Applying design thinking in a hierarchical organisation
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Many large financial services organisations are seeking to develop their employees’ design capability to develop innovative customer solutions. Yet, there appears limited understanding on how individual employees (without a background in design) view the relationship of design thinking to innovation. This study investigates how employees perceive design thinking and its potential link to drive innovative practices within a large Australian multinational financial services organisation. An exploratory qualitative approach used face-to-face semi-structured interviews with diverse participants from across the organisation. A modified existing design capability framework was used to map each individual’s perspectives and illustrate the organisation’s current DT and innovation capacity. Findings from this study contribute new insights regarding employee perceptions and design capability requirements.

Keywords: Design Thinking, Innovation, Financial Services Industry, Large Organisations

Introduction
As Design thinking (DT) has grown in popularity, organisations experiment with programs using DT principles to drive innovative practices (Bucolo & Matthews, 2011; Bucolo & Wrigley, 2013; Carlgren, Elmquist, & Rauth, 2011; Liedtka, King, & Bennett, 2013; Matthews, Bucolo & Wrigley, 2012). Large organisations generally recognise the need to innovate to achieve sustainable growth in today’s economic marketplace (KPMG, 2015). Adopting design, DT, and design led approaches to innovation have been known to assist in this process (Brown, 2008; Brown & Martin, 2015; Johannsson-Skoldberg et all, 2013; Kolko, 2015; Liedtka, 2010; Liedtka and Ogilvie, 2011; Verganti, 2008 and Verganti, 2009). Hence, organisations are seeking to up-skill employees to develop their DT capabilities with the view to improve innovation processes and outputs.

With increasing numbers of people and organisations exploring DT methods, this empirical study presents findings from an investigation of how employees perceive the current DT capacity of their organisation and its ability to generate transformative innovation. Specifically, capturing and illustrating how employees of a large Australian financial services organisation recognise the possibilities of DT and its potential link to drive innovative practices. Applying a case study approach, the researcher interviewed 31 employees across various organisational levels, roles, geographical locations and departments within one large organisation, MFSCo. An existing design capability framework was modified for this context and used to map the participants’ thoughts and views about DT and their capacity to drive innovation in current work contexts.

The aim is to investigate, discover and understand how employees without a background in design value and apply DT practices and the relationship to innovative outcomes. Building capability requires both knowledge and the ability to apply the learnings to provide real value generation.
The findings contribute practical evidence of the complexities associated with how individual employees understand and transfer DT learnings to innovative workable applications.

**Current Understandings**

Understanding what DT expertise actually is and how to establish it is crucial, in order to determine how to build DT capability. Despite the many views, definitions and interpretations of DT capability found in the literature, there is no single agreed consistent explanation of DT competency and how it can be acquired.

DT competency has multiple meanings (Barry & Beckman, 2008; Beverland and Farrelly 2007; Brown, 2008; Howard, 2012; Johansson et al. 2013; Kolko 2010; Lawson & Dorst, 2009; Liedtka & Bennett, 2013; Martin 2009; Martin 2010; Melles, Howard, & Thompson-Whiteside 2012; Sobel and Groeger, 2012). Melles, Howard, & Thompson-Whiteside (2012) discuss DT capability as the capacity to co-design and work together with end users at an organisational level in conjunction with developing skills and knowledge at the individual level, while Sobel & Groeger (2012) describe DT as effectively applying diversity of thought amongst users and internal stakeholders to uncover insights, identify the real problem and be adaptable whilst developing and testing prototypes to reveal the solution. According to Lawson & Dorst (2009) DT expertise is not defined as one way of thinking, it is a mixture of rational, analytical thinking and creativity. Barry & Beckman (2008) concur with this view, contending that the inherent capabilities differ within each DT cycle, where understanding and applying the right skill for the required element will produce better outcomes overall. Diversity of input across multidisciplinary stakeholders can enhance design, assist to define the problem and determine appropriate solutions, and is highly relevant in the context of a complex multidimensional organisation.

DT capabilities are much more than knowledge and skills and include intrinsic characteristics that accompany the application of DT. Martin (2009) stated ‘the essential core capacity for designers is abductive reasoning, ‘the logic of what might be’ (Martin, 2009: p27). The ability to make ‘a logical leap of the mind’ without proof from past events or supporting validated data, differentiates the designer from the non-designer. This explanation offers further insight into what capabilities make up a designer, particularly in a business context and for employees without a background in design, where inductive and deductive reasoning is the norm (Kolko 2010). Martin (2010) proposed that consideration should be given to finding balance between analytical management and intuitive thinking, between ‘exploration and exploitation.’ Hence the necessary characteristics to apply a DT approach contain a mixture of feelings, empathy and intuition as well as systematic, rational expertise. These additional skills are often seen as foreign in a business context.

DT capabilities range from the tools and techniques required to follow the design methodology and the appropriate logical mindset or ability to apply abductive reasoning. By understanding what DT capabilities are, the next focus considers the integration of DT in large organisations.

**Integration of DT in large organisations**

Large, established organisations comprised of multifaceted frameworks contain traditional hierarchical structures and well-established management practices. Overcoming these obstacles to drive innovation through a design-led approach is challenging (Brown & Martin, 2015; Bucolo, Wrigley & Matthews, 2012; Carlgren, 2013; Carlgren, Elmquist, & Rauth, 2015; Howard, 2015; Liedtka, 2010; Liedtka, 2014; Martin, 2009; Sobel & Groeger, 2012). Large businesses today face a whole new level of challenges with rapid changes in the external environment and decreasing asymmetry between organisations and consumers (Kloeckner, 2018).

A study by (Carlgren, Elmquist, & Rauth, 2013) examined how employees perceive DT and its application across four industries (including software, product, services and healthcare). Findings note that many employees perceived design to be a mind set or culture rather than a practice or method, and the utilisation of design varied from early adoption in projects to alignment with strategic initiatives (Carlgren et al., 2013). In comparison, research conducted by Darden University examining the effect and impact of DT in large organisations, revealed difficulties and challenge in the application of DT. The challenges included complex structures; separate business departments; management ability and expertise and the language barrier between designers and non-designers (Carr, Halliday, King, Liedtka, & Lockwood, 2010). Both Carlgren et al. (2013) and Carr et al. (2010) noted that shifting individual and organisational existing competences to incorporate new and unfamiliar methodologies and practices, such as DT, requires considerable time, effort
and know-how, where both the environment and culture play a key role in applying the new learnings in an existing traditional organisational setting.

In contrast, large organisations such as Apple, Google Ventures and Nike have successfully applied DT to drive innovation (Berger, 2010) largely incorporating designers’ skills successfully to solve problems and innovate. Developing core competences to understand your customers, build prototypes and iterate fast is essential to all designers and organisations (Kolko, 2015). This view supports Michlewski, (2008) who argues that the right design attitude is important to a designer’s toolkit. Schweitzer, Groeger & Sobel (2016) suggest in order to build a design led approach to innovation, focusing on developing the mind-set is integral, as employees can adopt new processes quickly (Schweitzer et al., 2016). These studies indicate that developing the mind-set and learning how to think differently form an important part of a designer’s core capability to transform solutions.

Understanding the operational environment and all the elements and characteristics of an effective designer will support large organisations to develop the design capability required to successful DT outputs.

**Design thinking in the financial services industry**

Many Australian businesses remain tied to traditional workplace practices and expertise that have successfully delivered predictable positive results (Bucolo et al., 2012). Financial services is a highly regulated industry comprising multiple sectors including banking, insurance, investment, superannuation and other financial services activities, where the support for DT as a lever for innovation is still in its early stages (Sobel & Groeger, 2012). Largely conservative in nature, the ability of these organisations to remain competitive in an environment of constant disruptive change is more important than ever (KPMG, 2015).

A study of an Australian division of a professional financial services firm providing consulting services, acknowledged the complexities associated with non-design trained employees learning DT (Howard, 2012). Both capability building and the practice of design were difficult due to the complexity surrounding highly analytical and logical environmental surroundings. Howard (2012) recommended the support of trained DT professionals to improve the quality and development of the employees. This research emphasises the complexity associated with transferring DT theory into practice, particularly to staff who are not trained designers, in the financial services industry.

**Measuring and mapping application of design thinking**

Understanding how design is understood, applied and delivered provides opportunity for further improvements. The Danish Design Ladder (Kretzschmar, 2003) was developed by the Danish Design Council, illustrates four steps towards design maturity, showing that the further up the ladder the more design is integrated into the strategic landscape of a company. The Danish Design Ladder represents the levels of design integration can have within a business and provides a basis for design integration, beginning with the absence of design in the organisation across projects or product development, through to design incorporated into the strategic arena of an organisation (Kretzschmar, 2003). The Design Management Staircase (DMS) (Best, Kootstra, & Murphy, 2010), an extension of Kretzschmar (2003) model, considers five factors: awareness of benefits; planning for design; resources for design; design management expertise and design management process. DMS provides for further consideration of design elements within an organisation and assumes a level of maturity within the establishment.

The Design Capacity Model (DCM), defined as ‘a framework for companies’ design management capacity’ (Storvang et al., 2014) builds on the two previous design frameworks. Inspired by the model established for the Chinese industry (Heskett and Liu, 2012), the DCM was designed for small to medium sized companies in a Danish context. The visual representation consisting of five (5) levers, is a spider web formation, focuses on design capability factors including: who is design valued by; how are customers engaged; who the design thinkers are; what are the innovation drivers, and design capabilities in the organisation as shown in Figure 1.
Defining innovation

While innovation has been defined in a range of ways (Amabile, 1988; Damanpour, 1991; Damanpour and Schneider, 2006; Frambach & Schillewaert, 2002; Rogers, 2010; Souto, 2015; Wisdom et al., 2014; Wolfe, 1994). For the purposes of this study, innovation is defined as the acceptance and adoption of an idea or behaviour regarding a system, policy, program, device, process, product or service (Damanpour, 1991), with the focus on the perception of DT and its relationship to innovation.

Participating company

A large Australian publicly listed multifaceted multinational financial services organisation named ‘MFSCo’, was selected for the research project. The sheer size, complexity and the desire to utilise DT to deliver innovative outputs, is the motivating factor for selecting this firm as the case study for this research. While the company has over 10,000 employees, this case study examines employees within one sector within the Group, comprising 2000 employees, distributed in multiple geographical locations across Australia.

MFSCo’s commitment to innovation exhibited an innovation framework incorporating varied DT based education and training programmes, ranging from a one-hour introductory workshop through to a tailored programme centering on knowledge based experimental DT practices aimed to drive innovation refer Table 1.
<table>
<thead>
<tr>
<th>Program</th>
<th>Purpose/Objective</th>
<th>Time</th>
<th>Program Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program A</td>
<td>An introduction to design thinking</td>
<td>60 mins</td>
<td>High level overview of design thinking using D school model</td>
</tr>
<tr>
<td>Program B</td>
<td>Learn end to end Design Thinking through experimental application</td>
<td>90 mins</td>
<td>D School Model</td>
</tr>
<tr>
<td></td>
<td>Introductory Course. Very fast, efficient course in busy business environment</td>
<td></td>
<td>More emphasis on each step</td>
</tr>
<tr>
<td>Program C</td>
<td>Learners will describe the purpose, technique and skills used to generate creative ideas and demonstrate delivery of improved business results</td>
<td>90 mins</td>
<td>D school model in greater detail</td>
</tr>
<tr>
<td>Program D</td>
<td>Tailored individual program. Experiential learning through practical application of real problems or ideas</td>
<td>Timeframe is at the discretion of the team</td>
<td>The D school model was introduced and participants worked through each step to address an organisational problem</td>
</tr>
</tbody>
</table>

**Table 1: Overview of internal design innovation training programs**

**Research Design**

This exploratory qualitative approach applies a case study method (Yin, 2009), and provides deep exploration and understanding of an individual entity for the purpose of gathering insight into a larger group of similar types (Gerring, 2004). The study of MFSCo aims to provide greater comprehension of the dissemination and practical application of design capability to derive innovative results, considering the nuances of a complex multinational. The main purpose for selecting a qualitative case study method was to gain empirical data from individual participants regarding their experiences and the ability to contextualise employees’ perceptions and applications regarding DT and innovation (Denzin & Lincoln, 2011).

To prevent any misgivings and demonstrate academic rigor, the researcher applied the six stage case study process developed by Yin (2009) and deepened guidelines outlined by Baškarada, (2014). The use of multiple approaches and data sources constructs validity in the research through data triangulation, as it utilises differing sources of information in contrast to investigative or environmental triangulation (Guion, Diehl, & McDonald, 2011).

Data collection and analysis featured the model inspired by the Design Capacity Model (DCM) (Storvang et al., 2014) in Figure 1 above. The original DCM was reframed and customised to reflect a large company structure and current organisational vernacular but the essence of the model remained unchanged. The majority of the customisations were name changes to existing nodes or removing/adding new nodes along the levers. Figure 2 illustrates the amendments.
Participating employees

Participating employees were selected from a range of diverse roles, primarily those in project, marketing, strategy and business improvement, rather than the functional or operational roles, where design capability may not be required. A diversity of participants were selected to acquire a broad appreciation of the dissemination of DT expertise from both bottom up and top down positions, incorporating both strategic and operational lenses. Participant sampling is shown in Table 2 and Table 3. Coding of responses referenced the role, location, and position of participants to identify patterns of responses and also ensured anonymity of the participants. An example of the coding is represented as (D-BNE-EGM).

Table 2: Participant selection (Departmental)

<table>
<thead>
<tr>
<th>Department</th>
<th>Distribution (D)</th>
<th>Claims (C)</th>
<th>Portfolio (P)</th>
<th>Operations (O)</th>
<th>Human Resources (HR)</th>
<th>Statutory (S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>11</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 3: Participant selection (Geographic and Managerial)

<table>
<thead>
<tr>
<th>Location and Position</th>
<th>Executive General Manager (EGM)</th>
<th>Manager (M)</th>
<th>Team Leader (TL)</th>
<th>Team member (TM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney (SYD)</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Brisbane (BNE)</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Melbourne (MEL)</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>
The researcher mapped the participant’s beliefs about the organisation’s position with regards to DT capability and its ability to deliver innovation, for each of the 31 participants. The five levers represent: who values design; customer engagement; drivers for innovation; design capabilities and design awareness. An example of the mapping and results is provided below in Table 4.

Table 4: Example of mapping the results in the modified DCM

<table>
<thead>
<tr>
<th>Who Values Design</th>
<th>Customer engagement</th>
<th>Drivers for innovation</th>
<th>Design Capabilities</th>
<th>Design Awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost all of the organisation</td>
<td>Net promoter score (survey)</td>
<td>Internally focused</td>
<td>Mostly internal with help from design consultants</td>
<td>The design team with a few employees across firm</td>
</tr>
<tr>
<td>Design &amp; innovation team</td>
<td>Net promoter score (survey)</td>
<td>Internally focused</td>
<td>Mainly external consultants</td>
<td>The design team with a few employees across firm</td>
</tr>
</tbody>
</table>

Findings and Analysis

Individual maps were completed for each participant, collated in a table as demonstrated in Table 4, then each completed diagram compared, noting the key differences and similarities. The diagrams were divided into participants who did not attend any internal design innovation training programmes and participants who attended at least one of the programmes. This section provides a synopsis of the findings and then outlines three (3) broader themes identified from the findings: responsibility vs accountability; business centricity; and lack of integration and application.

Participants who did not attend any of the four internal design innovation programmes

Six (6) of the thirty one (31) interviewee participants, who did not attend any of the four internal design innovation programmes, were predominately senior strategic executives and managers. Two (2) of this 6 believed that all teams across the organisation valued design. 50% of participants highlighted ‘employees delivering projects’ valued DT more highly and one (1) participant stated ‘a few outside of the design and innovation team’ valued DT. With regards to customer engagement, five (5) out of the six (6) participants focused on the long-standing net promoter survey (NPS) and feedback mechanisms as the primary way customers were engaged. The NPS is a national survey completed by a third party (such as a broker) on behalf of the customer, as the avenue for customer insights and engagement.

The innovation drivers for the organisation were evenly divided between external markets, internally focused or competitor driven. Perceptions regarding design capabilities currently in the organisation focused on the internal design and innovation team in conjunction with engaging external consultants to bring in design capability to the organisation. Lastly, design awareness was noted to be 50% ‘a select few across the businesses’ with two (2), of the participants highlighting design awareness is mostly contained to the internal design team with one (1) participant believing that management are aware of DT.

Participants who attended at least one internal design innovation programme

The remaining twenty-five (25) participants who attended at least one internal design innovation programme were predominantly front-line employees, first line leaders and managers from MFScOs. Many employees indicated that DT capability was concentrated in a few select areas across the business, and there was not a recognised DT capability in the management arena. Once again customer surveys were identified as the measure of customer’s engagement.

16% of these program participants believed almost all of the organisation valued DT. 16% stated that the design and innovation team and those delivering projects valued DT and 12% of participants believed teams delivering projects valued DT. 52% participants nominated only the design and innovation team as the area that valued DT the most in the organisation. One (1) participant selected the node ‘employees delivering projects with a positive shift towards a strategic focus’. Employee (C-BNE-TL)
For Customer engagement, 13 of the 25 (52% of these participants) also selected the net promoter survey (NPS) as the main method for engaging with their customers.

Only eight (8) participants indicated that customer interviews had been undertaken to understand more about customers. Of those 8 participants, 6 had attended Program D of the internal design innovation programmes (See Table 1.), which promotes observations and conversations with customers to capture insights and identify patterns and themes based on the interview content.

With regards to the organisation's drivers for innovation, 17/25 (68%) stated the organisation was internally focused, primarily on internal efficiencies and improvements. One participant did select ‘customer is the main driver’ for innovation, outlining ‘the customer is the primary reason we are in business and should be at the centre of everything we do’ Employee (O-BNE-TL).

For the dimensions of design capabilities recognised across the organisation, perhaps not surprisingly, the majority (13) of participants indicated that the design and innovation team, with assistance from external consultants held the design capabilities in the organisation. Five (5) participants noted that external consultants were brought in when design capabilities were required, for specific projects or needs. Interestingly, three (3) participants stated there was no DT capability in the organisation, adding that the design and innovation team were compiled of ‘non-technically trained’ designers and “they were the only ones who valued DT” Employee (D-BNE-TM). This finding implies the employee may not require DT in their day to day role or has yet to see valid DT capability demonstrated across the organisation.

Lastly, 9/25 (36%) of participants believed design awareness was contained to mostly the internal design and innovation team with a select few across the organisation. 12/25 (48%) of participants noted that a ‘few select teams’ had an awareness of DT, indicating these employees were primarily related to those participating in projects, the design and innovation team and select managers responsible for change. Two (2) participants selected they believed only a ‘few in the design team’ held an awareness of design. Finally, one (1) participant selected that ‘no-one’ was aware of DT in the organisation.

Comparisons from all the completed participant diagrams

The overall participant diagrams were then compared and a thematic analysis applied to the data. The sub-themes identified in the data are represented as: responsibility vs accountability; business centricity and lack of integration and application.

Responsibility vs Accountability

The results show that senior management responsible for managing strategic decisions believed DT was valuable and important to delivering innovation. In addition, the notion that the design and innovation team contained design capability and were largely responsible for building and applying design capability was a popular view across the organisation. Unfortunately, there also appeared to be a distinct lack of investment in building these capabilities, or in encouraging wider application of any learnings undertaken.

One strategic leader expressed the value of DT at a strategic level, “however we are not there yet”. Nevertheless, they did state “there is an openness at that level to exploring possibilities and to challenge…..” Employee (C-BNE-EGM). This comment may imply that dialogue at the strategic level contains the notion of exploration and new possibilities, challenging existing approaches to solving problems. The concept of DT was acknowledged as a valuable tool for the organisation, and further education may be required to inform how strategic leaders can apply and drive design led innovation outcomes, without relying on one team to drive the expertise required to deliver change across the organisation. Describing their own limited investment in nurturing the DT capability required to enable innovative outcomes, also indicates an absence of responsibility and hence accountability for such outcomes.

Business centricity

An overwhelming emphasis on business centric thinking, in terms of the business forming a solution irrespective of customer insights was found. This distinct focus on internal drivers for innovation, with limited external inputs, particularly direct involvement from the customer or other external environmental factors, was a strong feature. This is not to say the employees were not aware of the importance of understanding the customer, however the ability to transfer those insights into tangible solutions was the challenge.
Harnessing and applying new concepts based on customer insights are difficult, particularly when they are in contrast to existing organisational methods, ways of working and tightly focused goals and objectives. Often in a business context, organisations develop a solution they believe a customer wants, based on their own projections, rather than capturing and applying the insights from the customer and developing solutions based on the wants and often unarticulated needs of the customer.

One participant stated that “even going through the process (DT) the output didn’t change...” Employee (D-BNE-TM). This comment may indicate that the solution was developed before applying what they perceived as the DT process. Thus, customer insights were disregarded, and the solution was not necessarily based on what the customer was telling the organisation, but what met the immediate business needs and objectives.

Lack of integration and application

A disconnection between applying all the components of DT and the ability to generate the collective benefit of what design can bring, was found. For example, while design was valued highly by participants, limited customer insights were collected, mainly by front line staff in Claims and Operations. In addition, the drivers for innovation were often limited to internal drivers or exploring competitors’ performance. The findings also noted that DT training was often brought in by external consultants, for often one teams requirement and not shared across the business. This team-based focus may indicate pockets where DT can be purposely applied throughout a team and extend beyond individual knowledge and skills.

One participant asked, “how can you be innovative and add the design thinkers to a problem without the threat of slowing it down?” Employee (D-BNE-M). This comment suggests their perception of DT as an activity carried out outside of the existing process to innovate, and perhaps a recognition that DT requires an added investment of time to achieve new value.

Discussion

The results reveal the difficulty encountered by the employees of MFSCo with regards to merging the mindset, skills and tools attributable to DT, with the celebrated structured analytical competence and the traditional, cultural environment found in a large established financial services organisation.

DT was valued most by the innovation and design team as well as with a few teams undertaking projects. The strategic leaders stated they valued DT as a method to deliver innovation. However there appears to be a distinct lack of investment in DT outside of the internal programmes which focused on foundational DT practices. The organisational change literature indicates that many developmental programmes build in ongoing projects, encouragement and support, mentoring and coaching to assist the implementation of new behaviours. These notions were not identified as present in the research interviews. In addition, limited time was allocated to practicing DT after attending the programmes. One consequence of limiting time for employees to properly apply or use the newly acquired DT capability is the restrained opportunity for integrating design with other practices performed across the organisation and generating new innovations. Many possible reasons why the value of DT and the relevant capabilities are not being valued and harnessed in entirety.

One possible reason for the absence of progress with design thinking capability is linked to the new knowledge and skill capabilities directly associated with DT. Consider Martin’s (2010) description of DT as the balance of analytical excellence and intuitive ingenuity when applying design capabilities in a business context. Where DT takes the best of both traditional analytical thinking, including deductive and inductive logic, in conjunction with abductive reasoning. Kolko (2010) describes abduction as intuitive thinking or using gut instinct and allows for new ideas (innovation) to flourish, whereas inductive and deductive reasoning cannot deliver any new knowledge or discoveries, limiting innovative opportunities (Dorst, 2010; Kolko, 2010; Martin, 2009). In a highly conservative industry structured frameworks, technical expertise and analytical skills are often highly valued. These competences frequently utilise deductive, inductive logic and quantitative methods for problem solving not abduction, intuition or creative pursuits. Training employees to apply and adopt creative, messy techniques that encourage observed insights, an experimental mindset and iterative processes that include failure in order to learn, may require more significant time and expertise than was observed. Given tight timeframes, high expectations of financial benefits from invested projects, and hierarchical complex structures the ability to apply intuitive, creative solutions that may fail is challenging to traditional organisational management.
Traditionally for new projects to be funded, proposals for novel ideas require demonstrable evidence, substantiated by quantifiable and measurable metrics, often in the form of a business plan. This business approach seldom aligns to DT, where insights arise from abductive reasoning in the form of hypotheses and suggested solutions may be outside the organisational financial objective. Therefore, to improve the connection of DT to innovative outputs and establish value, MFSCo should focus on integrating new capabilities through implementing DT via experimentation, through minimal cost and resource as maturity and skills grows across the organisation (Dorst, 2010). Harnessing differing views and mindsets that allow for creative transformative innovations, will show the way design can integrate into the current knowledge and skills within the organisation by way of proven examples and applied techniques.

Through application of DT in small projects and building capability through experimentation, the value of DT could be enhanced and the shifts in management perspectives may embrace the designer’s skill sets. As stories and case studies that demonstrate the usefulness of DT in this organisation and its context are developed and collected, the appetite for further engagement with DT mindset and methods is more likely to progress. In addition, longer and more extensive experience with DT in relevant, related projects, perhaps with ongoing coaching and mentoring may be more beneficial.

Limitations
The exploratory modification of the DCM used to extend this framework to large organisations is an experimental approach and has not yet been validated with further studies. However, such identification of levels and mapping changes for comparison over time may lead to new research on DT capability for improved performance in large corporations.

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