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DESIGN

The design thinking fallacy – are banks immune to innovation?

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DESIGN THINKING

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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 stores 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.

Lance Levy, **Capco CEO**

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

THE DESIGN THINKING FALLACY – ARE BANKS IMMUNE TO INNOVATION?

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ABSTRACT

This paper examines why the financial services industry may be considered a laggard in innovation compared to other industries such as commerce or transportation. Inherent factors such as risk culture may negatively impact the overall ability to innovate. In this paper, we look at the potential of 'design thinking' to help financial institutions become more innovative, proposing a way forward to embed this innovation methodology effectively within a financial services company.

1. THE STATE OF INNOVATION IN FINANCIAL SERVICES

1.1 Concepts of service innovation in financial services

Leaders of most service businesses find little guidance in existing studies of innovation. The central themes of R&D, intellectual property, and breakthrough technologies often miss how service businesses evolve by steadily generating and implementing new ideas. The lack of guidance would not be puzzling if services' share in the business sector were small, or if innovation in services were unimportant. However, neither is true. In modern economies, service businesses account for most of the value created. In the U.S., for example, services now account for about 78% of GDP; the major economies of Europe and Asia are not far behind.

Even the manufacturing sector, which accounts for most of the remainder, incorporates significant services in the products it creates.

Innovation in services is important in part because it is one of the only effective ways to fight commoditization. Forces behind commoditization of services are fierce, and getting more so, as these markets become more open, more tradable, and more contested. Commoditization often occurs even faster in services than in physical products because innovations are easier to copy, there are fewer patent protections, lower front-end capital investments, and shorter product cycles. The rapid rise in global services trade, the significant liberalization in cross-border flows of services and capital, and the rapid globalization of many service firms are evidence of this trend. In many industries, for example, compensation for providing intermediation – the services of middlemen – has collapsed.

Despite these distinct trends, writing on innovation remains primarily focused on physical products and high technology.

We define innovation broadly as the combination of creativity and implementation. Thus, we focus on both the production of novel and useful ideas that improve effectiveness, as well as the methods used to put the creative ideas into practice. Innovation can include doing old things in new ways rather than developing completely

new inventions, which includes ideas originating from outside the organization that are customized to an organizational context or clientele. New ideas must be implemented – i.e., delivered to customers – to create commercial value.

Competing on service innovation requires a more intensive set of organizational practices than competing on physical product innovation. To understand these differences, we examine the practice of design thinking as a method for service innovation, applied to financial services.

There are service innovation pitfalls that arise from the unconsidered application of concepts conceived in a physical product innovation context. For example, research on physical product innovation tends to focus on radical, game-changing shifts, whereas innovation in services tends to be more fluid and evolutionary, and thus top competitors are characterized more by their steady pace over time than by making gains with long-shots. New product innovation in manufacturing involves significantly more fixed investment and greater commitment to longer production runs, making it necessary to move things more abruptly to justify these investments. Similarly, in new technology innovation, what is often at stake are new industry-wide standards and infrastructure, which tend to be more discrete. Exploring the differences between product and service innovation illuminates the importance of fostering a 'service innovation culture,' which we define as the consistent, coherent, and comprehensive presence of values and norms that promote fresh thinking and swift execution in service firms. Organizational structures and processes are the building blocks of this culture, and they include formal and informal incentives, socialization, role modeling, and venues for sharing information. The behavioral norms and values that define culture are vitally important in services, in contrast to physical products, because behavior itself is the product.

1.2 Design thinking – a five-minute primer

Design thinking is a service and product innovation methodology based on an iterative process between research, development, testing, and reengineering with a constant focus on the final user's acceptance. The methodology dates back to the 1960s, where the ideation approach was created in Palo Alto at the Stanford University. Today it is being applied in a global network of universities and workshops and practiced in all kinds of industries. Physical products such as the iPhone are likewise design thinking offspring, as are services such as AirBnB and Uber. Design thinking means many things to many people, and this pluralism persists into the practical implementation as well. There are a wide variety of process breakdowns and visualizations ranging typically between three and seven steps. Each phase, such as observing or testing, embodies one or more of the core ingredients of design thinking, such as empathy, reframing, ideation, prototyping, and testing.

FOUR THINGS DESIGN THINKING IS NOT

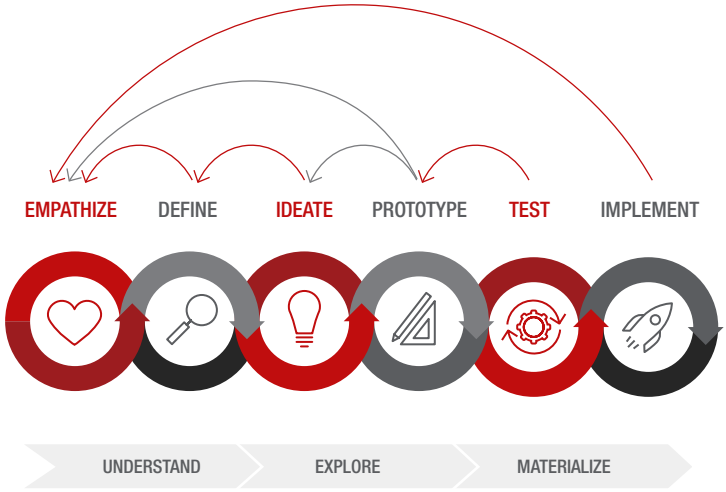
1. **It is not about how a product looks, but how a product works:** while the term 'design' can be reduced to the mere look and feel of a physical product, it is only one part of the design thinking methodology. Designing, in this case, combines the art of thinking about the functionality, features, usability, and the looks through the whole process [Berk (2017)].

2. **It is not about agile or scrum, but about solving hard problems:** design thinking is a human-centered solution-driven cognitive process from which design concepts (e.g., products or services) emerge. Agile, on the other hand, is an approach for software development under which requirements and solutions evolve through the collaborative effort of self-organizing and cross-functional teams [Cooper-Wright (2016)].

3. **It is not about execution, but inspiring ideation:** design thinking is about learning through iterations, being creative, and daring to prototype different solution approaches. The final design cannot be defined at the initial stages, hence a simple process execution to reach a specific goal is not a part of design thinking. Henry Ford once said, "If I asked what people wanted, they would say faster horses." So, challenge to innovate.

4. **It is not about the process, but about a mind shift:** design thinking stands and falls with the team's knowledge of the methodology to create a suitable solution through a research and invention process that has to be embedded within a company's culture. One cannot just read a book about it and execute design thinking following a construction kit [Kadam (2018)]

Figure 1: The iterative process of design thinking, where the status quo is constantly questioned leading to the best solution



Source: https://bit.ly/2CvEu1Z

Depending on the size of the task, different iterations and building steps can be used. However, they always embody the same principles laid out in the design thinking cornerstones below [Dam and Siang (2018)].

- Design thinking **starts with empathy**, being curious and conservative is key to start a human-centered design and keeping the final user in mind throughout the process.
- **Reframing the perceived problem or challenge** at hand and gaining perspectives, which allow for a more holistic look at the path towards these preferred situations.
- **Collaborative and multi-disciplinary teamwork** is endorsed to leverage the skills, personalities, and thinking styles of many in order to solve multifaceted problems.
- **Convergent styles of thinking assist to isolate potential solution streams**, combining and refining insights and more mature ideas, which pave a path forward.
- **Tests the prototypes** that survive the processes further to remove any potential issues.
- **Iterates** through the various stages, revisiting empathetic frames of mind, and then redefining the challenge as new knowledge and insight is gained along the way.
- It **starts off chaotic** and cloudy steamrolling towards points of clarity until a desirable, feasible, and viable solution emerges.

2. INHIBITING FACTORS TO CUSTOMER-CENTRIC INNOVATION

2.1 Product-centric organization

Banks have historically preferred organizing along client segments and products. A typical banking organization will divide competencies, especially in the front- and middle-office, along private and corporate clients, and across retail, investment banking, and asset management.

Further, the client offering is structured in product silos – payments, cards, investment products, and financing are all distinct product lines managed in separate divisions with dedicated product managers.

By itself, this can make a lot of sense – matrix-style organizations tend to be efficient in allowing for cross-pollination of information across functional domains and business lines. However, customer-centric innovation is a function of both increased probability of new ideas being permitted to germinate and an organizational setup conducive to executing on those same ideas.

It can be argued that banks today are inherently averse to innovation as they function in highly compartmentalized divisions, with fairly weak execution structures. Efforts are underway to establish 'digital factories' and 'innovation labs', however these initiatives are seldom embedded into the wider organization, tend to be expensive, and produce results that are often removed from the realities of daily business. A more promising approach would ensure service-oriented organizations, organized with customer needs and their respective service portfolios in mind.

2.2 Financial and technical constraints

Major financial services firms need to budget in comprehensive, annual cycles. This stands in stark juxtaposition to a 'fast-failure and early-success' mentality, which accepts uncertainty as part of the process, and cannot always accommodate the budgeting process used today. While funds are allocated, banks tend to require comprehensive business cases, requirements analyses, solution designs, vendor assessments, and

detailed resource calculations up front. Rarely is time and funding allocated appropriately for explorative causes, to identify customer needs, rapidly test new ideas, and establish a strong, customer-centric project proposal.

That is not to say that the rigor of change portfolios is unnecessary – it definitely remains so. However, the question remains whether innovation can be preplanned and budgeted. A more promising approach would entail launching projects into a time-boxed, explorative phase, and gradually requiring refinements around financials. This can still be accomplished with annual budgeting cycles and can help lower costs via an improved product-market fit, coupled with an agile delivery approach that aims to deliver iteratively.

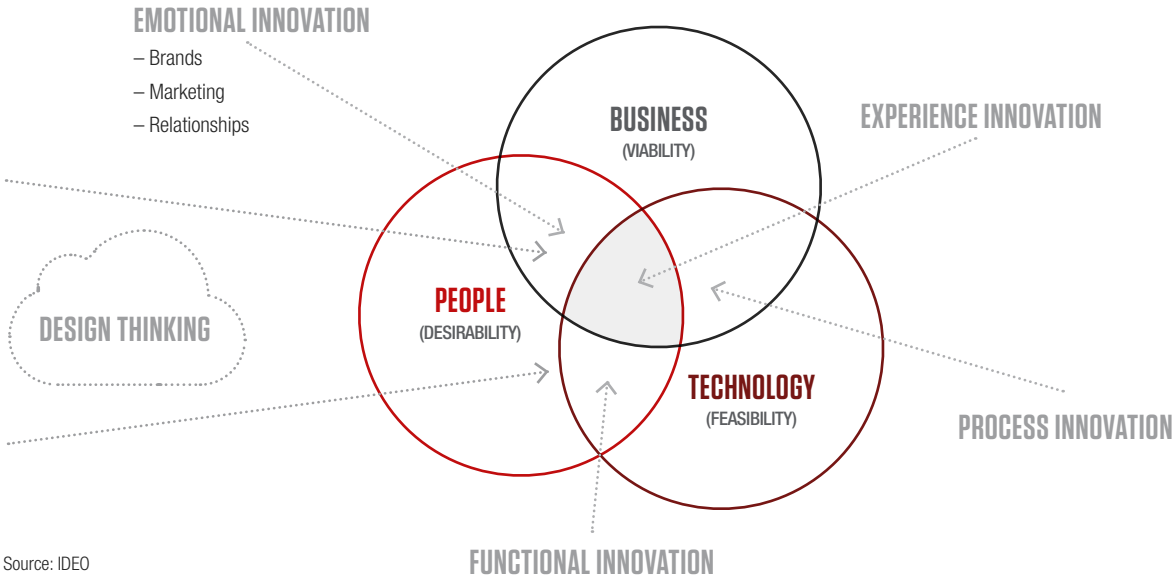
Further financial constraints are generated through legacy dependencies. Any effort to innovate on services often results in exponential investment in legacy platforms – thus making otherwise promising business cases unviable. Innovation requires an ability to leave behind the established status quo, and technology platforms in banks can pose the primary challenge to this effort.

2.3 Risk culture and risk aversion

Risk culture within financial institutions has evolved significantly since the global financial crisis. Led by American and European regulators, newly imposed rules on risk management and capital requirements have led financial institutions to divert resources to regulatory transformation and remediation, while investments in explorative undertakings such as research, development, and innovation initially plummeted. It took the financial services sector a few years to realize that holding back on innovation is not helping them move forward, so during the economic recovery most banks built incubation "labs" where even risk questions could be tackled.

The number of innovation labs have been increasing within the banking industry in recent years, and their numbers are growing. 87% of financial services firms say that they either have an innovation lab or have at least carved out some real estate for innovations.[1] This represents a 27% increase in the number of innovation centers in the past year.

Figure 2: Human-centered innovation



Source: IDEO

[1] https://bit.ly/2Ryhi7r

They can serve an important purpose in helping financial services firms pilot new technologies in a sandboxed environment prior to an enterprise wide implementation. This model is financially viable as banks can run an innovation center on a variable cost basis.

3. HOW DESIGN THINKING CAN ACCELERATE INNOVATION

3.1 Design thinking places the customer at the center

At its heart, design thinking is about being curious. It is about being a keen observer of things around you. You need to be curious about why things are the way they are, why things do not work, or why people behave the way they do. Once you nurture the mindset of being curious, you let go of judgment and seek to better understand everything around you [Kadam (2018)]. Being observant is about paying attention to the finer details. You need to ask questions when you start assuming and seek to understand what you do not know.

The next important thing that follows curiosity is empathy. When designing products, solutions, or business models for someone else, the biggest challenge is to understand the people you are designing for. And, therefore, the biggest mistake is to develop solutions without including the end-user, as it is often the case with banks. Often, the end-users' interactions are taken for granted, or worse, we tend to assume how they experience the world.

Banks' R&D departments and isolated project teams often disregard the issues that arise by not analyzing the needs of the end-user and solely developing on the basis of their knowledge and acceptance criteria. The golden key is to get an understanding of users' mental models, how the world looks from their perspective, and what their true needs are that need to be satisfied. Addressing the discovered needs not only satisfies the user, but also transforms an initial invention into a true innovation.

It should be noted that design thinking is not only for easy and functional "design" products, as all business relevant factors are taken in account throughout the development process. While developing empathy for the user and keeping them at the heart of the process is important, it is also crucial that the entire business perspective is kept in mind. To hit design thinking's sweet spot, the team has to not only consider the solution's human-psychological factors, but also ask whether it is desirable and, more importantly, viable and feasible [Brown (2009)].

3.2 The effectiveness of design thinking

Some might ask why the free-spirited design thinking approach should be chosen over other ideation methodologies. We hope that the following discussion can answer this question.

- **Risk reduction:** design thinking reduces the project and development risks through a continuous learning process. The so-called "fail forward" culture brings potential misperceptions from the beginning and throughout the process to light. Mistakes can (and have to) be made even in the early stages of the process to create a learning effect and steer the development in the right direction. Consequently, the project risks can be continuously reduced.
- **Failing forward:** the general high-end corporate setup has an unspoken zero-mistake-culture and thus **"failing" is often correlated with a negative outcome. Design thinking, however, paraphrases failure into learnings** and insights that are subsequently used to learn as an individual or team and ipso facto improve the ongoing development.
- **Fast cycles:** to achieve as many failures and win insights as possible, design thinking asks for fast and short iterative cycles. This **"fail often and therefore early"** is to be seen in coherence with "failing forward" and can happen through the process or at the end of a cycle [Leifer and Steiner (2010)]. The key is to set fixed development cycles and gather feedback from the end-user to spot the design problems; an approach that can lead to resistance in a waterfall dominated industry and, therefore, requires dedication from management and the whole team to follow the methodology. Fast testing and feedback cycles lead to quicker development and greater acceptance rate, which helps in the long-run.
- **The value of tangible prototypes:** all results in design thinking have to be in the form of tangible prototypes. Ideas are in general not real; hence prototypes can make ideas real, tangible, and testable [Brown (2009)]. While the demand for a physical prototype of a technical system is understandable, it can seem absurd to create a tangible prototype for a service-based business. A variety of successfully completed projects have shown that the use of storytelling, for example, can create the sense of tangibility. Furthermore, the use of prototypes has shown the benefit of simplifying complex problems by separating the overall target product into smaller components. This allows for a more focused development in the team [Brenner and Uebernickel (2016)].

In general, design thinking has the ability to reduce a project's risk factors, raise the customer's acceptance rate, and even deliver desirable solutions more quickly. This all is possible if the methodology is well thought through and accepted by all of the stakeholders.

> "If banks can develop a design thinking friendly environment and recognize the method as a promising means to foster innovation, they stand a fighting chance."

4. BEHAVIORAL CHANGE TO DEPLOY DESIGN THINKING

Taking into consideration the various factors that drive successful application of design thinking, we propose the following actionable behavioral changes that banks need to pursue.

4.1 Space, absence of fixed processes, and allowing change

Physical space and the work environment have emerged as key factors to facilitate change. Through adapting the physical environment, organizations are able to lower hierarchical boundaries, enhance ideation and creativity, foster and accelerate prototyping, and increase the rate of learning and change. The key concept for the spatial setup is flexibility. Space ought to allow for and support any kind of ideation and prototyping activities. Going through a number of rapid iterations, testing ideas, and the boundaries of the solution space via prototypes, allows the project teams to increase their rate of learning significantly.

Research points to the inability of any particular fixed process model to support the output of radical new products and services. A great example is DARPA, the U.S. Defense Advanced Research Projects Agency that has supported groundbreaking projects ever since its establishment in 1958. Unlike the majority of other business, government, or academic research organizations, DARPA is specifically and solely focusing on the creation of radical engineering and system innovations. Their mission is to "maintain the technological superiority of the U.S. military and prevent technological surprise from harming our national security by sponsoring revolutionary, high-payoff research bridging the gap between fundamental discoveries and their military use" [DARPA (2010)]. In fact, all projects may be defined by a set of criteria that have found their way into the urban directory as 'DARPA hard' [Urban Dictionary (2011); Van Atta et al. (2003)].

All projects must be:

a) Technically challenging (beyond current limits),

b) Actionable (proof of concept or prototype),

c) Multidisciplinary (complex), and

d) Far reaching (advances on a grand scale, radical).

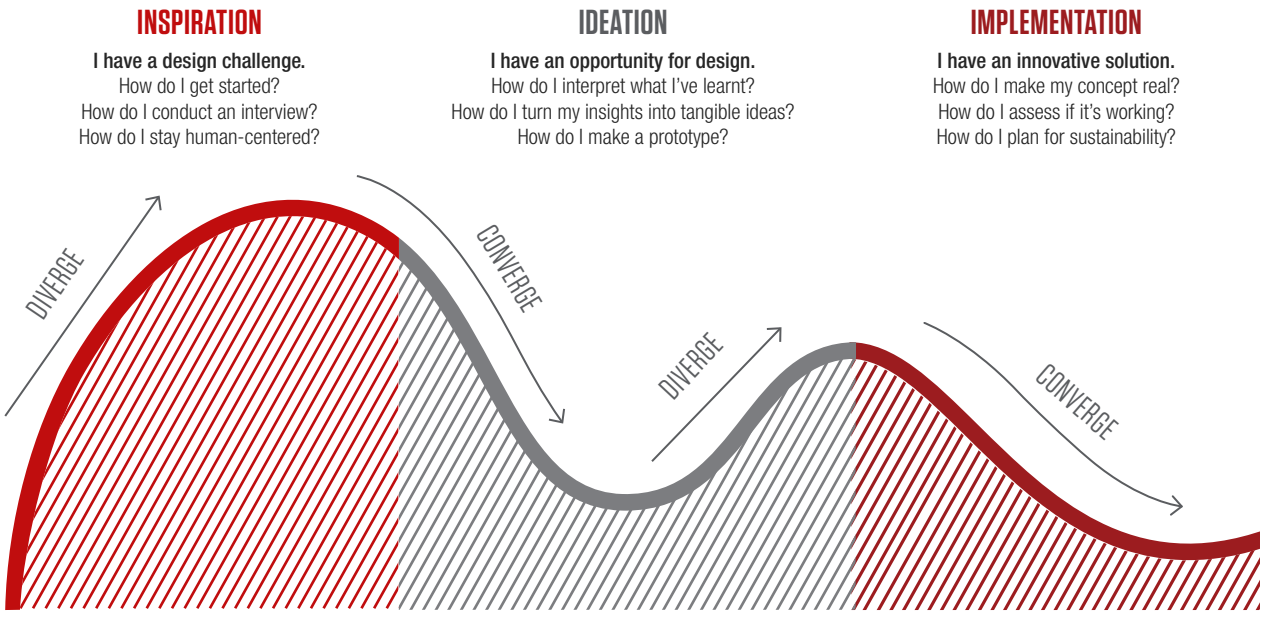
Carleton (2011) has securitized this remarkable test bed in her doctoral thesis. The most interesting observation concerning change is when projects and people are vision driven, have a focus on workshops and prototyping, and disregard documentation and project management rules.

The selection of DARPA programs depends on the creation of a vision. It is the starting point for any program, and the project champion, the program manager, embodies it. The ideation and iteration of this vision serves as the central focal point for the usually dispersed subprojects, teams, and stakeholders. Envisioning a certain technological future does not define or limit the future projects; it serves as an indictor of the current direction of the organization's efforts.

Interestingly, the main instruments to generate, iterate, and re-formulate such a vision are workshops and the creation of proof of concepts or prototypes at various stages. The first allows the socialization and evolution of the visionary ideas amongst all participating stakeholders, while the latter allows tangibly communicating and even testing the vision at various critical junctures. The program and project managers also enjoy a remarkable freedom from established processes and rules. No established system or documentation requirement is forced onto their activities. Prototyping is the norm and the specific activities follow the actual demand of the specific task at hand.

No institutional models are limiting people and their behaviors for the sake of generating economies of scale. Innovation and change are the generation of the new – the primary goal is the best outcome at certain budget constraints, not its process efficiency in terms of minimal resource allocation. Another point to consider is

Figure 3: The design process



Source: IDEO

the ways that go and no-go decisions are prepared and executed. Instead of relying on peer review processes or committees or other group-based decision tools (not to speak of pseudo quantitative stage gate filter variables), decisions are taken by the leaders who ultimately bear the responsibility for success or failure. Failure is accepted and preplanned. The underlying rationale is that peer review and committees are in fact hedging mechanism for taking tough decisions at the extreme end of the possible solution spectrum. They will inherently favor outcomes close to the sample's median opinion. Hence, traditional decision tools would prevent DARPA from actually attempting to deliver radical innovations. All of these activities, and most importantly the absence of fixed processes, serve to generate change that comply with the idea of DARPA, as described above.

As the prior discussion on space and flexibility, as well as on the absence of fixed processes, indicated, the major concept to support change and learning, the generation of radical new product and system solutions, is to allow change to happen. We do not assume to have control over the existing solution space, so we cannot preplan or manage it. Indeed, we are aware that the concepts that challenge the established dogmas have a higher chance to deliver radical improved value. Any systematic and fixed support system, inhibiting the creative use of space and the employing and combining of new processes, seems to counter the notion of change. Consequently, we attempt to provide the physical, organizational, procedural, and mental environment that allows the project teams to experiment and to prototype. This becomes especially difficult when proposed solutions counter the experiences and knowledge models of the professors and coaches.

Instead of prematurely ending the iteration processes at this point, we allow, indeed support, the testing of theses, ideas, and concepts. Very often, a failed prototype test, the hitting of the boundary of the possible solution space, generates the winning insights for either an extreme solution along that line or, even better, a new way that allows circumventing the existing limitations. To generate this kind of change, we attempt to minimize institutional, organizational, and procedural boundaries. We emphasize and support flexibility, and we force ourselves to let change happen. Hence, we do not prescribe procedural recipes. The focus on people and team development should be on skills, moves, and the demand for tangible prototypes. A word of caution: allowing, and even fostering of, this kind of ambiguity is difficult and demanding for the coaches and requires a conscious effort, especially on behalf of individuals who have to unlearn their organization skills to a certain extent.

4.2 Design process of divergence and convergence

Contrary to the classical and analytical design process applied for the development of incremental changes, the design process aiming to radical changes can be seen as an iteration of divergent and convergent activities [Alexander (1964)]. Banathy (1996) describes the divergent activity as "...consider a number of inquiry boundaries, a number of major design options, and sets of core values and core ideas. Then we converge, as we make choices and create an image of the future system."

This divergent-convergent process may be depicted as slowly closing funnel, linear over time [Cross (2000); Ulrich and Eppinger (2008)], or as repeating design cycles, spiral like, that iterate through the generic prototyping phases of design, build, and test [Thomke and Fujimoto (2000)]. The classical convergent phase is about optimizing the answer. It is deductive and inductive in nature and may comprise simple tools, such as the Pugh Chart [Pugh (1996)] or a Quality Function Deployment [Hauser and Clausing (1988)], or run on complex model simulations and optimizations.

The design thinking approach that we are favoring not only emphasizes the circular or spiral nature of the process (feedback loops were common but limited in the classical process models), but it clearly identifies the need of divergent search activities. Developers are constantly and rapidly going through design-build-test cycles. In each cycle, during the divergent phases, we are focusing on the problem rather than on the solution, trying to understand who really is the user, which elements are truly involved, how many other ways are there to solve the problem, and can we rephrase the challenge and circumvent the problem? These divergent activities usually result in a number of ideas or concepts that are in a next step built and then down-selected by testing.

4.3 Rapid and tangible prototyping

In the design process with clients, we concentrate on creating prototypes as fast as possible in order to test particular ideas, the design hypotheses behind the prototype. Speed of learning is key. As a result, our prototypes tend to be of low resolution and physical or tangible rather than virtual. Depending on the design stage, whiteboard, simple cardboard, and duct tape constructions, prototypes made from wood or clay etc. might be created. Each prototype is built to test a specific idea and/or a system interaction. They range from simplistic rough artifacts that merely resemble an idea (communication prototype), to lookalike prototypes (conveying certain external property ideas), to critical functional and functional prototypes (technical proof of concepts), to alpha and beta prototypes.

It must be noted that later stage prototypes cost an order of magnitude more in resources, both in time and money than early prototypes. It is, therefore, essential to concentrate on the early stage or fuzzy front end of the new product design. One of the most pertinent recent insights, based on dissertational related work of Jonathan Edelman [Edelman et al. (2009)], is that the choice of the prototype material or environment directly influences the amount and degree of the generated alternatives. The breadth and depth of the solution space explored seems to relate to the sophistication or resolution of the prototyping materials employed. A sophisticated CAD prototype is least likely to be considerably changed in following iteration cycles. The product architecture is implicitly fixed and the software and its capability limits possible ideation changes. Tangible 3D prototypes allow the creation of more alternatives with relative ease. These types of lookalike prototypes are especially good in conveying ideas and form factors to non-specialist users. However, once this level of resolution has been reached, changes tend to be incremental. If we contrast this to using very basic prototype material, simple cardboard, or even just a sketch, the possibility for more radical and faster iterations, and thus learning, is obvious.

As a rule of thumb, the early stage product development determines the level of radicalness of the final solutions. We, therefore, advise product development teams to stay in this early phase for more than a third of the entire available project time. We have to force ourselves to abstain from entering solution optimization in order to gain intimate awareness of the problem space. This increases the chances of us generating the real breakthrough idea we are looking for.

4.4 Need-finding, user testing, and experience enactment

Central at the early stage of the new product or system concept design is an intimate understanding of firstly, who actually is the end-user, and secondly, what are the real user's needs that we aim to satisfy with the solution. Often, projects start with a fixed set of specifications and requirements. This approach, very suitable for incremental change and innovation, focuses the attention and resources onto the optimization and execution of the selected concept. Time and again, final solutions do not meet end-user needs and need to be re-designed before deployment can succeed. This costs significantly more money and prestige than conducting more exploration early on. Consequently, we are concentrating on the first phase of the design process.

The first challenge lies in identifying the end-user to design for. Some iterations and perspective changes may unearth surprising users. Challenged to redesign satellite architecture, a research team at Stanford is currently focusing on the testing engineer as the target user. The pre-launch testing process ties significant resources due to the fact that satellites have not been engineered for modularity/mass customization and access to the sub systems that have to be tested again is typically outside the satellite design team's concern. Testing and validation become a large fraction of system integration costs that are, in turn, a major factor in net deployment cost.

In an unrelated case study, scrutinizing medical device development, it is not the patient, the obvious user, and their needs that are central for the success of a new product. Though, any new solution must at least be equal in terms of patient value added, the real litmus test lies in the value gained by the hospital and insurance companies, in relation to the change required by the practicing medical doctors. Who is the user for whom we have to design for in this case [Aquino et al. (2011)]? Once a single target user or a user system was identified, the researches attempted to gather information on the underlying needs that ought to be satisfied by the new solution. While surveying and interviewing users does give valuable information, very often users are themselves not capable of expressing their needs. Indeed, when confronted with something absolutely new, for example a device based on a new technology or material, users can only draw from analogies and not answer from experience. Even if they can, very often their personal perspectives are too limited to truly understand the problem. Observations, especially when analyzed systematically using video interaction analysis, result in a better understanding of the process and behavior we intend to improve. As the literature of knowledge management tells us, this direct tactile involvement with the problem is often the only way to transfer implicit procedural knowledge. As Nonaka and Takeuchi (1995) describe, to build a home bread-baking kitchen equipment that also kneads the dough, it was necessary to practice kneading with a baker. The development team would not have been able to uncover the complexity of the compress, pull, and twist action necessary to create dough that rises just right.

5. CONCLUSION

Banks have great challenges, in both method and culture, to overcome before design thinking can be deployed successfully. If banks can develop a design thinking friendly environment and recognize the method as a promising means to foster innovation, they stand a fighting chance. Design thinking requires allocating time and resources that may or may not have direct, measurable impact on top and bottom lines. The methods do not focus on execution and have little or nothing to do with agility in delivery. Too often, banks conflate agile transformation, technology, and design thinking, while the latter is a problem-solving technique that sits at the intersection of business, technology, and humans. This article intended to show these differences and point out that the path forward can be as simple as creating the right physical environment, introducing a rapid prototyping approach (meaning prototyping an idea within hours, not even days, using basic materials), and involving the end-user in the process from the start. Design thinking in financial services holds a lot of promise. It remains up to banks to harness its power.

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