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DESIGN THINKING FOR BUSINESS INNOVATION IN ASIA: THE CULTURAL PERSPECTIVE

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Abstract
As a human-centered innovation approach, design thinking (DT) has been widely applied in a variety of industries and spheres to create new and enhance existing products, services and processes by organizations around the globe. DT is highly collaborative, involves direct communication/feedback and requires cross-functional/cross-hierarchical participation. DT is also iterative, necessitating embracing risk and ambiguity of the experiment and instead of penalizing ‘failures’, learning promptly from them. Nevertheless, Asian countries are often described as high power distance, high uncertainty avoidance, collectivist cultures in which high context and indirect communication are implied. This conceptual article includes analysis of academic research articles, reports, interviews and books by design thinking experts to analyze advantages of design thinking for business innovations, discuss major cultural characteristics of Asian countries using Hofstede’s cultural dimensions and respective challenges in applying design thinking. It concludes by providing practical recommendations, limitations of the analysis and suggesting aspects for future research.
Key words: Business, Culture, Design Thinking, Hofstede, Innovation.

OSIYODAGI BIZNES INNOVATSIYALARI KONTEKSTIDA DIZAYN TAFAKKURI: MADANIY NUQTAI NAZAR

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Annotatsiya
Inson tafakkuriga yo'naltirilgan innovatsion yondashuv sifatida dizayn tafakkuri (DT) butun dunyo bo'ylab tashkilotlar tomonidan yangi mahsulotlar, xizmatlar va jarayonlarni yaratish va mavjudlarini yaxshilash uchun turli soha va tarmoqlarda keng qo'llaniladi. DT keng miqyosdagi fikr almashinuvida hamkorlikka asoslanib, to'g'ridan-to'g'ri muloqot va fikr-mulohazalarni o'z ichiga oladi, hamda korxonadagi turli soxa bo’limlari va ierarxiyalararo ishtirokni talab qiladi. DT, shuningdek, qayta-qayta yangilanuvchi jarayon bo'lib, tajribaning xavf-xatarlari va noaniqligini qabul qilishni, shuningdek "muvaffaqiyatsizliklar" ni jazolash o'rniga, ulardan tezda o'rganishni talab qiladi. Shunga qaramay, Osiyo mamlakatlari ko'pincha an’anaviy ierarxiyalikka, yuqori noaniqlikdan qochishga, yuqori kontekst va bilvosita aloqa nazarda tutilgan kollektivistik

madaniyatlarga asoslanib ish yuritishlari tavsiflangan. Ushbu kontseptual maqola biznes innovatsiyalari uchun dizayn tafakkurining afzalliklarini aniqlash, Xofstedning madaniy o'lchovlaridan foydalangan holda, Osiyo mamlakatlarining asosiy madaniy xususiyatlarini va dizayn tafakkurini qo'llashdagi tegishli muammolarni muhokama qilishni o’z ichiga oladi. Buning uchun, ushbu maqolani tayyorlashda, mutaxassislar tomonidan yozilgan akademik tadqiqot maqolalari, hisobotlari, intervyular va kitoblarni tahlil qilindi. Shuningdek, ushbu maqola amaliy tavsiyalar, tahlilning cheklovlari va kelajakdagi tadqiqotlar uchun takliflarni taqdim etish bilan yakunlanadi.
Kalit so'zlar: Biznes, madaniyat, dizayn tafakkuri, Hofstede, innovatsiya.

ДИЗАЙН-МЫШЛЕНИЕ В КОНТЕКСТЕ БИЗНЕС ИННОВАЦИЙ В АЗИИ: ПЕРСПЕКТИВА КУЛЬТУРЫ

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Аннотация
Дизайн-мышление (ДМ) — это человеко-ориентированный инновационный подход, широко применяемый в различных отраслях для создания и улучшения продуктов, услуг и процессов. Дизайн-мышление требует высокого уровня сотрудничества, включает прямую коммуникацию/обратную связь и предполагает участие межфункциональных и межуровневых команд. Дизайн-мышление также является итеративным процессом, требующим принятия риска и неопределенности эксперимента и способствует быстрому обучению на основе “неудач”. Культуры стран Азии часто характеризуются высокой ‘дистанцией власти’, высокой степенью ‘избегания неопределенности’ и коллективизмом, подразумевается высокий контекст и непрямые коммуникации. Эта концептуальная статья включает анализ академических исследовательских статей, докладов, интервью и книг экспертов по дизайн-мышлению, чтобы обсудить преимущества дизайн-мышления для бизнес-инноваций, основные культурные особенности азиатских стран с использованием модели Хофстеде и соответствующие проблемы в применении дизайн-мышления. В заключение предоставляются практические рекомендации, ограничения данного анализа и предлагаются аспекты для будущих исследований.
Ключевые слова: бизнес, дизайн-мышление, инновации, культура, Хофстеде.

Introduction

With unprecedented change in technology, transportation and communication, business organizations and institutions face an urgent need for proactivity, forward thinking and ultimately, innovations as a vital necessity at all stages of the business processes. Indeed, the only aspect that remains constant is change, that “is arguably faster than it has been ever before” (Mootee, 2013, p.3). Design thinking is a human-centered approach to innovation and a problem-solving tool developed to “understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test” (Interaction Design Foundation, 2016) brought into mainstream by the design company IDEO and the Stanford d.school in 1990s. In addition, Donald Norman has transformed innovation focus from being primarily functionality oriented to a human/user/customer and their needs. While design thinking has been successfully applied in a variety of industries across all functions in profit and nonprofit organizations, some researchers argue that there are important cultural implications that should be

considered while applying this methodology in Asian countries/context. Consequently, the purpose of the underlying conceptual article is to analyze benefits of design thinking for business innovations, and by undertaking a cultural perspective using the model of Geert Hofstede, discuss its implementation challenges and suggest recommendations for Asian countries.

Methodology

Analysis of the underlying conceptual article is based on the academic research articles, reports, interviews and books by leading experts and practitioners in the design thinking field such as Idris Mootee, the CEO of IDEO Couture and Jeanne Liedtka, a professor at the Darden School of Business at the University of Virginia, online design school Interaction Design Foundation, and Harvard Business Review.

Literature Review

There are two major lines of research identified with respect to innovations, culture and design thinking. The first line focuses on the impact of national culture on innovations. In 1980 social psychologist Geert Hofstede conceptualized culture by developing the framework encompassing power distance, uncertainty avoidance, masculinity/femininity and individualism/collectivism dimensions. It gave rise to a number of empirical studies on national culture and innovations in the 1990s. For example, based on the set of 33 countries, Shane (1993) identified that higher innovation rates are associated with uncertainty acceptance, individualism and lack of power distance. Morris et al. (1994) found that individualism/collectivism are important factors for understanding entrepreneurial behavior in the firm. Nakata and Sivakumar (1996) examined the relationship between national culture and new product development. Eisenberg (1999) studied the role of individualism/collectivism on creativity and innovation practices in Japan and the USA. Furthermore, based on the sample of 19 countries Yaveroglu and Donthu (2002) identified that “coefficient of innovation is high in countries that are high on individualism, low on uncertainty avoidance, and low on power distance”. Similarly, Yeniyurt & Townsend (2003) found that acceptance of new products is hindered by high power distance and uncertainty avoidance but it is positively affected by individualism dimension. Strychalska-Rudzewicz (2016) applied the Hofstede framework to analyze the relationship between culture and innovations in European countries. It was identified that “low power distance and low uncertainty avoidance countries are in most cases more innovative” and “more individualistic countries achieve better innovative results”. More recently Boubakri et al. (2021) conducted a comprehensive study on the relationships between 6 Hofstede’s cultural dimensions (including time orientation and indulgence in addition to the four original ones) and national innovation in a set of 29 culturally diverse countries. Similarly, they identified higher innovation probability by firms in individualistic, indulgent, masculine, long-term oriented cultures with less power distance, less uncertainty avoidance. To sum up, empirical studies generally indicate that innovations are higher in cultures with low power distance, low uncertainty avoidance, and high individualism and vice versa.

The second line of research focuses on conceptualizing design thinking and analysis of its application in organizational context. Daymond and Knight (2023) provided a comprehensive discussion of design thinking in business and management, combining

major definitions, perspectives and opportunities. They identified cognitive, instrumental and organization-level research approaches to design thinking. *Cognitive* focus, refers to the ability to "frame and reframe the problem" (Beckman, 2020, p. 145, cited in Dayton & Knight, 2023, p. 6). Cognitive biases and mental models may hinder the effectiveness of abductive reasoning that design thinking relies upon (Garbuio & Lin, 2021, cited in Dayton & Knight, 2023). Social-psychological factors such as individual awareness and openness may be conducive to the ability to leverage the design thinking approach resulting in deeper insights on customer needs, while lacking motivation may constrain innovation attempts (Thompson & Schonthal, 2020, cited in Dayton & Knight, 2023, p. 7). *Instrumental* focus views design thinking as a social technology offering tools to address problems (Liedtka, 2020), conceptualize solutions (Visser, 2006, cited in Dayton & Knight, 2023, p. 8) and iterate ideas (Akkerman & Bakker, 2011; Vinck et al., 1996, cited in Dayton & Knight, 2023, p. 8). Thirdly, *organizational level* factors such as strategy, facilities and resources for design thinking, appropriate understanding, performance frameworks and design competencies, play a significant role in organizational integration of design thinking (Wrigley et al., 2020, cited in Dayton & Knight, 2023, p. 9).

The research by Kwon et. al (2021) that analyzed application of design thinking in large corporations using in-depth interviews of 20 design thinking professionals from Oracle, T-Mobile, Line, and Samsung can be characterized by *organizational level* approach. They found that implementing design thinking in large organizations is strictly limited, as "every new idea demands too many resources", is time consuming and lacks efficiency. The most "safe, non-risky and unanimous ideas" are prioritized (by contrast to the traditional framework) prioritizing product over users/customers. Consequently, a 'corporate design thinking model' was suggested as being more appropriate for large corporations. This model combines 'empathy' and 'define' stages, so that design thinking workshops start with already defined problems and expected outcomes. Instead of small group collaboration, ideation and prototyping are done via departmental collaboration, where roles and responsibilities are determined based on the expertise. Hence, Kwon et al (2021) suggested that the impact of *corporate/organizational culture* on design thinking application can be significant. Likewise, Calabretta et al. (2008) argued that conducive organizational culture is necessary for design thinking to flourish. Some researchers suggested that these elements of conducive culture are tendency to experiment, tolerance for failure and stimulating everybody to participate in innovation (Brown & Martin, 2015; Rosenberg et al., 2016, cited in Prud'homme, 2017, p. 57), but the comprehensive model is absent. Yet, based on the dominant view in the literature, organizational culture, in its turn, is strongly influenced by national culture (Hofstede, 1983, 2001) and national culture is the major component of a broader context that constrains organizational culture (Johns, 2006).

To sum up, previous research suggested that national culture affects innovations. Nevertheless, it has not been studied how national culture, as the major constraint of organizational culture, can influence application of specific organizational innovation tools, such as design thinking. The research on specific barriers that hinder organizational application of the concept is also limited (Liu & Mannhardt, 2019). Hence, this conceptual paper aims to discuss benefits of design thinking as a business innovation tool, use power

distance, uncertainty avoidance, individualism/collectivism cultural dimensions (based on the Hofstede's framework) and communication context classification (Hall, 1976) to identify important characteristics of Asian cultures, related challenges of applying this tool and suggest practical recommendations for application.

Results and Discussion

1. Design thinking: definition, application and process stages.

Design principles emerged in the 1950s and 1960s mainly in architecture and engineering. In 1991 the design company IDEO brought *design thinking* into the mainstream with specific terminology, toolkits and stages that are non-linear and iterative (Dam and Teo, 2022). This methodology is used to create new products, services, and processes and revise existing ones based on customer's feedback and insights drawn. In 2004 David Kelly established a Hasso Plattner Institute of Design at Stanford, known as a d.school, to develop, teach and implement design thinking methods. Since then, design principles that were traditionally associated with arts, craft and visual aesthetics, have found practical implementation in problem solving and innovation management across multiple industries and spheres such as entrepreneurship, healthcare, education, infrastructure, entertainment, manufacturing, services around the globe. Conceptually, the CEO of IDEO Tim Brown defined design thinking as a "a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success." (Interaction Design Foundation, 2016). Importantly, design thinking is particularly useful for wicked types of problems that are complex in nature, involve multiple interdependent stakeholders, are difficult to define and do not have a set of potential solutions (Buchanan, 1992, cited in Interaction Design Foundation, 2016).

The following design thinking stages have been developed by Hasso Plattner Institute of Design (cited in Interaction Design Foundation, 2016). They are non-sequential: can be run in parallel, out of order and are iterative (i.e. can be repeated).

1. *Empathize*: collect data on customers via research to gain insights into their needs (survey, interview, observation, etc.)
2. *Define* the root problem(s) by synthesizing the data collected.
3. *Ideate:* think outside the box to challenge the assumptions and develop ideas and alternative solutions.
4. *Prototype:* create inexpensive, scaled-down tangible product solutions to "visualize possible solutions" (Daymond and Knight, 2023, p. 8) and "to bring everyone on the same conceptual page, uncover new knowledge, mitigate design and development risks early on" (Mootee, 2013, p. 150) (e.g. paper prototypes, sketches)
5. *Test* the solution with real customers, collect feedback for further refining and if needed, going back to previous stages

2. Advantages of design thinking, Asian cultural characteristics and related challenges of implementation.

Based on 50 projects in business, healthcare and social services, Liedtka (2018) argues that design thinking as a social technology "unleashes human creativity, wins their commitment and radically improves processes". Design thinking addresses innovations challenges as it provides a better understanding of ultimate users via immersion and

empathy, is conducive to new insights by organizing data into themes and patterns, encourages fresh ideas and emergence of diverse set of potential solutions, collects feedback at low cost and builds staff commitment and creative confidence via experimentation and "learning in action" (Liedtka, 2018). According to IBM (cited in Haritas, 2019) design thinking may double the speed to the market, boost the business efficiency by 75% and increase the return on investment by 300%. Apple, Amazon, Netflix, GE Healthcare, Airbnb, UberEats and BMW have been successfully implementing the approach. In addition, design thinking requires organizational conditions including strategic vision and long-term goals, facilities and resources, directives for implementation and cultural capital. The latter implies whether workers' understand the value of design thinking and are actually capable of practicing it (Wrigley et al., 2020).

Although design thinking is not a new concept, it may be practically challenging to internalize and practice its principles and processes by businesses. For example, managers of Fortune 500 companies tend to maintain authority by relying on rigid and systematic command-and-control management to eliminate variation via consistency and predictability, resulting in bureaucracy and distancing them from customers (Mootee, 2013). About 80% of management tools are designed for value capture, not for value creation. Furthermore, national *cultural context* is important to consider while implementing it in Asian countries. Based on the cultural model of Dutch social psychologist Geert Hofstede (1991), Asian cultures can be often characterized by high power distance, high uncertainty avoidance, and collectivist tendencies.

Firstly, *high power distance* cultures are hierarchical societies, where employees are expected to follow the orders of their managers without challenging them or taking initiative and "there is no defense against power abuse by superiors" (Hofstede, 2024). For example, Malaysia (100), China (80), India (77), Singapore (70), South Korea (60) are high power distance countries (scores in brackets out of 100). Specifically, in China the hierarchy is deeply rooted in Confucian 5 types of constant relationship (rule-subordinate, father and son, elder brother and younger brother, husband and wife, and friend and friend) and determines the order in the society. As mentioned by Dr. Bettina Maisch, a design thinking expert at Siemens Corporate Technology (CT) in Beijing: "Chinese colleagues are oftentimes very timid, for example during the brainstorming phase. It's extremely important that the supervisor is not in the brainstorming session, otherwise everything will have a totally different dynamic." (Hasso Plattner Institute for Digital Engineering, 2015). Another example of high power distance culture can be represented by the Samsung Group's chairman Lee Kun Hee decision to enter the automobile industry in 1993 during its global consolidation and rationalization (Chang, 2010). The few managers who opposed the decision were dismissed though in 1999 Samsung Motors went bankrupt and was sold to Renault. While design thinking is essentially a collaborative process involving diverse cross-functional and cross-hierarchical teams, discussion during ideation/brainstorming stage, for example, may not be productive and achieve its purpose, as it is "difficult to debate and question the superior" (Collias, 2020).

Secondly, *high uncertainty avoidance* (not being willing to assume risk to avoid uncertain situations in fear of failure consequences, feeling "threatened by ambiguous or unknown situations") is another characteristic of Asian cultures such as Japan (92), South

Korea (85), and Pakistan (70), to name a few (Hofstede, 2024). High uncertainty avoidance cultures imply preference towards structure, predictability, detailed planning against all possible risks in advance. Failure is viewed as "shameful, weak, and is penalized" (Board of Innovation, 2024) whereas avoiding conflict and preserving harmony is viewed as a virtue. This tendency may unnecessarily slow down the learning process by extending the planning stage and delaying prototyping. It may also explain employee's resistance to constructive criticism and feedback in the empathy and testing stage in contrast to the basic design thinking principle of 'fail fast, fail cheap, and fail early'. Moreover, innovation may not be seen as an organizational priority. In 2015 during CEO survey by McKinsey China, it was identified that executives believed the key to success was "credibility with headquarters and the local team and people management", while innovation was ranked lowest (Wenderoth, 2016).

Thirdly, *collectivist* culture members view themselves as part of a group and prioritize loyalty to their group's goals over their personal ones. Relationships are protected to avoid loss of face and shame. Individuals tend to conform to society's expectations and ideals and are not particularly willing to stand out with idiosyncratic or unconventional thinking. For instance, Malaysia (27), Thailand (19), Kazakhstan (20) and Indonesia (5) are examples of collectivist societies with low Individualism scores (Hofstede, 2024). Organizations in such cultures may find it challenging to discern ideas from participants through the 'outside the box' thinking during the idea brainstorming/ideation, to motivate them challenge assumptions and the status quo. Moreover, "expressing openly and spontaneously one's own ideas can be interpreted as a lack of restraint or even direct confrontation" and result in loss of face (Collias, 2020).

Lastly, as opposed to low context communication that is direct and relies highly on the words in conveying the meaning, *high context* communication is indirect. It implies 'reading' the meaning from the contextual factors, situational setting, nonverbal behavior, relative status, and tone of voice, without necessarily articulating it into words. Without proper facilitation, structure and instructions this tendency may undermine communication efficiency, result in misunderstanding and undesired outcomes.

Conclusion and Recommendations

Design thinking approach to innovation positively impacts businesses by enhancing innovation potential, improving cost-effectiveness, building customer loyalty, creative confidence, and employee commitment. Its main principles are human-centeredness, embracing ambiguity and taking risk, speed and agility, adaptability, flexibility, iterative, non-linear nature, exploration and experimentation (Mootee, 2013). Nevertheless, Asian cultures that are often characterized by high power distance, high uncertainty avoidance, low individualism/high collectivism, and high context communication may face some obstacles to practical application of the model. Consequently, there are several practical considerations and recommendations for application of design thinking as a business innovation tool with respect to above mentioned Asian cultural characteristics.

- To invigorate the creative capacity of employees by reframing innovation as a way to improve service for the customers, as part of customer relationship strategy, but not merely as executing management instructions.

- To recognize that 'failed' prototypes represent progress (Bason and Austin, 2019) and are an essential part of the "cost of innovation". Mootee (2013) suggests adopting a learning approach to innovations: 'learn fast, learn cheap, learn early', instead of 'fail fast, fail cheap, fail early'. Employees should realize they can put "half-baked ideas without losing face or experiencing punitive repercussions" (Kolko, 2015).
- To tailor the design thinking toolkits and processes to better address the cultural context and give staff a voice. For instance, Brittany Arthur (2017), the CEO of Design Thinking Japan suggests using "silent, written, collaborative methods to break down seniority hierarchies".
- To implement a more structured facilitation and discussion and allow time for coming to consensus. Complement brainstorming sessions with follow-up meetings, to allow time to process and express ideas (Coyne et al., 2007). Allocate time for speaking up and organize the large team into smaller groups to ensure more active participation.
- To build creative confidence in and empathy towards employees, by recognizing when they need encouragement, help dealing with emotions and discomfort that may arise during the process and maintaining confidence in moving forward (Bason and Austin, 2019).
- To embrace constructive conflict and dissent, avoid groupthink by assigning a team member to act as a devil's advocate finding potential flaws.
- To introduce incentive systems to encourage experimentation with new ways of working without overreliance on top-down instructions. For example, global semiconductor company Micron encourages new improvements in safety and productivity via incentive programs by rewarding its employees at all levels including front-line factory workers (Board of Innovation, 2024).

In conclusion, several limitations of the analysis and the implications for future research should be highlighted. Although in the underlying discussion Asian countries are brought under the same 'umbrella' for possessing a specific set of cultural features, these dimensions are manifested to a different extent from one Asian country to another. For example, while both Malaysia and South Korea stand as 'high' on a power distance continuum, Malaysia's score is relatively higher. Hence, a high power distance culture characteristic such as 'hierarchical order' is more distinctly represented in Malaysia. Secondly, this discussion does not take into account within-country/regional cultural differences that could be considered for further research. Thirdly, present analysis applies only Hofstede's cultural framework that has been widely used in cross-cultural research to date, whereas other cultural frameworks and dimensions can be applied to empirically investigate the impact of culture on implementation of design thinking and measurable innovation outcomes, in particular. Finally, the main focus of this article consists in the cultural aspect of design thinking application, while organizational strategy, resources and implementation directives also constitute important organizational conditions for innovation and could be complementary factors in future research.

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