



DESIGN THINKING

THE NEW DNA OF THE FINANCIAL SECTOR

HOW BANKS CAN BOOST THEIR GROWTH THROUGH
DESIGN THINKING IN AN ERA OF DE-BANKING

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DESIGN THINKING: THE NEW DNA OF THE FINANCIAL SECTOR

HOW BANKS CAN BOOST THEIR GROWTH THROUGH DESIGN THINKING IN A DE-BANKING ERA

There is broad concern in the banking industry that an important share of revenues and the traditional ways of doing business are at risk due to the emergence of fintech startups that are challenging the established players. In the current economic environment, banks are looking to adapt and evolve their business models to meet these challenges and opportunities. Design Thinking is a useful tool that can help banks in their endeavors.

In this report, we address how Design Thinking can be applied to the financial services sector, offer a case study of a Design Thinking project, and identify how the process can be leveraged to capture additional profit pools.

In doing so, we seek to answer: How can banks boost their growth by successfully applying Design Thinking in a de-banking era?

HOW CAN BANKS BOOST THEIR GROWTH?

THE END OF THE BANKING SECTOR?

Recently, we returned on a flight to Barcelona from New York where we had taken part in a panel discussion with members of the leadership team of PayPal, a company that successfully made the journey from an online payment platform, to challenging established banks in the payments space, both within and across borders. With \$10.84 billion in revenues in 2016,^A PayPal (along with other technology firms such as Google or Amazon) is trying to establish itself as a nerve center for key financial transactions, both offline and online. At the same time, banks face more and more competition from emerging fintech startups, which are using innovative technology to try and chip away at some of the key transactions of traditional banks.^B

The overarching question that occupied our minds on that eight-hour flight, from the vantage point of 35,000 feet above the ground, was: How do traditional banks continue to grow in the face of the emergence of fintechs that are out to disrupt the banks' businesses?

The answer is neither easy, nor simple. In the financial services industry, there are several long-term trends that are reshaping the way the industry operates. These shifts can be grouped into six different areas:

Exhibit 1: Overview of structural trends reshaping the Financial Services industry



Source: Prepared by the authors from several sources.

In the introduction to Revenue Growth: Four Proven Strategies,^c Professor Thales Teixeira of Harvard Business School writes: “Today’s business environment requires that managers adapt and change their business models on an ongoing basis. Fast-paced dynamics demand a constant need for firms to amend their strategies in order to achieve sustained revenue growth.” But what can leaders do to sustain growth in this volatile, uncertain, complex, and ambiguous (VUCA¹) business environment?

INNOVATION: A PROMISING SOLUTION

Corporate entrepreneurship can extend an organization’s competitive advantage through internally generated innovations that may involve starting up a new business inside an old one, renewing the existing organization, or changing the rules of competition for an entire industry.^{d,e} In fact, according to the current industry trends that we identified above (See Exhibit 1), innovations related to customer experience improvements are becoming more and more critical, which is why we believe that Design Thinking, as a tool to innovate, will grow in importance.

In a competitive environment such as the current banking sector, corporate entrepreneurship is essential for long-range success. Additionally, key innovations are taking place around the customer experience (such as user-friendly front-ends, omnichannel, and fast response), so that a thorough design of products and services revolving around the client and supported by technology, has become critical.

Whether banks think the new fintech players are to be trusted or not or whether they believe the new trends are passing fads, the risk of sitting by idly and leaving things to chance is too great. The banks have turned to innovation and begun to incorporate design profiles into their organizations. As a result, 95 percent of the banks analyzed for this study have rushed to create innovation labs in the past few years within their companies to address the disruption and adapt to a changing industry landscape.

A key area of investments by banks has been in new talent, such as designers and graphic artists, to help their organizations innovate. This trend is corroborated in hiring profiles. According to LinkedIn’s search engine of jobs, 98 percent of the 15,403 available design-related jobs in financial services in the United States had been posted in the previous month (September 26, 2016).

Case: Capital One – United States

Incorporating design profiles into Financial Services

Capital One is also evidencing the increasing importance that banks are giving to incorporating Design Thinking into their strategic planning.

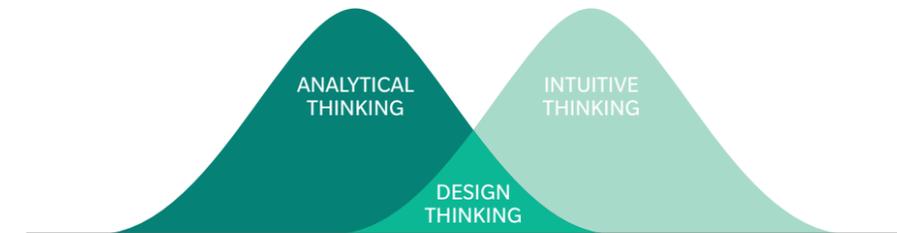
In 2014, Capital One hired a new first vice president of design: Daniel Makoski, founder of Google’s modular project Ara phone, and a member of Google Advanced Technology and Projects group, the division where most radical innovations and technological advancements take place.^f

Later that year, Capital One acquired Adaptive Path, a consulting design firm focused on user experience, showing the importance the bank is placing on increasing customer focus and implementing Design Thinking across all the value chain.^g

¹ Volatility, uncertainty, complexity and ambiguity – see Bennett N., Lemoine J., “What VUCA Really Means for You,” *Harvard Business Review*, 2014.

DESIGN THINKING AT THE CORE OF INNOVATION

Exhibit 2: Design Thinking as the combination of analytical and intuitive thinking



Source: Adapted from Martin R., *The Design of Business: Why Design Thinking Is the Next Competitive Advantage*, Harvard Business Review Press, 2009.

FRAMING THE CONCEPT

Many people think that Design Thinking means going into a room with Post-It notes and having brainstorming sessions with no clear objective and limited business application. However, that is far from reality.

Design Thinking is a tool for innovation, which uses a consumer-centered approach that puts the discovery of highly nuanced, even tacit, consumer needs at the forefront of the innovation process. Beyond consumer needs, it takes into consideration feasibility, including both the available technological landscape (can we do it?) and viability (will it have a commercial market?).^{h,i}

While Design Thinking may seem radical and new, it has been in use for a some time. The history of Design Thinking can be traced back to the Participatory Design in the 1960s, a movement that was characterized by the quick development of software prototypes and that incorporated customer input into the development phase.^j Participatory Design gave way to User-Centered Design in the 1970s, which focused more on the needs and interests of end users by placing them in the center of the process.^k

In the 1980s, Design Thinking started to be seen as an alternative way to tackle problem solving, as stated in Nigel Cross’s *Designerly Ways of Knowing* paper in 1982. In 1987, Peter Rowe published a book called, *Design Thinking*, coining the phrase.^l Finally, in the 1990s Design Thinking’s popularity soared, and it started to be used for business purposes on a regular basis with positive impact.

Experts in the earlier literature have established the link between the use of Design Thinking and firm performance.^m In fact, according to the Design Management Institute’s Design Value Index, “design-led companies have maintained significant stock market advantage, outperforming the S&P [500 stock index] by an extraordinary 211 percent” from 2005 to 2015.ⁿ

Few would dispute that the use of Design Thinking and its incorporation into organizations' innovation efforts create value for customers and build loyalty. Nonetheless, how to make Design Thinking work and be effective in the banking sector is an open question.

DESIGN THINKING VERSUS TRADITIONAL BUSINESS THINKING

We will put forward what we believe are the key differences are between Design Thinking and traditional business thinking. Broadly, these differences can be grouped into three main categories:⁹

- Importance of the end customer
- Ideating environment
- Team composition

Firstly, in Design Thinking, the focus is shifted towards the end user. This is achieved by an empathy exercise: trying to better understand customer needs and behaviors from their own perspective. This process results in identifying possible solutions that respond to customers' problems or satisfy their needs. The solutions are not necessarily designed to justify an ongoing initiative, but rather to learn from customers to find new initiatives.

Furthermore, research that relies exclusively on data (rather than incorporating subjective elements like empathy) may allow one to know the facts (what the customers did and when they did it), but it does not reveal the rationale and mechanisms driving these actions. By engaging in Design Thinking and getting closer to the end customer, banks are better able to understand the reasons behind those actions, and in turn prepare for possible future patterns of behavior if the same reasons remain in play. This also implies that one ought not to rely necessarily on what the customer says (that is, customer research), but rather on what the customer actually does. This mix of relying on data, intuition, and experimentation can provide more relevant insights than just validating a problem with the current means of data analysis.

Secondly, Design Thinking is accompanied with a stimulating atmosphere that promotes new ideas and encourages the participation of the entire team. Combining creative brainstorming with structured processes and team diversity creates a fruitful environment that gives rise to ideas that would not occur to one single person. This is reinforced by the "test and learn" philosophy that is an integral component of Design Thinking, encouraging team members to learn from failure and reduce their aversion to risk, facilitating more frequent breakthroughs and feedback from customers. Such an approach ultimately enables organizations to think outside the box and frame the future more imaginatively.

Thirdly, Design Thinking doesn't require that the people solving the problem be experts in the specific subject, but rather that they have different profiles and diverse ways of thinking to bring to the process. It also promotes collaboration and the airing of new ideas, thus reducing the risk of relying on any one person.

In conclusion, the combination of an end-user focus, stimulation of a creative ideas process, and leveraging a diverse team sets the grounds to help organizations challenge their thought process in developing a competitive advantage.^P

Table 1: Differences between Design Thinking and traditional thinking

	TRADITIONAL BUSINESS THINKING	DESIGN THINKING
Goal	Management	Innovation
Importance of end user	<ul style="list-style-type: none"> • The customer is another important factor to take into account in the process • Customer needs and behaviors come from customer research (what the customer says) 	<ul style="list-style-type: none"> • The end user is at the center of everything • The objective is to understand the underlying customer needs and behaviors and the rationale behind them
Ideating environment	<ul style="list-style-type: none"> • Innovation is limited to digital or technology teams and specific innovation centers • Product launches are carried out at a late stage of the process, after several iterations, and after having had them checked by internal divisions and performing market research • Working environment is designed to promote efficiency • Products are only subject to minor upgrades • Validates a problem that exists in order to assess current states analytically 	<ul style="list-style-type: none"> • Innovation is at the core of the whole organization • Prototypes are built and launched to the market whenever an idea is conceived • Working environment is designed to foster innovation and generation of new ideas (lower hierarchical standards, brainstorming sessions) • Feedback from customers is constantly incorporated into the prototypes • Relies on data plus experimentation in order to assess future possibilities imaginatively
Team composition	<ul style="list-style-type: none"> • Team members tend to have similar backgrounds and/or experiences • Similar individuals working in silos 	<ul style="list-style-type: none"> • Teams are specifically made up of people with radically different profiles and experiences • Diverse thinkers working together

Source: Prepared by the authors.

HOW CAN DESIGN THINKING BE SUCCESSFULLY APPLIED TO FINANCIAL SERVICES?

Design Thinking should be a cornerstone for how financial services firms devise strategy – allowing them to evaluate different potential business model scenarios, as well as the requisite execution capabilities.

At the intersection between Business Modelling and Design Thinking, we find the "upstream" application of Design Thinking, which makes reference to understanding the underlying customer needs and behaviors from a leadership perspective and working back from them to design new products or services.

On the other hand, the intersection between Agile Execution and Design Thinking results in the "downstream" application of the method, which entails rapidly building out and prototyping capabilities, according to identified customer needs and behaviors.

Exhibit 3: Upstream of Design Thinking

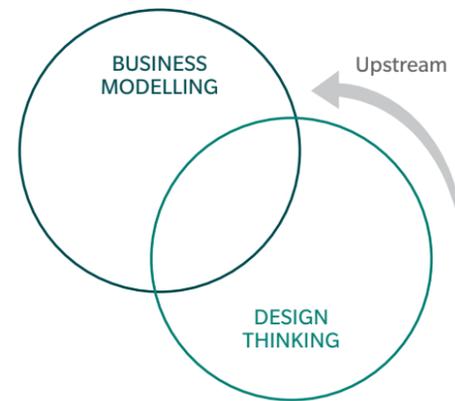
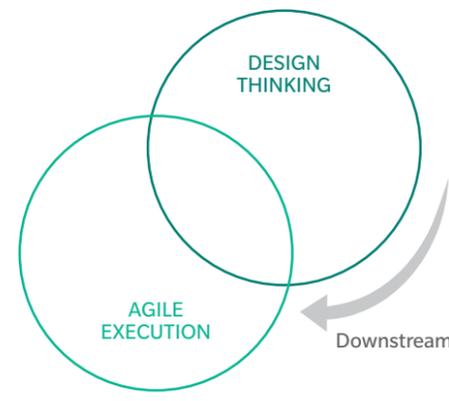


Exhibit 4: Downstream of Design Thinking



Source: Prepared by the authors.

Banks have begun to set up innovation labs and to apply Design Thinking within their organizations. However, they struggle to make it part of their day-to-day culture and processes. In fact, 63 percent of respondents to a recent survey of chief innovation officers, user experience senior consultants, and individuals tasked with innovation and design said that Design Thinking initiatives did not advance and lead to successful solutions.²

Anticipating the firm’s business modelling requires empathy: thinking of people and their lives, understanding genuine customer behavior, and working backwards from there.

Today, we live in a world of demand scarcity and oversupply, so it is key to understand the drivers of customer demand to build one’s business strategy. It is necessary to put oneself in the client’s shoes, and rethink the experience from the end user perspective. Tried and tested tools such as “Day in the Life Of” (DILo)² provide a structured way to tackle this process. By adopting such an approach, banks will be able to focus both on what consumers really need (not what they say they need) and why (deep needs and goals of customers). Logically, this requires a change in mindset that implies that end users will have a still greater importance.

Once the behavior of customers is understood, the firm should adjust its business model and position itself to develop sustainable competitive advantages and new sources of growth. Given new life and work standards due to disruptive technologies, financial services firms need to adapt their business models to build and sustain new competitive advantages.

At this point, the strategic business modelling has been clearly defined, so it is time for companies to execute and develop their operational processes. To do so, Design Thinking supports companies in what we define as the “downstream” application of the method. Its purpose is to reveal capabilities and systematically source and build out capabilities, in rapid

² DILo is a useful tool in Design Thinking that recreates a specific experience in the way that a customer would live it. Therefore, it contributes to the purpose of putting the end user at the center of the process.

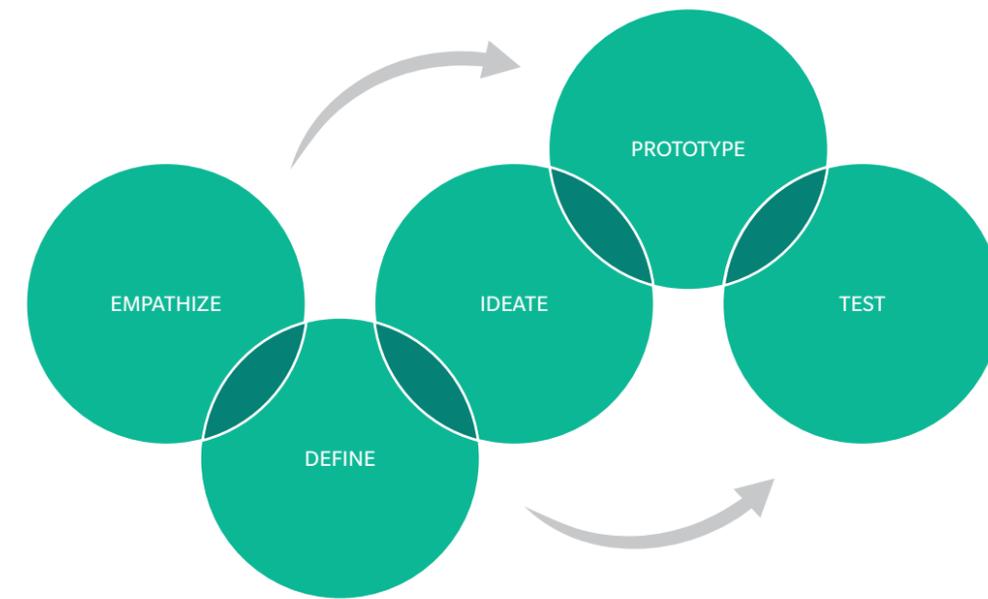
cycles, with interdisciplinary teams: design experts, software artisans, data scientists, and consumer insight researchers together with business, IT, and legal/compliance people.

Stakeholders throughout the whole value chain can contribute to prototype generation and provide feedback to others, thus increasing the potential for putting more ideas into practice and having them adapted to actual customer behaviors.^R

DESIGN THINKING PROCESS OVERVIEW

Practically speaking, the Design Thinking process can be split in the following five stages: Empathize, Define, Ideate, Prototype, and Test.

Exhibit 5: Building capabilities with Design Thinking processes



Source: Adapted from An Introduction to Design Thinking Process Guide. Hasso Plattner. Institute of Design at Stanford.

The Empathize phase has been covered earlier, as part of the strategic application of Design Thinking. In processes that are human-centric, empathy is essential to understand the problems and needs of the end users, and to model the firm’s strategy.

“Define” involves reviewing all the information gathered during the “empathize” stage in order to define the problem that is to be solved, and start setting goals and objectives.

“Ideate” is encompassed within the operational application of Design Thinking. At this stage, the objective is to think about new ways to solve the problems identified with your business strategy. It involves generating ideas to come up with innovative solutions. Some specific techniques such as bodystorm³ or brainwrite⁴ are commonly used.

“Prototypes” is necessary once the ideas have been generated. It is essential to start producing cost effective and simple prototypes that generate feedback from potential users or developers, and give shape to more refined prototypes little by little. In this way, a conversation around the product is started.

“Test” is the next phase, in which the purpose is to get feedback from the end users. This stage is related to the Empathize one, since the objective is to understand what the customer thinks about the product, and why he/she thinks that. Here, DILOs are again very useful, since they enable one to test the product in a real-life setting.⁵

KEY CHALLENGES TO OVERCOME IN THE APPLICATION OF DESIGN THINKING IN FINANCIAL SERVICES

The results of our research provide an initial foundation to frame the main challenges that banks face when applying Design Thinking, and some preliminary solutions to mitigate them. This research included a review of literature, study of business cases, data analysis, field interviews, and several experiments⁵ (see Appendix: Method).

We grouped the challenges into three levels: leadership, team, and individual. At the leadership level, there was a lack of resources to carry out the last stages of the Design Thinking process, and unrealistic expectations about generated outputs; plus, the level of detail was too low. At the team level, there was a loss of focus during the process, time constraints, and other specific management issues. At the individual level, the team leaders were sometimes described as weak facilitators, and there were also some participant issues. (See Exhibit 6.) The following sections of the report provide more detail for each of the challenges.

³ Bodystorming is a roll-playing act in which the design team plays a scenario of a situation to gain deep understanding of that situation. The method is most valuable to use as a means to extract new ways of thinking and new information about the situation rather than only discussed.

⁴ Brainwriting is a technique similar to Brainstorming and Trigger Sessions. The general process is that all ideas are recorded by the individual who thought of them. They are then passed on to the next person who uses them as a trigger for their own ideas.

⁵ Over one year, with eight groups of executives – with three to seven people per group – meeting in a room for sixty minutes to solve a management challenge using Design Thinking dynamics. In each session, there was a meeting facilitator and a researcher. The research member gathered feedback during and after the meetings to identify the eight most common challenges in the process of Design Thinking.

Exhibit 6: Challenges applying Design Thinking

LEADERSHIP LEVEL

Lack of a resource	Unrealistic expectations	Poor challenge
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TEAM LEVEL

Loss of focus	Time constraints	Management team
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INDIVIDUAL LEVEL

Weak facilitator	Participant issues
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Source: Prepared by the authors.

At the leadership level, the first key challenge we identified was a lack of resources to execute such a process correctly. For example, in some instances, banks lacked specific technology design and development skills needed to generate a prototype quickly; such capabilities are not part of the organizational or functional DNA of the IT function at many banks.

Secondly, there were unrealistic expectations from the leadership team about the outputs, sometimes measuring the Design Thinking process under the performance indicators of the current business model, rather than on the growth potential of the new business model.

Thirdly, the challenge or goal was poorly defined: It was either too generic or else not supported with enough data.

CHALLENGE	SOLUTION
Lack of resource	Ensure the buy-in and continuous involvement of decision makers
Unrealistic expectations	Guarantee that the senior managers understand that the output, although it is a testable prototype, is seldom scalable
Poor definition	Be as specific as possible in the definition of the challenge and the scope of the exercise

An example of a successful buy-in from the leadership level is the case of Cathy Bessant, Bank of America’s chief technology officer, who explained her approach to innovation at a company that increasingly viewed itself as a fintech player.

Case: Bank of America – United States

Realigning the business model towards innovation

As Ms Bessant said, “It’s more powerful to capture innovation from 10,000 people than to put 10 people in a lab. We do other things because we can’t fail to capture the power of Silicon Valley.”⁵

With the alignment of the business model and the buy-in of the C-suite, Bank of America undertook a user-centered redesign of its process for account registration. Thanks to this re-engineering process, the number of online-banking registrations rose by 45%.[†]

At the team level, our research also revealed three relevant challenges. In the first place, we saw there was often a loss of focus during the process. For example, participants came up with proposals that did not directly solve the problem.

In the second place, the team asked for more time during each session or lacked time for one of the steps in Design Thinking. Usually teams did not sequence their activities properly.

Finally, there were other management issues during the whole process such as difficulty in arranging concrete time slots in the executive agendas of team members to ensure the exchange of ideas from different business units.

CHALLENGE	SOLUTION
Loss of focus	Focus is not on what customers say, but on what they do. Include team members from the revenue-generating department that will propose the product to the end customer
Time constraints	Structure the unstructured. Although the process is open, specify deadlines for intermediate steps in the design thinking process
Management issues	Iterate and gather feedback after each session about how to improve the process

In order to tackle these challenges banks should redefine their execution to adopt agile principles, as in the case of Auckland Savings Bank. The adoption requires a change in mindset. For example, to embrace agile development methodologies, it is recommended that software be built incrementally from the start of the project, instead of trying to deliver it all at once near the end. This is done by breaking projects down into smaller bits of user functionality called user stories, prioritizing them, and then delivering them continuously in two-week cycles.

Case: Auckland Savings Bank – New Zealand
The competitive advantage of agile execution
 Facing the pressure of fintech disruptors, ASB New Zealand decided to improve the user experience of its customers through agile principles.
 The bank used video chat to interact directly with customers over mobile devices, reducing the need for visits to a physical branch.
 Competitors that have remained on the sidelines may argue that in-the-flesh interactions still form an essential part of day-to-day operations. However, the rapid growth of branchless banking in both traditional and emerging markets should sound the alarm for stragglers.

This redefinition includes: focusing not on what customers said but on what they did, including team members from the business side early on, specifying deadlines for intermediate steps of the Design Thinking process, and fostering in senior management the understanding that outputs can be preliminary and not necessarily be fully scalable and usable from the start.

Engaging into Design Thinking in a partial way, by creating an innovation lab, but leaving the rest of the organization unchanged, can create issues downstream, particularly if the right collaborative mindset and structure is not adopted from the start. Specifically, this fragmentation may make it difficult to develop or scale the ideas generated during the ideation phase.

At the individual level, our research also identified two challenges that arose when applying Design Thinking.

Firstly, team members sometimes described their meeting leaders as weak facilitators because either the person was not introduced properly at the beginning of the meeting or the person's functions were not clearly defined.

Secondly, there were issues with participants who did not understand the views of other team members, lacked communication skills to justify their ideas or were not prepared enough to contribute to the meeting.

CHALLENGE	SOLUTION
Weak facilitator	Select someone with a hybrid profile who understands the styles of thinking and communication of the team members and who understands the emotional intelligence of each team member
Participant issues	Define few but clear rules and select each team member in advance to identify complementary patterns among participants' expertise

We identified solutions such as the election of hybrid profiles as facilitators, the definition of clear rules during the process, and the selection of complementary patterns among participant's expertise.

OCBC Bank is an example of an institution that successfully implemented Design Thinking principles.

Case: OCBC Bank – Singapore
An internal revolution: the introduction of Design Thinking
 Through Design Thinking principles, a diversified team within OCBC Bank developed the initial product concept based on customers' insights.
 Once the first product concept was ready, the team had a co-creation workshop with a front-line employee. During the session, co-creators were not merely validating what had been developed, but were redefining a new product communication concept.
 The team prototyped communication ideas with front-line employees, using simple materials and stationery. By involving employees in the process, the team not only was able to design what would work for them in an advisory meeting, but also learned how to explain the product in a simple and compelling way.^U
 After the process, OCBC Bank increased sales of its new investment product by 150 percent and increased their customers' trust perception.

APPLYING DESIGN THINKING

THE CASE OF THE NATIONAL AUSTRALIAN BANK

ADVANCED DIGITAL CREDIT UNDERWRITING SME 2.0

Earlier this year, Oliver Wyman partnered with the National Australian Bank (NAB) to develop a new solution, called the NAB Quickbiz Loan, for their small and medium enterprise (SMEs) clients. By applying Design Thinking through the five explained steps (see Exhibit 10), we were able to work backwards from the client's needs in order to create a truly compelling product.

Exhibit 7: Screenshot of the NAB Quickbiz Loan platform



Source: NAB Quickbiz website.

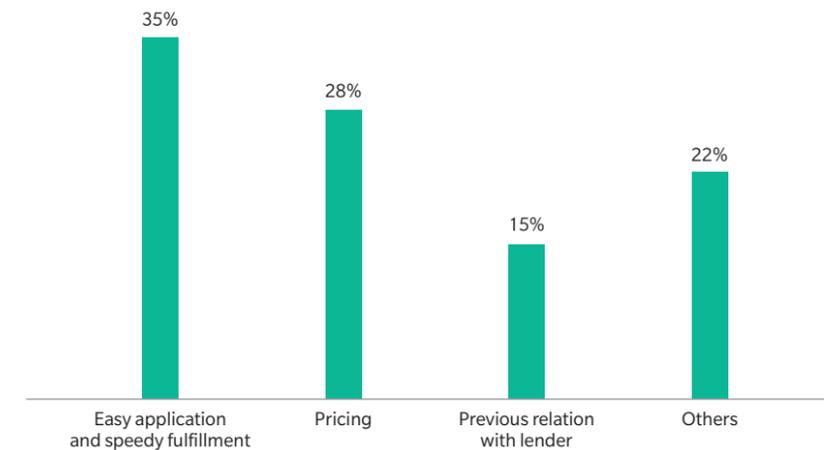
The final output consisted in a simple three-step online application that was linked to a dynamic cash-flow credit model that was able to provide unsecured business loans up to \$50,000 to SMEs, making decisions within 60 seconds and taking maximum three days to disburse funds.

EMPATHIZE

Firstly, we rethought the whole lending process from the end user perspective. Using DILOs we were able to relive the whole lending process through which an SME has to pass in order to obtain financing.

Exhibit 8: Factors that matter most when deciding where to apply for a business loan

N=711, AVERAGE POINTS ALLOCATED (OUT OF 100)



Source: Prepared by the authors.

DEFINE

Secondly, thanks to the analysis, we found that:

- The process was too complex, while customers were looking for a simple credit process
- Small businesses predominantly prefer unsecured product options
- Online / mobile services make the biggest difference in the credit experience and will be the primary driver of differentiated service for customers in the future
- The process was too time consuming

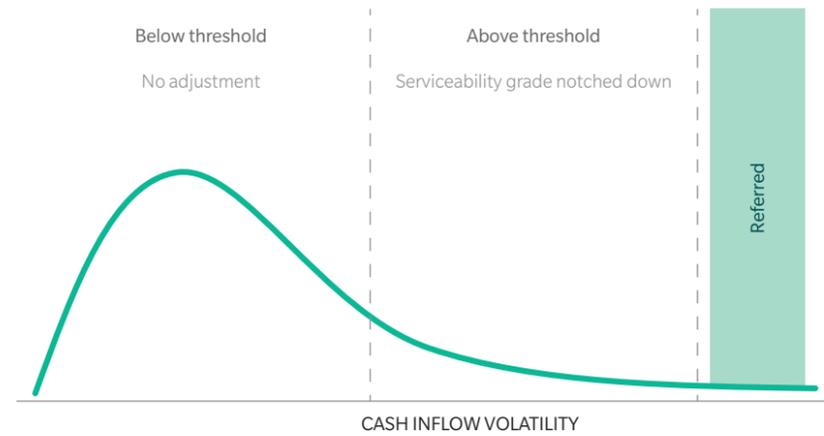
IDEATE

Thirdly, having understood and defined the end user's needs and behaviors, we started generating ideas and in the end agreed that the product should abide by the following:

- **Radically simple.** Be embedded in a convenient channel that allows access anytime, anywhere. The application had to be limited to a three-step process in order to avoid complexity problems from the previous application channels. The process had to be redesigned and simplified end-to-end.
- **Friction is the enemy.** Information that has already been provided to the bank cannot be asked for again. The model will be prepopulated from available internal data from existing customers, and completed with imported data from external sources (such as, accounting platforms).
- **Rapid decisioning.** Prospects should be converted in one go, so that they never leave without a decision. Automated credit assessment will be ensured through advanced credit models that leverage dynamic cash flow data to continuously refine calibration levels.

Exhibit 9: Customer credit model

OF SME CUSTOMERS



Source: Prepared by the authors.

In short, the final idea was to generate a dynamic customer cash flow credit model that continuously refined calibration levels and allowed for an automated assessment.

PROTOTYPE

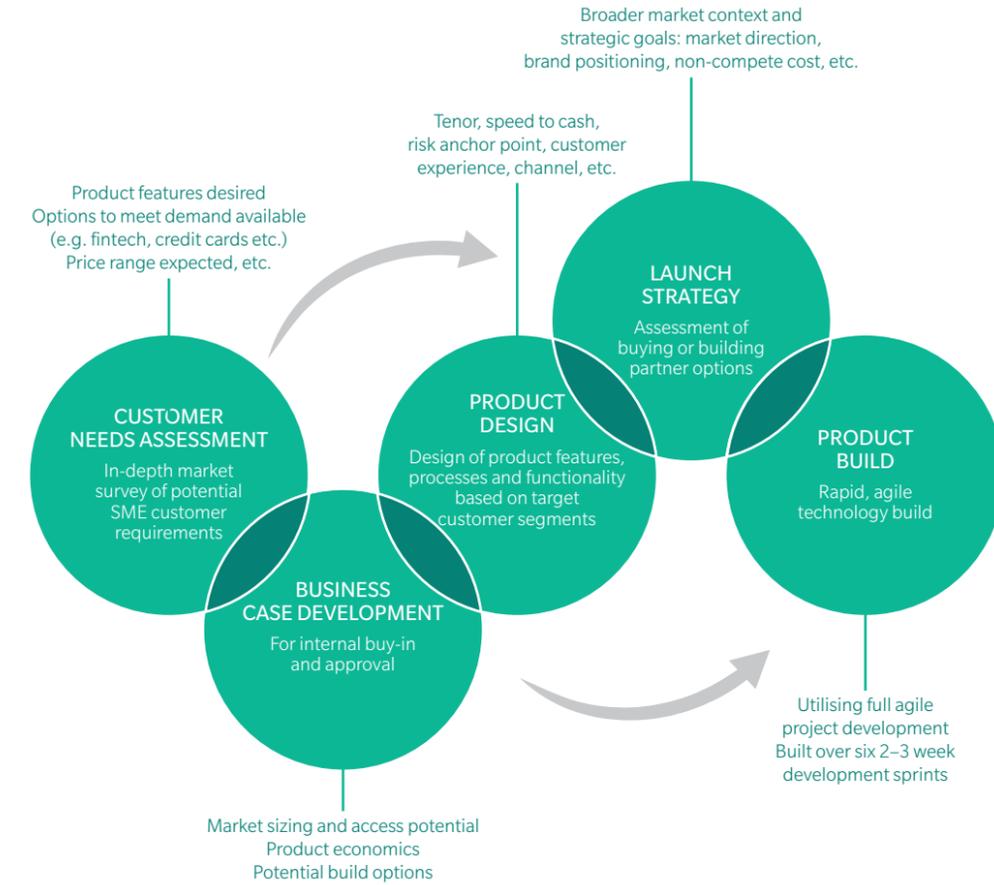
Fourthly, the first model prototypes started to be developed and tested with some of the current bank's customer base. Constant iterations enabled us to come up with a more refined version of the product.

TEST

Lastly, at this point it was time to put the product into the end user's hands and asked for feedback. We experienced the process from the user perspective to see how it worked. Consequently, we were able to incorporate feedback into the prototype model. For instance, incorporating additional cash-flow risk indicators allowed for more accurate risk scoring and credit decisions.

The final step consisted in rolling out the service to SME clients and non-clients. Thanks to the efficient collaboration, the concept to launch was completed within six months.

Exhibit 10: Overview of the application of Design Thinking during the project with NAB Bank



Source: Prepared by the authors.

CONCLUSION

DE-BANKING IS NOT THE END OF BANKS BUT THE BEGINNING OF DESIGN THINKING

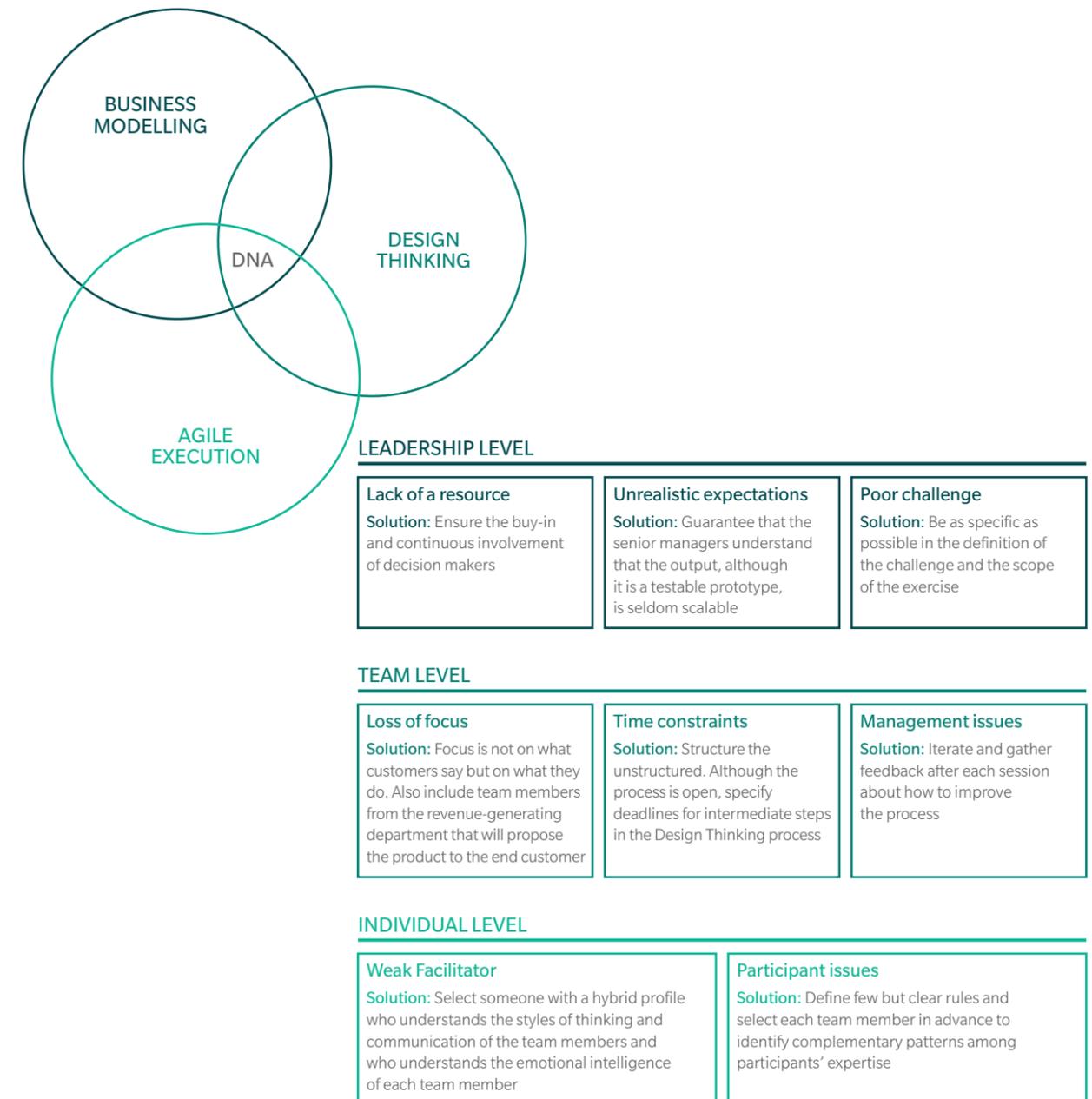
By improving the user experience, Design Thinking not only has a positive impact on customer relationships, it also adds to the value proposition of the bank's business model, and can lead to a sustainable source of revenue growth.

If Design Thinking is established as a key component of their strategy, it helps to position the business model of financial services firms by understanding the underlying customer needs and behaviors. And with a set strategy in place, Design Thinking enables firms to build out prototypes, test and learn from them, and finally launch the products and services that will help them succeed.

Though applying Design Thinking in Financial Services may have some challenges at different levels, we have identified several solutions that should help corporations in a successful application of the method.

Finally, the question remains: Is this the end of banks as we know them? We believe that while the banking sector is going through a period of disruption driven by digitization, new regulations, changing customer behaviors, low growth perspectives, a sticky cost base, and increased competition, this is not the end of the sector. Our view, instead, is that this marks the genesis of the banking sector's new DNA: a combination of changes in business models, agile execution, and Design Thinking.

Exhibit 11: Challenges and solutions for applying Design Thinking



Source: Prepared by the authors.

APPENDIX

METHOD

In order to achieve the objectives, set out in this study, we have applied a variety of techniques. The combination of those methods allowed us to capture with greater precision and rigor the answer to the question: “What are the main constraints on the application of Design Thinking in the banking sector and how should it be applied?”

First, to contextualize and structure the research analysis, we explored the available literature related to the topic such as refereed articles, non-refereed articles, business cases and studies. Some of these sources are cited as reference.

Additionally, 17 companies were analyzed in more detail, out of an initial pool of 47 banks. In each of the 17 banks, the research process involved gathering publicly available online data about the companies and their initiatives related to innovation and Design Thinking. Second, media articles related to the topic were sought using the Factiva database. Third, data analysis was carried out using several global indexes and financial data such as the Orbis database. Fourth, gathering images of the innovation labs and items associated with the Design Thinking process that the teams had used to make improvements.

In the end, 17 cases from 11 countries were selected out of 47 analyzed banks. Five of those 17 banks had revenues of more than \$70 billion. The selection followed several criteria, such as the amount of revenues and assets, the country of its headquarters, the level of performance applying Design Thinking, etc., ensuring a diversified sample for analysis.

Second, we met with eight groups of senior executives – with three to seven people per group – meeting in a room for sixty minutes to solve a management challenge using Design Thinking dynamics. In each session, there was a meeting facilitator and a researcher. The research member gathered feedback during and after the meetings to identify the eight most common challenges in the process of Design Thinking.

Finally, the evidence found from the literature review and the initial examination have been nuanced, contrasted, and complemented by the accomplishment of fieldwork consisting of interviews.

Some of these interviews were in situ and some of them were by videoconference. The content was non-structured interviews with open questions, depending on the interviewee.

ADDITIONAL EXHIBITS

Table 2: Information about the analyzed companies (2016)

	NAME	HEADQUARTERS	ASSETS (€BN)	REVENUES (€BN)
1	Auckland Savings Bank	New Zealand	70.0	4.2
2	Bank of America	United States	1,982.6	86.5
3	Barclays	United Kingdom	1,035.6	26.8
4	BBVA	Spain	750.1	30.1
5	BNP Paribas	France	1,994.2	63.7
6	Capital One	United States	307.6	22.6
7	Deutsche Bank	Germany	1,629.1	43.5
8	HSBC Holdings	United Kingdom	2,218.6	68.3
9	Industrial and Commercial Bank of China	China	3,149.3	148.4
10	Intesa Sanpaolo	Italy	676.5	22.6
11	JPMorgan Chase	United States	2,174.4	93.4
12	National Australian Bank	Australia	600.9	23.3
13	OCBC Bank	Singapore	253.1	8.1
14	Royal Bank of Canada	Canada	743.8	30.7
15	Santander	Spain	1,340.3	70.4
16	Standard Chartered	United Kingdom	589.7	18.5
17	Wells Fargo	United States	1,645.9	81.2

Source: Prepared by the authors

Table 3: Estimated year when innovation labs were created or Design Thinking started to be applied, the banks' focus during the Design Thinking process that was analyzed, and the outputs achieved

	NAME	BEGINNING	FOCUS	OUTPUTS
1	Auckland Savings Bank	2013	Move to mobile using Design Thinking	Reduced cost
2	Bank of America	2010	Redefining the account registration process	Increased online traffic
3	Barclays	2006	Teaching Design Thinking through the organization	Increased innovation engagement activity
4	BBVA	2010	User experience through open innovation	Improved user loyalty and new products
5	BNP Paribas	2014	Combining Design Thinking with open innovation	Innovation of the value proposition
6	Capital One	2011	Teaching Design Thinking throughout the organization	More proposals per year
7	Deutsche Bank	2008	Improving the user experience through the IT division	Increased customer proximity
8	HSBC Holdings	2015	Recruiting design talent	More proposals per year
9	Industrial and Commercial Bank of China	2015	Product development	Improved user experience
10	Intesa Sanpaolo	2014	Improving UI and opening new sectors	New products or services
11	JPMorgan Chase	2014	Increasing interaction in the distribution channel	Improved user experience and decreased costs
12	National Australian Bank	2013	Integrating customer behaviors into business model	Improved SME lending process
13	OCBC Bank	2012	Redefining the account registration process	Increased product sales
14	Royal Bank of Canada	2016	Partnering with fintech start-ups	Improved perception of the market
15	Santander	2014	Investment strategy	New product
16	Standard Chartered	2010	Developing new capabilities for clients	Improved customer experience
17	Wells Fargo	2014	Incubating new business ideas	More proposals per year

Source: Prepared by the authors

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