CREATIVITY THROUGH PLAY FOR DESIGN-LED INNOVATION – A MULTI-CASE STUDY

Research Paper

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Abstract

To navigate the increasingly uncertain business environment, human-centric design and innovation is becoming a necessity. The ability to think creatively and come up with new solutions is needed to thrive in the future. This requires a shift of mindset from scalable efficiency of the industrial age to sustainable creativity of the digital age for corporate India. While change is hard, it need not be painful. What if there was a more intrinsically motivating and nourishing way to deal with change? This research paper explores the potential of play as a catalyst of creativity for design-led innovation in organizations struggling to accelerate transformation. The practical implications of infusing play into work for serious organizational outcomes are discussed using three case studies that cover creative empathy, divergent thinking and creative agility – three integral concepts of the human-centric design process.

Keywords: play, creativity, design thinking, innovation.

1 Introduction

Considering the increasing usage of exponential technologies, such as AI, robotics, augmented reality, among others, to augment and even replace humans in the workplace, it is now necessary to nurture creativity, interpersonal and adaptability – the only factors that differentiates humans from AI (Kosbie et al., 2017) and help us stay relevant in the future. The top 5 of 15 skills for 2025 (World Economic Forum, 2020) are analytical thinking and innovation, active learning and learning strategies, complex problem-solving, critical thinking and analysis, creativity, originality and initiative. These skills are particularly relevant as we move from the era of Industry 4.0 to Industry 5.0, where machines work with humans to drive growth and innovation (Nahavandi, 2019; Özdemir and Hekim, 2018), especially in complex, global issues as infrastructure innovation, quality education, climate change, among others (Cf, 2015) for developing economies such as India. Hence, it is necessary to think differently and come up with new, creative solutions centered around humanity. Innovation is no more an option for organizations to stay relevant in the future.

To accelerate such complex transformation efforts in the recent past, companies such as P&G, Apple, Nike, Coca Cola, to say the least, have now put design at the center of their business (Westcott, 2014). Human-centric design has now proven to be a strategic driver of innovation (Bruce and Bessant, 2002), and therefore organizations must now turn their immediate focus to build a design thinking mindset (Dosi et al., 2018), within which building creative confidence and nurturing creativity becomes essential for sustaining innovation in the organization. With the increasingly uncertain business environment in the post-pandemic world, human-centric design and innovation becomes even more relevant. The pandemic has now forced businesses of all sizes to accelerate their digital business transformation efforts. In addition to enabling business with technology, there is a need for organizations to not just be more innovative while being more empathetic, resilient, and agile, but also

now have the added responsibility of building purpose-driven teams with well-being, sustainability, diversity, and inclusion (Bryan, 2021) ingrained into their DNA.

The onus of execution of these design-led transformation efforts in organizations largely lies with the lower and mid management, which mainly comprises Millennials (born during 1981-1995, the largest working age group in the Indian market) and Generation Z (born during 1995-2012, now entering the workforce). However, the current organization culture, climate, and resources in India's corporate sector leave much to be desired by the growing young workforce. In terms of the future of work, the top three desired employee characteristics most critical to success of organizations for India's Millennials and Gen Z are creativity, flexibility/adaptability, technological savvy (Deloitte, 2021). While these organizations have now jumped on the digital bandwagon, their culture is still stuck in the industrial age and remains one of the biggest obstacles for transformation (Goran et al., 2017). Many large Indian organizations are not open and flexible (Panini, 1988), and neither do they promote autonomy – factors that are connected to creativity. To generate and implement new and disruptive ideas, the young workforce are seeking safe, trusting and democratic culture and spaces to promote risk taking, build confidence and promote creative expression. It is therefore not surprising why the young generation naturally gravitate towards startups and global technology services providers that have a flexible, free-spirited atmosphere (Pandit, 2018). In addition, generational differences (Marcinkus Murphy, 2012) between senior management (primarily Gen X, born between 1961-1980) and lower to middle management (Millennials) need to be addressed immediately for better innovation outcomes.

Corporate India needs a better way to empower employees with necessary mindsets and behaviours in order to drive transformation and innovation in today's uncertain, post-pandemic business environment. The objective of this paper is to study play as a catalyst for fostering creativity in the organization. The implications of this paper are specifically on the practical development of team creativity and broadly on the facilitation of design-led innovation for the organization. This was examined in three case studies having unique organizational contexts through different play activities and tools. Hence, the research topic is stated as: *How play fosters creativity for design-led innovation.*

2 Literature review

2.1 Creativity for design-led innovation – the organization imperative

There are three phases of the human-centric design process for creative problem solving – Inspiration, Ideation, Implementation – that leads to innovation (Design Kit, I.D.E.O., 2016). While organizations implement this human-centric design process, also called design thinking, in many different ways, the need for a design thinking mindset is essential for innovation. A study (Dosi et al., 2018) measured this mindset for self-awareness by scrutinizing 17 papers on design thinking for innovation. Twenty-two mindset constructs and the validated questionnaire were developed that can be used as a tool to assess team members' attitudes in innovation teams.

Since creativity is key to the design thinking process as it leads to new solutions for business, it is essential to discuss the definition of creativity in the organization context. Creativity is the ability to come up with a novel idea or product that is appropriate for the situation at hand (Woodman et al., 1993). Individual creativity is a function of three components (Amabile, 1988): expertise (domain or industry knowledge), creative thinking skills such as divergent thinking, and intrinsic motivation. These components can be influenced by managers through workplace conditions and practices. Also a study on collective creativity (Hill et al., 2014), organizational willingness is necessary but not sufficient for innovation to flourish. A team also needs three specific capabilities – creative agility, creative abrasion, and creative resolution. A classic example of organizational creativity is Pixar Animation Studios.

Also, to come up with novel solutions, it is necessary to first empathize with the person we are solving the problem for, as creativity and empathy are positively related (Carlozzi et al., 1995). In the

organizational context, this could be internal employees, external customers and even partners with whom managers need to collaborate with. Overcoming the natural tendency to see a problem from our point of view instead of the other can be challenging. Hence, this requires not just empathic ability but also creative imagination. In the design thinking process, methods such as role play and role reversal ignite creative empathy (Yaniv, 2012) in order to deeply understand what the other is experiencing. In organizations, managers who effectively focus on others and take the effort to build social relationships are easy to spot and emerge as natural leaders irrespective of their title or rank (Goleman, 2013). Also in cases when employees do not meet expectations, leaders may express frustration or anger. This reaction creates fear and anxiety, which not only erodes loyalty and trust (Bartram and Casimir, 2007), but also creativity as it affects their cognitive control. In future, chances are that this employee will not take risks, thereby killing the culture of experimentation that is key to learning and innovation. Dealing with such situation with curiosity and compassion (Dirks and Ferrin, 2002) can increase the willingness to trust that in turn improve employee's creative, productive performance.

While discussing organizational creativity for innovation, it would be naïve to leave out the positive influence of well-being on creativity, especially during the pandemic. Creativity is connected with personal properties such as flexibility, autonomy, openness, humor, playfulness, willingness to try things, elaboration of ideas, realistic self-assessment, and similar characteristics (Cropley, 1990). Such properties are highly favorable to maintenance of positive mental health. Divergent thinking is primarily a cognitive measure, while non-work related creative activity is more motivational and socio-emotional in nature. Divergent thinking tasks are often used to measure creative potential (Runco and Acar, 2012). The stronger relation of creative activity or behavior to well-being than creative ideation or divergent thinking has implications for organizations because engaging in creative activities benefits the organizations through enhancing innovation and effective problem-solving behaviors as well as the well-being of employees (Acar et al., 2021).

2.2 Play – the catalyst for creativity

Humans are built for play (Brown, 2009). Play's innate attributes of flexibility and autonomy provide an opportunity for thinking impromptu, using one's imagination, and dealing with complex and uncertain situations creatively (Winnicott, 1971). When managers play and behave playfully, it activates the child's mind and this helps develop and draw on an alternative way of thinking as leaders. This can enable them to better adapt to the need for constant change, creativity and innovation (Kark, 2011). For managers to navigate today's uncertain business environment, they should consider having a "beginner's mind" (Renesch and Chawla, 2006) or the "mind of a child" (Kofman and Senge, 1993; Senge, 1990) that is filled with awe, curiosity, and exploration in order to limit the impact of institutionalized paradigms and practices (Bokeno, 2009).

Play is now increasingly being acknowledged as an important factor in offices and organizations in the US, Europe and other developed markets. Fortune 500 companies are now attempting to incorporate play into business (Meyer, 2010). Global companies such as Google, Motorola, and Du Pont encourage employees to utilize 20% of their work time to play without constraints and come up with new disruptive ideas (Mainemelis and Altman, 2010).

Mainemelis and Ronson described play as the cradle of organizational creativity (Mainemelis and Ronson, 2006). They proposed that play as engagement facilitates the cognitive, affective, motivational, and skill dimensions of creativity such as reframing problems, divergent thinking, thinking of alternative solutions and even transforming mental models. Playful interactions also promote experiences of "flow" (Csikszentmihalyi, 1990) and "timelessness" (Mainemelis, 2001) that immerse players in the task and contribute to positive affect. It is easy to draw parallels between play and flow with Csikzentmihalyi's summary of flow as being in a state where skills are being adequately used for the challenging task. This creates a more aware, positive, engaging experience where ego falls away and a sense of serenity, clarity and focus is felt.

Psychological safety reduces the anxiety and fear of being judged or negatively evaluated for taking risks while working in teams on activities such as suggesting and discussing new ideas, experimenting,

asking hypothetical 'what-if' questions, and even creating solutions that may not work in the real (Edmondson, 1999). These actions are an essential part of the creative ideation process. Social play (Locke, 1989) often dissolves hierarchical relationships and allows employees to express themselves more openly by freeing them of expected behaviors and designated roles of the workplace. This increases in psychological safety can result in creativity agility stemming from thinking divergently as well as testing and refining ideas through rapid experimentation (Hill et al., 2014).

While adult playfulness may be a stable personality trait (Proyer, 2012), playfulness as a state can be contextually influenced by play-cues (West et al., 2016) or playful improvisation theater workshops (West et al., 2017), that in turn improves organization's creative climate and enhance team creativity respectively. An earlier study suggested that organizations wishing to increase workplace playfulness, measure of playfulness as a "state" (West, 2015), can recognize that, while playfulness may partially be a personality trait that may be worth of consideration during recruitment and selection of new employees, efforts to contextually encourage workplace playfulness are likely to be the most fruitful. Also turning on a playful state of mind may be accomplished just by being in the company of playful people (Siviy and Panksepp, 1987).

When play is applied to achieve serious organizational goals, such as creativity, it is called "serious play" as exemplified with use cases from a stream of recent research – strategy process (Roos and Victor, 1999), innovation processes (Schrage, 1999), organization change (Beech et al., 2004), Organizational development (Jacobs and Heracleous, 2006) and Leadership development (Holliday et al., 2007). In the organizational context, a paradox naturally arises, as play is a fun, intrinsically motivating activity being applied to something as serious as work. To deal with this ambiguity, scholars (Statler et al., 2011) reframed the concept of serious play as a practice of paradox, that accepts the paradoxical nature of play and engages in playful, autotelic processes to achieve serious organizational outcomes. An autotelic person as someone who is internally driven with a sense of intention and curiosity (Csikszentmihalyi, 1990). In the play experience, it is a reinforcing property of the state of flow and the activity becomes its own reward.

Although play has shown to increase emergent collaboration and creativity in organizations, many organizational leaders believe play can be "annoyingly ambiguous, frustratingly frivolous, and suspiciously silly" (West, 2014). These leaders from the industrial age, mostly from generation X (born between the mid-1960s and the early-1980s), typically do not allow play to tamper their well-honed rational skills that they use to run their organizations. In order to address this shift in mindset, organizations need a technology of foolishness to deal with this over-reliance on the technology of rationality. Also former LEGO® employees, Kristiansen and Rasmussen, drew on the work (Huizinga, 1955) of Huizinga with his groundbreaking book, Homo Ludens, to come up with a conceptual framework for Serious Play (Kristiansen and Rasmussen, 2014). The Serious Play method also uses a set of well-known theories such as constructionism (Papert and Harel, 1991) and flow (Csikszentmihalyi, 1990). They also state that children's play can be, and often is, serious and intense. They argue that that most types of play are not frivolous and generally have an underlying developmental function, even though its purpose is not explicitly stated. In Serious Play method, systematic creativity is applied that combines logic and reasoning with playfulness and imagination in areas of empathy and creative ideation, thereby highlighting the potential of play to nurture organizational creativity for business benefit.

Key gaps discovered in the literature are lack of case studies focusing on the role of play in the different phases in the Design Thinking process in areas of digital leadership, sales and marketing, customer experience, product and service innovation for India's multi-generational workforce. Recent literature around serious play centered around crafting strategy with embodied metaphors (Jacobs and Heracleous, 2006) using LEGO® but not on other multi-sensory material such as candy, spaghetti marshmallow, play-doh, among others that provide for enhanced flexible and sensory play experiences. Also. there are not too many case studies of organizations in research literature that show how specific types of play such as constructive play, exploratory play, social play can shift employee behaviors towards co-creation, i.e. group creativity and idea generation for design-led innovation.

3 Research methodology

Based on the research questions and the qualitative, experiential nature of the interventions, the case study research method was adopted. Multiple case studies (3), provided in table 1, were selected to examine Play as a catalyst for co-creation and innovation within the organization as well as its partners and clients in different contexts for young leaders (Millennials) and senior management (Gen X).

Case Study	Purpose of Intervention	Participant Mix
A: Enterprise IT Solutions – *Across multiple industries*	Improve sales pipeline for solutions provider by co-creating solutions with IT Heads (clients) undergoing digital transformation.	*Gen X* 65; Sales Heads of solution provider (25) and their clients – CIOs, CISOs, IT Heads (40).
B: Online Professional Network – *Within an organization function*	Transform enterprise account planning by building a growth mindset for enterprise sales teams.	*Millennials* 26; Account Executives (5), Operations (4) and Client Servicing (17).
C: Digital Consulting Services – *Across domains in a business*	Enhance go-to-market service offering and improve client servicing by building trust and collaboration across teams.	*Gen X (25%), Millennials (75%)* 12; CEO, COO, CHRO, Media Planning Team (6), Specialist Leads (3).

Table 1. Case study summary.

In terms of depth of study, the embedded case study method was used instead of holistic, as the goal was to examine a sub-unit of each case to answer the related research question. Each intervention is a part of the overall context of related case study and was selected to examine the role of play in facilitating creative concepts required in the three phases of the human-centric design process – Inspiration, Ideation, Implementation (Design Kit, I.D.E.O., 2016) – in order to meet the goals of the intervention. Case study A deals with **creative empathy building** (Yaniv, 2012) using LEGO®, case study B deals with **divergent thinking** (Runco and Acar, 2012) using candy, and case study C deals with **creative agility** (Hill et al., 2014) using spaghetti. While these were the key concepts of analysis for their respective cases, they were not mutually exclusive to the cases. The creative behaviours and factors related to these concepts were observed, analysed and interpreted in this report. Hence, three research questions are stated as follows:

- Case A: How can play enhance the ability to creatively empathize and connect with each other?
- Case B: How can play improve divergent thinking for better co-creation outcomes?
- Case C: How can play improve creative agility in diverse teams (generation and specialization)?

It is important to highlight that these play-based interventions use proven approaches deployed by the academic and designer community and are designed for emergent collaboration and creativity. The researcher of this study is the facilitator of these workshops. They follow a facilitation format rather than an instructional format of delivery like those typically designed in the context of organizational development (OD). These interventions involved the joint development of experiences, interpretation of metaphors and debriefing of outcomes by the members of the organizations, without any influence by the facilitator on participants' creative behaviors nor towards their creative output. There was however structure and specificity in tasks. A broad set of guidelines was provided to imbibe a safe, non-judgemental environment for playful, creative self-expression. Each of these interventions have been applied to different organizational contexts and the observed individual and team behaviors are consistent. In terms of data collection, the observations, analysis of participants' behaviors and lessons learned are based on primary data available in video clips, pictures, written feedback and provided through personal interactions with participants while facilitating the workshops (interventions) in the year 2019. To summarize, the diversity in participant profile and organizational contexts, along with repeatable play-based approaches and environmental conditions provide for the validity and reliability of this research study.

4 Case study description and analysis

Each case study description is structured to discuss the context and goals of the intervention conducted for the organization, followed by workshop flow and observations, and lastly the analysis of creative behaviors and lessons learned.

4.1 Case study A: enterprise IT solutions

4.1.1. Context and goal of intervention

The Country Manager of a global technology infrastructure solutions provider was looking to untap new business opportunities from current and prospective clients – CIOs, CISOs, IT Heads. An offsite conference with the theme – Be a Digital First Leader – was organized to educate clients on trends as well as new products and services. The marketing team was asked to come up with new, engaging formats to engage the clients at the conference. A 4-hour workshop was designed to playfully understand key challenges of the clients in order to improve the sales pipeline for the solutions provider, in addition to providing a platform for the IT leaders to network with their peers. Participants used LEGO® and other art and craft material to co-create a visual model of a digital-first leader and share organizational challenges during their digital transformation journeys. The Sales Heads of the solution provider (25) co-facilitated the workshop with their respective clients (40) during the workshop.

Play activities conducted: Super Duck, based on the open source methodology of LEGO® Serious Play® (referred to as LEGO® in the activity description) that was originally developed by Johan Roos and Bart Victor at IMD in Switzerland.

4.1.2. Activity flow and observations

The 4-hour workshop commenced with the creative daydreaming activity called Vision Boarding, resulting in a vision board of the dreams of the senior IT leaders. They mindfully dreamt of themselves as a digital-first leader and sketched a picture of what they saw in their dream. They put up these vision cards on a large, common board with open visibility. This set the stage for realizing these dreams with understanding and addressing their challenges using the hands-on, duck building activities using LEGO® bricks. The solution provider (Sales Heads) were seated with their respective clients (IT leaders) so they could collaboratively build a digital-first leader. These activities were designed to rediscover, reflect and share themselves with each other in order to build their future-ready, digital-first leaders with their hands. Each participant was given a set of sticky notes, sketch pens and a bag of 8 LEGO® bricks.

To kick-off the LEGO® building session, participants built a duck with bricks and imagined themselves as the duck by portraying one super power or strength as a senior leader. Sharing the characteristics of their ducks with each other on their table helped in building stronger connections between the Sales Heads and their clients. Proceeding to the Super Duck activity, the facilitator then posed the question, “So how does a duck survive in a jungle full of beasts?” The participants were then taken through three steps – “1. Empathize with the beasts; 2. Understand their challenges; 3. Become a Super Duck!”

This time the participants had to work as a team on their respective tables. They picked 2-3 beasts from a list provided to them. These beasts represented organizational stakeholders such as the business team, employees, partners and other internal and external customers. An indicative list of traits for each beast was provided: Lion - Power, fierceness, courage; Alligator - Deceptive, go-for-the-kill, shrewd; Elephant- Hard to move, lazy, big ship; Giraffe - Big picture view, elegant, snooty; Pig - Dirty, slow-witted, gullible; Monkey - Fickle-minded, uncertain, agile; Tiger - Confident, trustworthy, decisive. In order to empathize with the beasts, they created a Customer Persona by collectively

deciding on the top 4-5 challenging traits of their key customers. Then they created an Empathy Map and collectively identified the jobs to be done, feelings, influences, pain points and goals of their beasts. They were given 15 min to discuss their points as a team and put up sticky notes on the empathy map drawn on a chart paper.

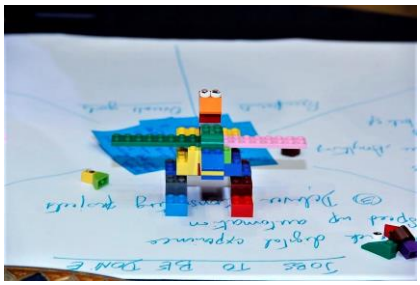

Figure 1. A Super Duck.

Once they completed the empathy map, they brought back their ducks to work on building a combined Super Duck. This was a symbolic representation of the collective superpowers of the IT leaders that were needed to address the top three challenges of their beasts. With team members now leaning in and with all hands on the table, they played with their ducks. They discussed as a team and reconfigured the ducks to build a new Super Duck that metaphorically represented a digital-first leader. The teams then presented their Super Ducks with all participants in the workshop. A sample Super Duck is shown in figure 1.

4.1.3. Analysis and lessons learned

Research Question 1: How can play enhance the ability to creatively empathize and connect with each other?

The Super Ducks created by the teams were metaphorical representations of themselves as a team. They built a model that would address the complex challenges of their organizational stakeholders. Each 3D model was the output of the empathy process. It was a unique experience with a story about their one-of-a-kind Super Duck that was characterized by a brand identity, personality, values, mission, fears and challenges. This approach helped them see the problems and come up with solutions collaboratively. They had transferred tacit knowledge into a visual artifact that could be easily shared and discussed easily.

For instance, one the teams described their Super Duck by saying that "... underneath the surface it's [duck] paddling really hard", indicating that IT was struggling to keep up with the pace of change in business requirements. Then continuing to demonstrate the duck's capability to transform and proactively act on issues in an agile manner by explaining that "we used the elephant, alligator and lion as the challenges we want to overcome... and so when it senses danger it turns into a Velociraptor [species of fast, intelligent, aggressive dinosaur].... and then it launches its own little satellite which can go sense danger and then come back".

With the help of the Empathy Map, one of the first artifacts in the design thinking process, the Sales Heads were able to understand not just the challenges and goals in depth but also the activities and feelings of the IT leaders. This level of empathy helped them to build stronger relationships and helped prioritize the product and service offerings to their clients that would later result in a better sales pipeline.

One of the broader messages that emerged from the playful interactions was that IT leaders were feeling disengaged from the rest of the business and treated like a support function. While on one hand they were expected to provide the technology infrastructure for running business operations and improving employee experience, they were now also expected to support innovation projects. They were now actively seeking alignment and a relationship of 'co-existence and partnership' with the

business and their partners (solution providers) at large. They wanted to play a stronger role in business growth and saw themselves as strategic partners.

4.2 Case study B: online professional network

4.2.1 Context and goal of intervention

The Marketing Director of a global professional networking services company was looking to transform the Enterprise Account Planning process for the India team. She wanted to develop a growth mindset that would help in doubling the revenue for the business in the coming year. The challenge was to improve internal collaboration and co-create a shared purpose among the Enterprise Sales Teams comprising Account Executives, Customer Service Managers and Cross-functional Partners in order to develop transformative Account Plans for the business.

Two workshops were set up with this team of 26 members –Warm-up and Deep-Dive. Each working pod was a team of 1 Account Executive, 2-3 Customer Service Managers and 1 Cross-functional Partner. The goal of the first 4-hour workshop was to introduce the value of a growth mindset to each working pod and let them experience the concept of neuroplasticity through rounds of solution building. Participants would apply the creative strategy of breaking patterns in order to think divergently for the subsequent creation of new account plans. The 6 pods played with candy to build a child-like mindset, thinking unbiasedly and collaborate to arrive at creative outcomes.

Play activities conducted: Trick or Treat, developed by Fridolin Beisert, ArtCenter College of Design, USA.

4.2.2 Activity flow and observations

The 26 team members (Millennials) were split into their 6 working pods to maintain the working relationship. The Trick or Treat Challenge involved four timed rounds of 2 minutes each. At the end of each round, each pod would be scored out of a maximum of 5 points for their creativity. They were asked to select a score-keeper for their teams. Each table had a small, transparent packet filled with 8 candies placed on a big chart paper. Each packet contained six assorted candies of different sizes and shapes, and each candy was wrapped in a different color. A sense of curiosity could be seen on the participants faces. They were all waiting to open the packet and wanted to know what was coming next. The Marketing Director and Sales Head chose to stand and watch the activity.

Round 1: Predictably Rational

The pods were invited to sort the contents of the packet into an order that makes sense to you. Suddenly, their curious smiles vanished and they seemed guarded. One of the participants asked, “So can we take out the candy from the packet?” Not expecting such a reaction, the facilitator rolled up his sleeves, took out his jacket and invited the suited managers to do the same. “I want you to loosen up a bit. What happens in Vegas stays in Vegas!”, he laughingly exclaimed, trying to lighten up the uptight mood. He assured them that this room was a safe, non-judgmental, creative environment. They were allowed to play with the contents and express themselves as they wished.

Some of the participants leaned in and hesitantly open the packet to explore the contents, while some began to discuss some strategies on how they could sort the chocolates. The analysis-paralysis situation was setting in. Checking the time, the facilitator reminded them of the one minute time that was left, so that they could build some momentum. Hearing this, some of them leaned forward organizing the chocolates while others suggested how they should be organized. At the end of the second minute, the facilitator stopped the timer. He randomly picked teams to describe their creation in 30 seconds.

He went around the room patiently listening to each team and scored them on a scale of 1 to 5; 1 being the lowest and 5 being the highest. As expected, all the teams had sorted the contents either by size or

shape or color, i.e. physical attributes. Each team had presented their creation passionately; however, no team had scored more than 2 out of 5. They wondered why. The facilitator then pulled up a slide to show them why he wasn't surprised. It read "Round 1: Physical – size, shape, color, weight, etc."

Round 2: Daring Hesitantly

The facilitator then quickly moved to round 2, again giving them the same brief – "Sort the contents in whatever way you want." This time he tried to motivate them and asked them to stretch their minds. As time passed by, the noise in the room increased. They were all leaning in, discussing, and playing with the chocolates. As the momentum built, a sense of psychological safety was setting in as the comfort levels of working together increased. They were starting to drop their armor of perfection and started playing like children.

Soon it was time to share their work. As the facilitator went around the room, they explained their creations using attributes such as price, value, and taste. Some had even started storifying their creations. As their explanations became more creative, their creations became more emotional. Clearly, they were now thinking with their hearts.

The facilitator pushed the teams to extend their stories on the spot, by prompting them with "what if…?" and "and then…?" questions. Their impromptu, theatrical renditions resulted in bursts of laughter and feelings of camaraderie. Once the stories were shared, the facilitator thanked them for sharing their expressions and pulled up a slide that read "Round 2: Emotional - price, value, design, taste, etc." The average score had increased to 3 out of 5.

Round 3: Embracing Chaos

The facilitator now invited them to completely let their guards down. "Sort these chocolates in any order you wish, but now think like a child. What would a young kid do in this situation?" He asked them to open up their minds to break their pattern of thinking and go for the not-so-obvious solutions, setting the buzzer for 2 minutes.

"See them as different parts and think about them metaphorically. Use your imagination without limits", he asked them to mindfully think of the various tools that had been provided to them. Taking cues from the brief given, they were now starting to stand up and move the candies around. The wrappers were coming off. They had finally seen the contents and were now playing, touching, and tasting the chocolates. They had begun working shoulder to shoulder, fluidly providing inputs and building on-the-go.

Suddenly, cheers to breakthroughs could be heard. "This looks so messy but feels amazing!", "We've created a piece of art", "Picasso in the making, bro!" were some of the verbatim of the partcipants in the room. They were crackling with joy, making sounds like little kids in a playground. Clearly their play states had been activated while chaos was happily being embraced. As the facilitator walked around the room, he could see the participants expressing themselves freely. Thoughts became creations and creations quickly became short stories filled with emotions. He then stopped the timer and asked the teams to present their creations, "so who wants to go first?" Almost everyone in the room had their hands raised high up, while some were still not willing to stop working. He pleaded everyone to stop and share their creations.

Figure 2. Chocolate-driven co-creation.

Three of the highest scoring creations were as follows:

- One team used the chocolates like crayons, drawing an emotional story about Romeo and Juliet. They had crushed a few pieces to build 3D models of mountains and castles from the medieval era, as shown in figure 2.
- Another team ate up all the chocolates and acted like cartoon characters inspired by the different characteristics of the chocolates.
- Another team wore the chocolate wrappers – making rings for their fingers and ears, tying them on their eye-glasses and making noise by rubbing the wrappers and stomping on them.

4.2.3 Analysis and lessons learned

Research Question 2: How can play improve divergent thinking for better co-creation outcomes?

The combined energy in the room was at an all-time high, yet quite blissful at the same time. After each team presented, they all cheered for each other. The scores were announced but they clearly did not matter anymore, and neither did their official roles. While scores had mattered in the beginning to trigger action, their importance diminished once a flow was established during the workshop. Their minds and bodies were so absorbed with the task at hand that they had lost track of time. All that mattered was their different perspectives, and how they had some together to create a coherent storytelling experience.

The pods had moved from largely fixed to a growth mindset. This was evident in the manner their narratives had shifted its nature in round 2 – from being logical (using the physical characteristics of chocolates) to being emotional over the three rounds of co-creation, without the brief being changed. Shifting to emotions helped open up their minds and generate new ideas. This showcased divergent thinking that produced rounds of creative twists in their stories. This may have stemmed from diversity in their roles and backgrounds but also different ways of thinking. Each story emerged to be unique and inherently creative.

During the debrief session, they realized how, with each round, they had taken the initiative to push their group's creative thinking, built with the available resources within given constraints, and gradually improve storytelling over a short period of half an hour. As the feeling of fear transformed into that of belonging, there was an acceptance for mistakes. Failure was reframed as learning. They also discussed how fighting the obviousness led to surprise – that felt inherently magical, thrilling, and emotional. They shared how a shift to a child-like mindset could accelerate creativity, which was interestingly a process to search for novelty and failure was part of it. The material played an important role in activating multiple senses for enhancing creative confidence. Using food items such as chocolates provide for multi-sensory stimulation by helping activate the taste buds and allowing

participants to use them creatively due to it flexible nature. In round 3, they were being crushed, transformed into different shapes and metaphorically used to fit the storyline.

Initially there was an uptight feeling in the room, possibly because of the Marketing Director's presence. Perhaps if she had participated in the activity, the participants would have expressed themselves freely much earlier in the journey. Also they noted that it took time and energy to overcome the desire or need to conform to what is accepted normally. They had fought their fears of being judged, of trying the unknown, and of losing control. The facilitator's role, therefore, in continuously motivating the pods was crucial. They finally did share their vulnerability. More importantly each participant had given themselves the permission to first express themselves and then allow others to express in a non-judgmental manner.

Along with the lessons learned from the pattern-breaking creative strategy from the Trick or Treat activity, participants were now in a playful state characterized by positive affect. They were instrinsically motivated and eager to start the Deep-Dive session to create new account plans, keeping in mind the insights gained from the previous customer empathy and insight generation session. Some of the reflective prompts provided to facilitate the generation of transformative account plans were – Can you challenge the brief provided by your clients? What creative approaches are you using to understand them better? What's something new you learned at your last customer meeting? What do you know about the client that even the client hasn't realized yet? What creative solutions can provide meaningful and competitive advantage to your client?

The act of co-creation with the clients to explore new solutions was also explored. The pods had moved from a sales mindset of 'always be closing' to 'always be co-creating'. Many new divergent, transformative options were discussed with the client to inspire innovation solutions, such as offer a massive solution, but also smaller versions of it; offer the massive solution as a menu; start small and close the big deal later; and offer additional value-added options. The following feedback was publically shared – a) "Annual account planning is a sales ritual, especially for Enterprise sales teams. In true spirit, we are not just about dreaming big but also having fun along the way!", stated the Marketing Director; b) "Never imagined good account Planning could be done in such an unorthodox way! Excited to create some kickass plans basis what we learnt!", stated an Account Executive.

4.3 Case study C: digital marketing and consulting services

4.3.1 Context and goal of intervention

The newly-hired CEO of a digital marketing and consulting agency wanted to conduct the annual planning session to discuss the business strategy and chart out the way forward for the new fiscal year with the Media Planning Leads (3) and their senior team members (3), along with COO and CHRO. He arranged a 3-day off-site summit to have the Media Planning Leads to present their business (profits and product) plans and chart out a way forward.

Due to the growing demands from clients for an integrated digital offering, the agency had recently built the Specialist teams in domain areas of creative, technology and strategy consulting. While the revenue share of the media business was the largest at that point in time, the growth opportunity from specialized services was still untapped. The CEO had observed the silod nature of working among the Media Planning and Specialist teams. He wanted to improve chemistry, common language and collaboration across the teams and invited the Specialist Leads to this off-site annual planning session. He had an inclusive style of leadership and wanted to make his team feel that he was approachable.

To facilitate the planning sessions across the 3 days, creative workshops were designed to infuse the presentation and planning activities with playfulness, with less of one-way powerpoint presentations and more two-way interation and discussion. The CEO wanted to build a sense of trust, openness and autonomy. He wanted the teams to co-own the overall business strategy, decide on their own action plans and collaborate for better business outcomes. The ultimate goal of the summit was to come up

with 2-3 transformation programs along with action plans and success metrics, basis shared understanding of signals and inputs from the teams that would improve their integrated service offering as well as create a better client serving ethos.

Play activities conducted: Spaghetti Tower, developed by Peter Skillman, Director of Design for Outlook at Microsoft Corporation.

4.3.2 Activity flow and observations

Fully cognizant of the challenge regarding lack of trust and collaboration between the Media and Specialist teams, three teams were carefully created to account for diversity of specialization. Also, in order to observe the dynamics of co-creation in terms with generational differences, CEO, COO and CHRO were strategically placed in the team. The team composition was as follows – Team M had Millennials only (3 media planning, 1 specialist); Team Mx had 3 Millennials (2 media planning, 1 specialist) and 1 Gen X (CEO); Team Xm had 2 Millennials (1 media planning, 1 specialist) and 2 Gen X (COO, CHRO). The coding of Team M, Mx and Xm has been done for purposes of this research only.

Each team had to construct the tallest free-standing tower possible using the following materials – a packet of uncooked spaghetti sticks, 1 meter of masking tape, 1 meter of string, and 1 marshmallow. The marshmallow had to be placed on the top of the tower, the point from which the height would be measured. The challenge lasted for 18 minutes with 3 checkpoints, each after 6 minutes of time lapse.

6 Min Checkpoint: At the end of the 6th min, Team M's table looked messy with spaghetti sticks all over the table and some on the ground. They had ripped off the packet of spaghetti and started playing with the tape. Some were typing the spaghetti together with the string and some were using the masking tape to stick the spaghetti together. There was no planning. Movements seemed to be chaotic but more action than talk. Team Mx had explored the material and spent the first few minutes exploring a few options. They then decided to build two prototypes and later go with the tallest one. There was some action kicking in but some discomfort could be sensed on the faces of the Millennials in the team while the CEO (Gen X) made the key decisions. Team Xm, led by the COO, seemed to have selected the one strategy they would adopt and were discussing the approach on how they would construct the tower. The CHRO was seen to be assigning tasks and getting agreement on the go-forward plan. There was no action, only planning.

12 Min Checkpoint: By the 12th minute, the teams were all on their feet and this time they all had made progress. Each team had a tower up but their heights and structures were different. Team M had the tallest tower at about 3 feet. However, they were struggling to make it stand on its feet. The initial camaraderie was turning into anxiety. There seemed to be some power struggle; however, they were all beginning to talk more while building the tower. Over the last 6 minutes, Team Mx had decided to go with their second option. The Millennials in the team had started to open up more with Gen X (CEO) and they were now having more short and fast conversations, collaborating with each other more than earlier. They still however had the shortest tower in the room, about 1 foot, standing on its little feet. Team Xm still seemed to be quite professional and calculative while building the tower. The COO and CHRO (Gen X) still had full charge of the proceedings while the Millennials now seemed to be passively aggressive but not entirely expressive about their ideas. They had the second tallest tower with a solid foundation, almost as tall as that of Team M.

18 Min Checkpoint: At the end of 18 minute, the buzzer rang and the facilitator asked everyone to stop building and keep their hands away from the table. The room was in a chaotic mess but full of energy. It would be obvious to think that team Xm had the tallest tower since they collectively had more experiences and presumably the necessary skills. But Team Mx won! Figure 3 shows CEO standing on a round table, trying to stop a 5-feet spaghetti tower from toppling down.

Figure 3. Team Mx building a spaghetti tower.

4.3.3 Analysis and lessons learned

Research Question 3: How can play improve creative agility in diverse teams (generation and specialization)?

While team Mx did better than the other two teams, all the teams exhibited feelings of pride and joy about their creations. They promptly shared their journeys and learnings at the debrief session. During the debrief session with the teams, Team Mx shared that they had decided to go for a new, third option in the 15th minute. From the manner in which the participants were proudly sharing their prototyping approach, the CEO (Gen X) seemed to have let his guard down and allowed the Millennials to take over in terms of building the tower, while they supported from the outer lines, providing inputs as needed. He let go of his status of seniority for the sake of rapid experimentation. This was essential to create a sense of psychological safety and trust among each other.

Not only had Team Mx succeeded in building the tallest tower but also came up with a metaphorical explanation for the structure. They described the tower as an 'organization', where the base of the tower was the 'foundation defined by an innovative culture' and the marshmallow was the 'mission'. Till the last minute, Team Mx continued to increase the height of the tower by adding more spaghetti and using string effectively. They called these extensions – 'supporting partners' of the organization that helped it grow tall. If more time and material were provided, they would probably have gone higher. They also discussed the importance of the 'connection' denoted by the strength of the strings that bonded the organization together with its partners. Team Mx's capability to move fast and go higher showed high creative agility.

Team M unfortunately could not make much progress. They were not able to go higher without a strong foundation. Their fear of losing what they had built prevented them from rebuilding their tower. They had also not settled their differences as evident from their disappointed faces. Team Xm were progressing well and reached the height they had planned earlier, however it still fell short of Team Mx's tower. Even if more time and material were provided, their tower would not have been able to accommodate the material due to its design constraints at the foundational level. It was too rigid to change and the COO, CHRO were holding the reigns until the end, not allowing the Millennials to implement their ideas. While a safe, creative environment for self-expression was established before the workshop began, the Millennials still felt conscious of their actions, which was also initially observed with Team Mx.

Key takeaways discussed were that skills and experience are great to have in a team but having a strategy that is not agile does not help in unknown situations. When dealing with uncertainty, there is great value in having a bias towards action, i.e. iterating fast and often in order to succeed sooner. For the best outcomes, there needs be a sense of autonomy driven by psychological safety earlier on in the co-creation process. People in the team should feel connected and allow everyone to contribute for learn and act fast from failure. The silos between the teams were broken. This was evident from the

interactions at the final Action Planning session that followed this session. The media planning team seemed to have broken the ice with the specialist leads, and the CEO had built a good rapport with the teams. The summit culminated with a discussion on next steps based on the compilation a detailed list of action items with owners and timelines under 3 transformation programs – Talent, Delivery and Growth – that would enhance the quality of client servicing and introduce new integrated service offerings for clients bringing together media, creative, technology and analytics services.

5 Discussion and implications

While humans are built for play (Brown, 2009), as adults only some are playful by trait. This paper built the case to situationally turn on playfulness as a state rather than as a trait during each phase of the design thinking process, so that employees can willingly shift to a beginner's mindset. As observed in the case studies, this mindset is necessary to activate creative problem solving behaviors and create a flow at work, due to its influence on psychological factors such as intrinsic motivation and psychological safety. Also while the innate creative nature of play is well-understood, what is more intriguing and valuable in the organizational context is its natural ability to foster individual and group creativity when a conducive environment and appropriate tools for individual self-expression and collaborative creation are provided. As evident from the case studies, fostering creativity with play creates the realization that the "answers are in the system" (Kristiansen et al., 2009) of employees and customers that they need to allow for expression without judgement. When employees are allowed to express freely and voice their opinion, a sense of trust and belonging is created. While applying the design thinking process to drive change in organizations, it is important to manage how we think and feel. The right behaviors can build adoption and ownership of change. Activating play behaviors has the potential to build a sense of connection, allow everyone to participate more willingly and articulate tacit knowledge in individuals and teams.

Theoretically, the interventions intentionally followed the entangled play continuum of free play ("paidia") and rule play ("ludus") (Caillois, 2001) for workshop delivery, hence allowing participants to simultaneously experience fun and seriousness at the same time. By applying this "paradox of intentionality" (Statler et al., 2011) that naturally emerges in serious play, participants experienced this play continuum in fostering creativity across the phases of the design thinking process. As explored in case study C, this paradox provided for divergent thinking simultaneously with convergent thinking, resulting in different levels of creative agility – a key organizational capability for discovery-driven learning (Hill et al., 2014) in the ideation and implementation phases respectively across levels in the organization. In case study B, divergent thinking was facilitated using multi-sensory, flexible play material such as candy that helped participants generate new and diverse ideas (Runco and Acar, 2012) filled with emotionally-creative storytelling. In case A, participants were able to creatively empathize (Yaniv, 2012), connect with each other and co-create a shared understanding by playing with bricks. This physical interaction was central to structuring their own thoughts, interpretations and actions.

In each purposeful play experience, the state of flow (Csikszentmihalyi, 1990) was experienced where participating in creative play activities became its own reward, and extrinsic motivation factors such as scores and time constraints did not matter once participants immersed themselves into the activity mindfully. These creative interventions aided in infusing play into the design thinking process and situationally turning on playfulness as a state in individuals and teams with heightened sense of imagination and co-creation. In addition, since engaging in non-work related creative activities elevates positive affect, intrinsic motivation, trust and psychological safety for emergent co-creation, organizations should perhaps consider conducting such activities as a starting point for challenges that are directly linked to business innovation. This provides for a more holistic nourishing and rewarding transformative experience, as observed in cases A, B and C.

Table 2 below summarizes the play activities with key concepts and factors discussed in this research paper. The detailed description of each play activity was provided while discussing the case studies.

Also, while the play activities were originally developed by the mentioned academicians and designers, they were customized to meet the intervention goals of the cases.

Play Activities	**Super Duck (case A)**	**Trick or Treat (case B)**	**Tower (case C)**
Play material and characteristics	LEGO® - Connect and build; flexible but not moldable; visually appealing, playful colors	Chocolates - Similar to clay; moldable; can be crushed; sticky; activates taste and smell senses; visual appeal	Spaghetti - Brittle; rigid Marshmallow - Looks lightweight but can topple a spaghetti tower; activates taste and smell senses
Developed by	Johan Roos and Bart Victor at IMD in Switzerland	Fridolin Beisert, ArtCenter College of Design, CA, USA	Peter Skillman, Director of Design for Outlook at Microsoft Corporation, USA
Design Thinking Phase (Design Kit, I.D.E.O., 2016)	Inspiration	Ideation	Implementation
Concepts explored	Creative empathy (Yaniv, 2012)	Divergent thinking (Runco and Acar, 2012)	Creative agility (Hill et al., 2014)
Unit of analysis	Individual, Team	Team	Team
Prominent Design Thinking mindset constructs explored (Dosi et al., 2018)	Mindfulness and awareness of process, Human centeredness, Empathy / Empathic, Holistic view / consider the problem as a whole, Problem reframing, Critical Questioning ("beginners mind", curiosity), Abductive thinking.	Team working, Multi- / inter- / cross-disciplinary collaborative teams, Open to different perspectives / diversity, Envisioning new things, Creative confidence, Desire to make a difference, Optimism to have an impact.	Tolerance for - Being comfortable with Ambiguity – Uncertainty, Embracing Risk, Learning oriented, Experimentation or learn from mistake or from failure, Experiential intelligence / Bias toward action.
Type of play enabled (Brown, 2009; Sennett, 2008)	Constructive, Exploratory, Role	Constructive, Imaginative, Sensory, Competitive, Pretend	Constructive, Competitive
Key factors influencing creativity	Affect – positive and negative (Vosburg and Kaufmann, 1999); Psychological Safety (Edmondson, 1999); Creative empathy (Yaniv, 2012)	Intrinsic Motivation, Affect, Psychological Safety, Flow (Amabile et al., 2005; Csikszentmihalyi, 1990; Vosburg and Kaufmann, 1999)	Psychological Safety, Intrinsic Motivation, Flow (Csikszentmihalyi, 1990; Edmondson, 1999; Hennessey and Amabile, 1998)
Creative processes applied (Russ and American Psychological Association, 2014; Vygotsky, 1976)	Broad associations, perspective taking, narrative development, integration of affect, emotional expression	Divergent thinking, broad associations, perspective taking, narrative development, emotional expression, convergent thinking	Cognitive flexibility, risk taking, experimentation, convergent thinking

Table 2. Summary of play activities with key concepts and factors.

In terms of limitations and future research, this paper focuses on the potential of play to facilitate one key concept in each of the three phases of the human-centric design process. This means that there are opportunities for empirical research in other concepts such as convergent thinking during concept

building or integrating customer feedback into the solution. Also, while the paper demonstrates the cross-contextual impact of play across and within functions and businesses, each play intervention was meticulously customized by the facilitator with the client in order to meet specific organizational objectives. Identifying the best practices of this process of co-creating play-based interventions could be another area of research. In addition, controlled experiments that measure the impact of infusing play on psychological factors related to group's creativity along with individual well-being can be another research opportunity. Lastly, organizational leaders should note that play is being positioned as a catalyst to the design-led innovation process, and therefore measuring the returns of play in terms of sustaining a creative mindset would be more advisable rather than assessing its monetary benefits.

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