making.

2. THE GROWTH AND BENEFITS OF DESIGN THINKING

Fundamentally, design thinking is about applying the principles of design to the way people interact with the world. "Design thinking is a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success," as Tim Brown, CEO of IDEO, explains it.¹ While design thinking may seem like a relatively new concept, it has actually been around since the 1960s.

¹ Brown, T., "Design thinking," <https://bit.ly/2wRvxt0>

Design thinking uses an iterative process to understand the customer, challenge assumptions, and redefine problems in order to identify solutions that might not be readily apparent using other methods. It requires a deep understanding of the people for whom a company is designing products and services, through observing and understanding the target customer. Teams and individuals can use design thinking to combine what is needed by the customer with what is technologically feasible for the business.

The process for design thinking most frequently has four or five steps, depending on the practices of the firm that is using it. IDEO, recognized as a leader in design thinking, uses a five-step approach that it says brings together what is desirable from a human point of view with what is feasible²:

Table 1:

APPROACH	ACTION
FRAME A QUESTION	Identify a driving question that inspires others to search for creative solutions
GATHER INSPIRATION	Inspire new thinking by discovering what people really need
GENERATE IDEAS	Push past obvious solutions to get to breakthrough ideas
MAKE IDEAS TANGIBLE	Build prototypes to learn how to make ideas better
TEST TO LEARN	Refine ideas by gathering feedback and experimenting forward

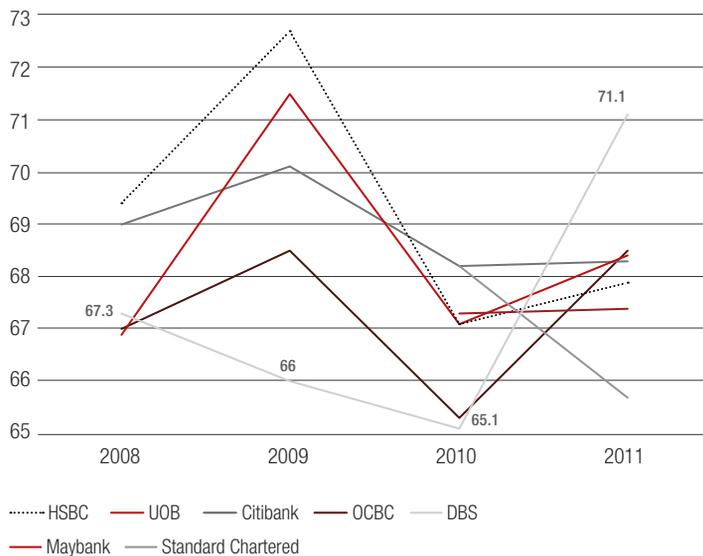
Source: DBS Bank

The results of design thinking are impressive. Research by the Design Management Institute and Motiv Strategies that is incorporated into their Design Value Index (DVI), for instance, shows that design thinking-driven companies such as Apple, IBM, Nike, and SAP outperformed the S&P 500 by more than 200%.³ “We see design not as a pure factor that makes our DVI company’s stocks perform better on the stock market,” said Motiv Strategies CEO Jeneanne Rae, “but rather as a highly integrated and influential force that enables the organization to achieve outsized results.”

Banks have been relative latecomers to using design thinking, as they have concentrated more on maintaining current services for their large base of customers than on using design thinking to find out what customers actually experience and developing services to meet their real needs. More recently, however, leading banks have begun to use design thinking to transform their organizations. BBVA, for instance, has trained more than 1,000 design thinking experts to educate employees about how to apply design thinking throughout the organization. Capital One has established Capital One Labs as a laboratory within the bank to lead innovation using design thinking, and Lab members have opened ‘Capital One 360 Cafes’ as hybrid coffee shop-bank branches where Labs employees interview cafe customers to gather feedback on new prototypes.

Gradually, then, banks are beginning to use design thinking to innovate more effectively, by co-creating products with customers in order to integrate feedback more quickly. Banks are hiring teams with diverse

Figure 1: DBS customer satisfaction comparison with peers



Source: DBS Bank

² IDEO, “Design thinking,” <https://bit.ly/2wRvxt0>

³ Debbie Y., 2017, “The design value index shows what design thinking is worth,” Fortune, August 31, <https://for.tn/20JAxfd>

Figure 2: The RED service standards



Source: DBS Bank

backgrounds to build solutions with empathy, instead of using teams of people with similar backgrounds and strengths. When they build new products, staff in banks that use design thinking are also collaborating with other parts of the organization and with third parties instead of working independently in silos that do not communicate with each other.

3. USING DESIGN THINKING TO DELIVER ASIAN SERVICE

The journey that took DBS Bank in Singapore from being ranked last among its peers in customer service in 2009 to being named the Best Bank in the World by Global Finance in 2018 did not actually begin with design thinking. Over time, however, design thinking became the catalyst that propelled the bank into becoming a global leader.

3.1 Beginning a transformational shift

The transformation at DBS Bank started with an initiative that resulted in a bank-wide program called RED.

Coming out of the global financial crisis in 2009, newly-appointed DBS Bank CEO Piyush Gupta started working towards developing a strategy that differentiated the institution from western banks. DBS had come to the understanding that simply cleaning up the organization and making it more efficient was not the way to win. The leadership team soon coalesced around the concept of 'Asian Service' as the key differentiator, focusing on delivering a customer experience that would make banking joyful. Beyond just having a concept, however, DBS found that it had to determine what 'Asian Service'

actually meant. After extensive analysis, it identified three core service standards, which it termed RED:

- Respectful to the customer
- Easy to deal with
- Dependable

DBS then put a process improvement program in place, leveraging lean techniques that would cut waste out of the system and deliver RED-level services to its customers. Within a relatively short period of time, DBS calculated that it had reduced the time customers expended on services at the bank by a total of more than 250 million hours. By 2011, DBS had moved from last to first in rankings of customer service at banks in Singapore.

3.2 Starting the design thinking journey

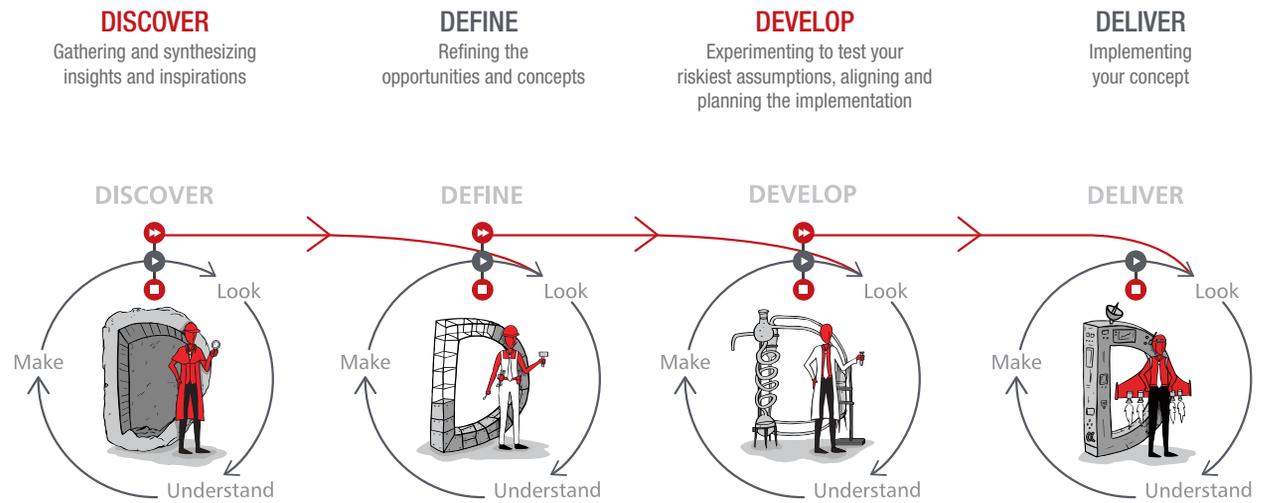
After implementing RED and improving service levels, DBS looked for a way to embed the core RED values into its culture. It soon identified design thinking as a possible way forward. One key insight in 2013 became the catalyst that pivoted DBS to embrace design thinking fully.

The bank was conducting process improvement events (PIE), one of which involved replacing lost credit cards. After reducing the timeframe for replacement cards from five days to one day, staff phoned a customer to request feedback. While the customer was pleased with receiving her replacement credit card quickly, she asked where her debit card was. She had lost her handbag and needed her debit card replaced too. It had not arrived.

The lightbulb switched on. Bank leaders realized that staff were too focused on processes inside the bank, rather than on the customer perspective, and were neither identifying nor resolving the full problem. Bank leaders tapped into staff who had expertise in design thinking and began the process of embedding it within the bank.

As it began to implement design thinking, CEO Piyush Gupta initiated a customer journey program by asking each senior leader to sponsor the use of design thinking to improve at least one customer journey. The journey program became a prominent part of the scorecard used to evaluate every managing director (MD). While not every journey was successfully transformed, pursuing large numbers of projects was essential to changing the culture, embedding design thinking into the DNA of the bank and delivering an amazing customer experience.

Figure 3: The 4Ds framework



Source: DBS Bank

To support the design thinking initiative, DBS established an innovation team with internal design thinking capabilities who have the capacities of an ad agency, service designers, and developers of user experience (UX) and developer experience (DX) strategies.

Gupta also decided, however, that he did not want this team of experts just to stay in a lab and coordinate the design thinking process. Instead, he wanted a team that would focus on problem-solving and enable staff throughout the bank to use design thinking tools in their jobs. A significant portion of the effort, then, revolved around education, coaching, and consulting. The bank subsequently reached the stage where most business units have the capacity for design thinking, even if staff from the core design thinking team are not participating formally.

To make design thinking more relevant to its specific needs, DBS adopted the '4D problem solving framework' from the British Design Council: 'discover, define, develop, and deliver'. 'Discover', for instance, involves understanding what a customer actually experiences. 'Define' requires identifying the problem to solve and determining whether it would be a worthwhile project, using feedback points from the 'discover' process. In the 'develop' phase, teams start designing products. Along with developing an actual product design, they also look at feedback loops that they can embed in the process

so that they can measure the hypotheses, determine whether they are correct, and decide whether they are enabling the business impact they want to accomplish. Once they have verified that the product or service meets their goals, the teams 'deliver' it to the customer.

To marry design thinking with RED, DBS developed 'journey thinking' as its practice to use the 4D methodology to deliver a differentiated customer experience. During its design thinking journey, the bank found it essential to build cultural and business outcomes and to consider alternative ways of solving issues from a customer perspective or a design perspective. To ensure effective outcomes, DBS found that it is important to embed journey thinking into the DNA of the organization, focusing on building the right culture as well as providing superior customer experience outcomes. Journey thinking turned out to be easier for staff to embrace than originally expected, albeit still requiring significant effort and mindset changes, and it created confidence. The key message throughout the process has been that staff need to spend time to find insights to understand a customer's 'job to be done'. As Clayton Christenson explains it,⁴ a businessperson who understands the job a customer needs to get done, designs a product to do that job, and delivers it in a way that reinforces its intended use will find that customers hire that product when they find themselves needing to get that job done.

⁴ Christensen, C., 2004, "Marketing malpractice: the cause and the cure," Harvard Business Review, December, <https://bit.ly/1P4qQmH>

People who had one hypothesis often found, for example, that the customer's job to be done was actually different. The process, which leverages lean and agile, as well as innovation methodologies, aimed at a cultural shift rather than just having teams do things in isolation. Transformation has been broad and deep, allowing staff across the bank to participate and applying management resources to make sure the concepts were embedded deeply even into lower levels in the bank.

When they used design thinking to analyze the card replacement process, for example, staff found that the customer had three jobs to be done: I need to get home; I need to block my card; I need to get my life back in order. When it found it was not fully supporting the job customers needed to get done, DBS changed its call center practices. Agents first empathized with distressed customers who had lost their cards and then explained the replacement process fully. Contact center agents also offered to help the customer replace their other DBS cards and even assisted them with replacing cards from other banks by providing phone numbers for their contact centers. Customer satisfaction skyrocketed.

Since the journey thinking program began, the bank has used it for more than 500 journeys. The process is truly embedded in the company, and staff know that they have to map journeys thoroughly if they want to receive management support for developing any new products or services.

Very importantly, once it began to use and embed design thinking practices throughout the bank, customer satisfaction increased even further.

4. REAL TRANSFORMATION TRANSPIRED BY SHIFTING TO DATA- INFORMED DESIGN THINKING

While journey thinking clearly had a large positive impact on making banking joyful, DBS wanted to do more and make using data an essential part of its design thinking practices. The fundamental methodology for design thinking, the team observed, is traditionally qualitative. Staff put themselves in the customers' shoes, have empathy for the customer, and design products or services to meet customers' needs. Staff use interviews to discover customers' needs and understand what the customer is telling them.

As it focused on using data in every process within the bank, DBS started to encourage its employees to be more data-driven in their journey thinking. It also established a DataFirst team to turn DBS into a data-driven organization by focusing on developing a data-driven culture, data capabilities, data access, and data infrastructure. In the 'discover' phase of design thinking, for instance, DBS wanted staff to go beyond just putting themselves in customers' shoes, so they could fully understand what a customer goes through when dealing with the bank. DBS had followed traditional design thinking processes and taught employees to interview seven to ten customers. While that process provides useful information, it still may be anecdotal and not describe the full customer experience.

DBS thus began to teach staff to move beyond using information from the interviews and started having them also leverage data from far broader swathes of customers. Staff were able to identify customers' actual jobs to be done and the frictions they encountered, such as failed transactions or difficulties when they called the contact center. The result has been that staff using journey thinking can become familiar with customer needs quickly and use the tools as a source of data-informed design for the bank. It also turned out that data provided insights into whom to interview by identifying customers who actually had a problem or who were extreme users.

In the 'develop' phase, where DBS staff were designing products, data helped especially with two aspects. One was to enable staff to experiment at scale, with far larger numbers of customers. The second was to identify feedback loops at the end of the 'develop' phase, to measure whether their hypotheses were correct and whether they enabled the business impact that they expected. Whereas those data points are often an afterthought traditionally, DBS realized that staff needed to think about these questions upfront and embed a process for answering these questions into its products. Just like how companies such as Amazon, Uber, and Grab provide a personalized digital experience based on data, so too is DBS implementing similar feedback loops to get to the same level of personalization.

4.1 Overcoming misconceptions and challenges

DBS has also undertaken initiatives to overcome misperceptions or difficulties with using data.

One misconception is that some people believe they cannot be data-informed because they are not mathematicians. To overcome the issue, the DataFirst team emphasized that one of the most important aspects of being data-driven is the ability to identify the actual problems to solve and the ability to ask great questions that can be answered with data.

“Just like how companies such as Amazon, Uber, and Grab provide a personalized digital experience based on data, so too is DBS implementing similar feedback loops to get to the same level of personalization.”

Another shift that DBS has made to overcome difficulties is to use experimentation to validate conclusions from interviews and analysis. In the ‘define’ and ‘develop’ phases, for example, staff would interview at least eight customers. Originally, staff took positive customer feedback as validation for a new product. Over time, however, they found that responses from such a limited number of customers were insufficient. The bank moved to using data for digital experimentation, conducting AB testing, or testing through prototypes as well as other methodologies, which are broader-based and cost-effective. DBS has been able to lower the cost barriers so that it can test new products or services with hundreds or even thousands of people, enabling staff to know whether a product will have the traction they intend and expect.

4.2 Examples of the impact of data-informed design thinking

Examples from throughout the bank demonstrate the results that data-informed design has delivered.

As an example of data-informed Discovery, DBS wanted to go beyond improving the turnaround time for card replacement and eliminate a key friction point

for customers by giving customers a digital way to request card replacements. Data analysis showed that the customers who most frequently requested card replacements were male students between the ages of 20 and 30 who frequented bars often. The analysis also showed that some customers had as many as 16 card replacements within six months. Staff then used the results of the analysis to identify the types of customers to interview and, using insights gained from talking with these two specific groups of customers, pinpointed customers’ real pain points and went on to ‘develop’ solutions.

Another example, in the ‘develop’ phase, was credit card activation. When customers receive a new card, they are supposed to activate the card before they use it. Data showed that many new customers tried to use their cards without activating them, which resulted in transactions being declined and was often followed by a call to the contact center. An experiment was launched whereby SMS text messages were sent to a small percentage of customers when their transactions were declined, explaining what happened and how to activate their card. Analysis of this customer group showed that card activation rates improved while calls to the contact center reduced dramatically, and the practice was rolled out across the customer base.

Data on failed transactions has also been used to improve the customer experience. In India, for instance, DBS staff used data from the Digibank app and found that a significant portion of customers had unsuccessful logins because they forgot their password. Data alone could not explain the reason, so staff also interviewed customers. They found that the bank’s password format, which was the same as in Singapore, was different from all the other banks in India. Once DBS changed its password format so that it conformed to Indian standards, unsuccessful logins dropped dramatically.

For business banking, DBS talked to treasurers and cash management staff at clients extensively to identify their needs. The design thinking team found that treasurers need analysis of information real-time, such as fluctuations in currency rates. The bank developed a scenario engine called DBS Treasury Prism to test moving cash between countries and the impact on the bottom line. It used customer data to find out how people are using the engine and where customer pain points are, then iterated alternative designs so that Prism could become easier to use.

5. CONTINUOUS IMPROVEMENT MAKES DATA-INFORMED DESIGN EVEN BETTER

As they analyzed the results of design thinking, bank management found two key results. One is that DBS is, indeed, making banking more joyful. The second is that the bank is better able to compete, whether with small fintechs or other banks or big techs, such as Google. While fintech competitors may offer an amazing customer experience, they typically focus on just one segment of financial services and do it extremely well rather than providing the full suite of financial services that DBS offers.

“One misconception is that some people believe they cannot be data-informed because they are not mathematicians.”

Even as the impact of data-informed design has been tremendously positive, DBS has continued to innovate so that it can deliver better service to its customers.

A key focus in 2018 has been to implement two new practices – ‘instrumentation’ and ‘fulfilment’ - in order to implement data-informed design even more effectively after products go live.

As it looked at what data to collect, DBS found that there were sometimes dichotomies between different teams. Whereas marketing and sales staff are typically more interested in successful transactions, for example, designers are more interested in unsuccessful transactions and other data points that would help them better understand customer friction.

In ‘instrumentation’, staff identify and develop feedback loops when they are building products so that they can measure and visualize the overall customer experience. Where capturing and analyzing data was traditionally an afterthought, instrumentation changes that mindset and embeds data user stories in the actual product design. Well instrumented products visualize customer friction points, which allows the team to continue to innovate and improve their products.



'Fulfillment' focuses on how to use data and adapt the experience in real-time to deliver a truly personalized experience. For instance, DBS customers will see personalized ATM menus based on their available account balance. This level of personalization requires deep instrumentation of all its products and services, and it is the most mature level of data-informed designed being taught in the organization.

As senior management reflected retrospectively on how to broaden the impact of the changes and looked at what has worked best, they also decided to focus more on culture by design. DBS has then worked to define its internal culture differently and change employees' mindsets by redefining its culture, describing the bank as a 26,000-person start-up with five key characteristics that it labeled ABCDE: Agile, Be a learning organization, Customer-obsessed, Data-informed, Experiment to take risk.

To embed data-informed design even more firmly into the bank's culture, DBS has used a curriculum around journey thinking and data. DBS has also put data-informed design into its coaching, clinics, workshops, and training. The bank publishes stories about what 'good' looks like, for example, and about how staff can run workshops themselves. DBS staff have learned to look at what data they will extract and how they will use it for ambitious innovation, differentiating the customer experience and next-level-productivity.

RED has evolved too, particularly as DBS has become more digital. Having digitized the back and middle offices, leaders wanted to know whether the bank was still being RED to its customers and following its core service standards. A key challenge recently, for example, has been defining what it means to be respectful to mobile-only consumers. While 'dependable' is more straightforward, with indicators such as server uptime and webpage load speed, 'respectful to the customer' is more difficult to define in a fully digital environment. DBS is in the midst of revitalizing RED in a corporate transformation project that revolves around defining what good service looks like for the digital future, making sure it is still following the RED mantra, and using digital power tools to achieve its goals.

6. CONCLUSION

Design thinking by itself has indeed led to many improvements at companies around the world. Corporations, consultants, and coaches have developed a variety of frameworks to make design thinking even better.

While qualitative practices have delivered excellent benefits, adding quantitative practices can add even more value. Some companies have struggled, however, to embed data into their design thinking processes. DBS has clearly overcome that hurdle, by using innovative techniques and teams to ensure that data is a core part of design thinking.

The results at DBS show that data makes the results of the design thinking methodology even better. It has used data-informed design to increase efficiency, reduce costs, vastly improve customer satisfaction, and innovate in ways that keep it ahead of even the fintechs that are developing sophisticated and focused products for consumers.

Examples throughout the organization, from retail banking and wealth management to corporate banking and human resources or marketing, have shown that data-informed design can work in every part of the bank.

The DBS model, and its process of continuous improvement, thus offers an example of how banks can use data to enhance design-thinking practices, so that they can compete more effectively amidst the fintech wave and increased competition that is inundating banking around the world.

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