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Plurality and Cultural Specificity of Service Design in East and Southeast Asia

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Jung-Joo Lee • Joon Sang Baek • Eun Yu
Editors

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Editors
Jung-Joo Lee
Division of Industrial Design
College of Design and Engineering
National University of Singapore
Singapore, Singapore

Joon Sang Baek
Department of Integrated Design
Yonsei University
Seoul, Republic of Korea

Eun Yu
Department of Design
Seoul National University of Science
and Technology
Seoul, Republic of Korea

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About the Contributors

Joon Sang Baek is a Professor in the Department of Integrated Design and the director of DESIS (Design for Social Innovation and Sustainability) Lab at Yonsei University in South Korea. His research area lies in the nexus of service/systems design, sustainability, and social innovation. He is currently interested in complex sociotechnical systems design, relational service design, post-humanist design, human-nature connection, and human-nature interaction design.

Fang-Jui 'Fang-Raye' Chang is a Responsible Innovation Lead, Co-holder of Radicle Civics, and Strategic Designer at Dark Matter Labs, primarily focused on societal structural transition and new civics. They worked at the Public Digital Innovation Space (PDIS) in the Taiwanese Central government when it was led by the Digital Minister without Portfolio, Audrey Tang, at the time. They graduated from the Royal College of Art with an MA in Service Design. They have experience in democratic innovation, public service design and prototyping, open policy-making and rule-making, decentralized and distributed governance design, and large-scale civic participation and facilitation.

Alvin Jia Hao Chia is the Head of Digital Assets Innovation (APAC) at Northern Trust. In his role, he develops market-leading innovations, fosters ecosystem partnerships, and drives regulatory advocacy aligned with Northern Trust's digital asset strategy. Alvin is also pursuing a PhD in the Division of Industrial Design at the National University of Singapore, where his research focuses on the practical application of service design among non-designers.

Lisa Lin Halskov practices as an experienced manager with a demonstrated history of working in the customer experience design, graphic design, consumer goods industry, and sustainability strategy development across China, the USA, and Denmark. She holds a US Master of Business Administration degree focused on Marketing. She served as an Innovation consultant, certified LEGO® SERIOUS PLAY® workshop designer and facilitator.

Integration Project 2020 Team consists of the Healthy Food Program Management of the Thai Health Promotion Foundation (ThaiHealth), the Project Management team of Innovation Network International (INI) with local organizations and local key actors who work directly on the ground.

Yoori Koo is Associate Professor of Service Design at the Graduate School of Industrial Arts, Hongik University in Seoul, South Korea. She also serves as the director of the Service Experience Design Lab, where she conducts applied and theoretical research on the interactions between people, products, and places. Her research interests include co-creative and empathic approaches, with a focus on employing human-centered design thinking across public, healthcare, and industrial sectors. Dr. Koo is an advisory member of the Ministry of the Interior and Safety's Citizen Participatory Design Group (CPDG), a design innovation committee member at the Korea Institute of Design Promotion, and a committee member of the International Association of Societies of Design Research.

Jung-Joo Lee is an Associate Professor and Deputy Head of Research in the Division of Industrial Design at the National University of Singapore. She is also the Director of the Service Design Lab Singapore, where she collaborates with various government organizations and companies across Asia. Her current research focuses on harnessing service design and co-design to drive innovation in the public sector and care economies, with a particular emphasis on emerging technologies.

Shu-Yang Lin is a founding staff member of the Government of Taiwan's Public Digital Innovation Space (PDIS), and established a cross-ministerial policy-making process that organized over a hundred deliberative workshops, inviting citizens to participate in policy making with representatives from multiple government departments. She also contributed to the local grassroots civic-tech community, g0v, through spearheading the process design for vTaiwan, a local experiment in digital regulatory consultation and collaborative reform. Shu-Yang works with international teams, including AI Objectives Institute and Dark Matter Labs, who open source their platforms that design interactions and processes among socio-technological components to maximize the quality of deliberation.

Tetsuro Morimoto holds a PhD degree from the Faculty of Information and Communication Engineering, Graduate School of Information Science and Technology at the University of Tokyo, and received BE and ME degrees from Chiba University. He is currently a manager at Toppan Printing Inc. His areas of interest include physics-based computer vision, virtual reality, and robotics.

Debbie Ng is a PhD candidate at the Division of Industrial Design at the National University of Singapore, where her research focuses on design leadership in public organizations. With over 15 years of experience in navigating complex systems, she has applied human-centered design methodologies to address a wide range of public and social challenges. As Managing Director of ThinkPlace Singapore, she partners

with public sector organizations and non-profits across Singapore and Asia to drive innovation in public policies and services through strategic design thinking, service design, and co-design approaches. Debbie also serves as an Associate Trainer with the Singapore Civil Service College, equipping public leaders and servants with design leadership skills and service design techniques.

Chihiro Sato is an Associate Professor at Keio University Graduate School of Media Design where she leads the Service Design Course. With backgrounds in economic geography and performing arts, her works on service design cocreates with physical communities where economic, cultural, and social activities take place, such as markets, theaters, and squares. Her recent interests are around cocreating social infrastructures enabling service ecosystems to continue self-adjusting and self-containing.

Satoru Tokuhisa is an Associate Professor at the Faculty of Design, Kyushu University, and director of the Creative Leadership Programme. He is a researcher and practitioner with strong interests in human-computer interaction, service design, and innovation management. He practices new business creation using human-centered design, service-dominant logic, and effectuation. He's the author of the book "Weaving Regional Innovation - New Businesses Spun Out of Resources."

Wallapa van Willenswaard is co-founder of INI—Innovation Network International, along with Hans van Willenswaard. Her work on food system co-creation has extended inside Thailand, Southeast Asia, and Asia-wide, including the Mindful Market Asia Forum. She is the director of the Innovative Food Policy Councils project in two cities of Thailand. She is also the director of the Food Spirit project, which relates to the spiritual dimension of food and international networking. All projects are based on participatory approaches engaging diverse groups and organizations.

Pisate Virangkabutra or Jett is a PhD candidate and an adjunct lecturer at Thammasat University, School of global studies. He is also the Head Design Instigator at Create.ture design studio, an innovation consultant that focuses on using the Human Centered Design methodology to create innovation for both public and private sectors in the areas of public service design, social innovation, design capacity building, design for justice and sustainability.

Bruce C. K. Wan is a Senior Lecturer in the Department of Creative Arts at Hong Kong Metropolitan University. His research focuses on technology-mediated experience design, aiming to create extraordinary experiences that promote human flourishing. Bruce bridges academia and industry, addressing co-design challenges. Committed to educating future designers, his work spans tourism, leisure, service innovation, and social design. He is currently engaged in projects exploring the co-design process for technology-mediated experiences for design and entertainment industries.

Chen-Fu Yang is the founder of the 5% Design Action and DreamVok. He has long been committed to social design, senior design, digital and sustainable transformation, assisting industries in Taiwan in adopting service design, promoting public service innovation, and nurturing a new generation of service design talent. He is currently the founder of the Service Design Network Taiwan Chapter, the chairman of the Asia-Pacific Service Design Association, and the vice chairman of B Lab Taiwan.

Eun Yu is an Assistant Professor in the Department of Visual Communication Design at Seoul National University of Science and Technology. Her research has focused on theorizing the designerly service design approach from the multidisciplinary perspective and theory, especially related to service marketing and management, and she is currently interested in how to operationalize service (eco)systems theory in designers' systemic design practices.

Fang Zhong is the co-coordinator of the DESIS (Design for Social Innovation and Sustainability) Lab at the Academy of Arts & Design, Tsinghua University. Her research focuses on design for sustainability and social innovation, with topics ranging from food networks and waste management systems to the circular economy and aging. Her primary research methods include community-based design and systems design. She has a background in both philosophy and design.

Chapter 1
Introduction: Service Design in East and Southeast Asia as a Phenomenon

Jung-Joo Lee, Joon Sang Baek, and Eun Yu

Abstract This book explores the adoption and practices of service design within the socio-cultural contexts of East and Southeast Asia, where its applications are shaped by local economic, political, and cultural influences. Through case studies and narratives from academia and practice, the book highlights the plurality of service design in this region, examining how it is understood, institutionalized, and enacted in diverse localities. By focusing on cultural specificity, this work seeks to broaden the conceptualization and practice of service design, emphasizing the importance of local knowledge, values, and contexts in its global development. Key themes include pragmatic adoption, cultural manifestations of value co-creation, and the interplay between traditional and modern approaches in service design.

1 Service Design Travels

Over the last decade, we have seen a wide spread of service design in different sectors and different parts of the world. Government organizations, companies, social organizations, and grassroots communities have employed service design as an approach to tackle complex problems and create human-centred innovation. There seems no limit to applying service design in various industries, including finance, healthcare, mobility, education, information technologies, urban planning, energies,

J.-J. Lee (✉)
Division of Industrial Design, College of Design and Engineering, National University of Singapore, Singapore, Singapore
e-mail: jjlee@nus.edu.sg

J. S. Baek
Department of Integrated Design, Yonsei University, Seoul, Republic of Korea
e-mail: joonsbaek@yonsei.ac.kr

E. Yu
Department of Design, Seoul National University of Science and Technology, Seoul, Republic of Korea
e-mail: eyu@seoultech.ac.kr

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aviation, and manufacturing. From this wide range of adoptions, we have observed divergence, or sometimes confusion, in how service design is understood, applied, practiced, and institutionalized. The phenomenon that service design is often entangled with various connotations has been one of the key concerns for many service design researchers and practitioners over the years. A large volume of efforts were made to examine this phenomenon and provide clarifications and conceptualisations of service design (e.g., Karpen et al., 2021; Kimbell, 2011; Meroni & Sangiorgi, 2011; Roto et al., 2021; Vink et al., 2021; Yu, 2020).

The origin of service design is traced back to management and operations studies in the 1980s, which emerged as an approach to manage the quality of service and develop new services based on customer needs (Shostack, 1982). Since then, it has been adopted across different disciplines, such as design, system engineering, information system science, and so on. In design, service design was first intersected with interaction design and human-centred design (e.g., Clatworthy, 2011; Holmlid, 2007; Secomandi & Snelders, 2011). Later informed by the notions of service dominant logic and value co-creation (Vargo & Lusch, 2008), service design has expanded beyond designing services as outcomes (Kimbell, 2011) towards designing for value co-creation platforms or ecosystems (e.g., Kimbell, 2011; Vink et al., 2021; Wetter-Edman et al., 2014), sometimes with transformational agendas (Sangiorgi, 2011).

The abovementioned trajectory of service design contributed to the diversity in what service design considers and how it is practiced. After all, service design is a genuinely socio-technical practice that is co-produced in a local context (Blomberg & Darrah, 2015). From this perspective, the existence of diversity is embraced into plurality, as a "condition of any empirical context and a consequence of acting in or on any empirical context" (Karpen et al., 2021). Leading service design researchers who were trying to provide definitions and discipline-specific frameworks now focus their efforts to describe diverse scenes of service design and explain how to make sense of the diversity, sometimes entangled with tensions, towards the plurality of service design as a direction that can enrich and expand the discipline (e.g., Karpen et al., 2021; Sangiorgi et al., 2022; Akama & Yee, 2024).

Clearly one of the dimensions that constitute the plurality of service design is a cultural context where it is enacted. Given that the conceptual and methodological conventions of service design originated in the United States and Northern Europe, one can argue that the concepts, methods, and praxis of service design were shaped by the socio-cultural and economic contexts in the Western and developed parts of the world (Akama et al., 2019). In the meantime, we have witnessed that service design over the past decade travels across geographical boundaries. Seeing the successful cases from Europe and the United States, companies and government organizations from the non-Western world, for example, Asian regions, started to try out this "new" approach. We've observed such portability of service design (Lee, 2014) from the Western parts of the world to the non-Western contexts, in the forms of collaborative projects and training by Western-based design consultancies, processes and tools associated with those projects and training, and publications on theories, methods and cases.

2 Important Questions

The three editors in this book are service design researchers and educators who studied in Europe and now practice in Asia. We have observed anecdotal applications of service design in various contexts in Asia, by government organizations, banks, hospitals, non-government organizations and so on. In Asia, there are increasing job posts related to service design, and recognizing the industry demand, educational institutes started to develop new programs focusing on service design. According to the Service Design Network,[1] the largest global community of service design professionals and academics, there are currently 10 chapters in the Asian regions, out of a total of 47 chapters globally. Such rapid adoptions of service design in Asia then leave us some questions. Given that service design is a socio-cultural practice and co-produced in a local context and that it was developed in the Global North with the dominant Eurocentric economy;

- How does then service design, as a logic, a method, or a practice, interact with socio-cultural contexts of Asian regions?
- How does service design get "adopted"? And what do local service design practitioners do to make service design work and create impact?
- How would the adoptions and practices of service design be entangled with local contexts of Asia?
- In what sense do the abovementioned questions hold values? How would the understanding of service design in the cultural contexts of Asia contribute to the description of plurality of service design, and eventually to its broader impact and long-term development?

There are a few precedent studies that explored the plurality of service design in terms of cultural contexts. One salient body of work would be Design and Social Innovation in Asia-Pacific (DESIAP), initiated by Yoko Akama and Joyce Yee (Akama & Yee, 2016, 2024), while their focus is rooted in social innovation and participatory design not specifically service design. Beyond the colonial legacies, often unintentionally embedded in contemporary design processes, they encourage designers to cultivate sensitivity to locality, culture, value and knowledge in their practices (Akama et al., 2019; Baek et al., 2019). In a similar light, Duan (2023) unveiled local designers' situated practices within service design projects in China, seeking narratives and vocabularies of actual service design practices beyond the popular methods and process diagrams.

These observations drove the motivation of this book. We aim to unveil, describe and understand the current phenomena of service design adoptions and practices in various Asian regions, exhibiting different economic and political structures, as well as social norms and values. We deliberately use the terms "adoptions" and "practices" to indicate different phenomena. Firstly, we use the term "adoption" to indicate a deliberate process and associated actions to bring a form of knowledge

[1] https://www.service-design-network.org/chapters

outside in. We are interested in contemplating trajectories or patterns in how local organizations in Asia adopt service design as a topic of analysis. Scrutinizing such will bring us an understanding of perceived values and benefits of service design that seemed intelligible to different organizations in Asia according to their legacy and agenda. We can also understand different organizations' conceptions of 'what service design is' by contemplating processes and actions of adopting service design, as well as actors and resources involved. Secondly, regarding the term "practices", we look at local practitioners' situated work to enact service design within projects or organizations. By doing so, our aim is to elucidate local practitioners' decision-makings and actions situated in local contexts with their own problems, actors, values, and resources. Could we identify divergent understandings and practices of service design away from where it was originally developed? What may influence such divergence? What contextual richness may be unveiled underneath the well-known service design processes? What commonalities may still be identified within the divergence, which might help us crystalize what service design is essentially about?

When we collected the cases and discussions about service design in Asian regions for this book, the notion of cultural sensitivity informed our analytic sensibility. While we use "East and South Asia" or "Asian regions" as a conceptual unit of analysis to identify cultural specificity, our focus is not to identify cultural differences but to describe what is happening with service design and why, in relation to certain localities and situations "embedded within global and historical flows of material, people, capital, knowledge and technology" (Irani et al., 2010, 1317). Making sense of how service design is understood and unfolds in different, especially underexplored, socio-cultural contexts will help to describe diverse facets of service design and broaden the landscape of service design practices, theories, and contributions.

3 Contributions in This Book

As the editors of this book, we aimed to collect various service design stories and viewpoints from various parts of Asia, which can demonstrate a wide range of diversity in adoptions and practices of service design interwoven with peculiarities of socio-cultural contexts. The contributors of this book are not only from academia but also from practice to unveil how service design is adopted, positioned, and enacted in various organizations according to their specific and pragmatic agenda, beyond scholarly discourses.

All chapters in this book are genuinely introduced and narrated by local authors who were positioned within the localities and projects. The recounts of service design by local authors will bolster our intention to unveil service design in Asia as a phenomenon as it is and contribute to the diversity of conceptualizations, vocabularies, intentions, actions and concerns around service design in Asia. As far as we are concerned, external observations or reviews by service design researchers or

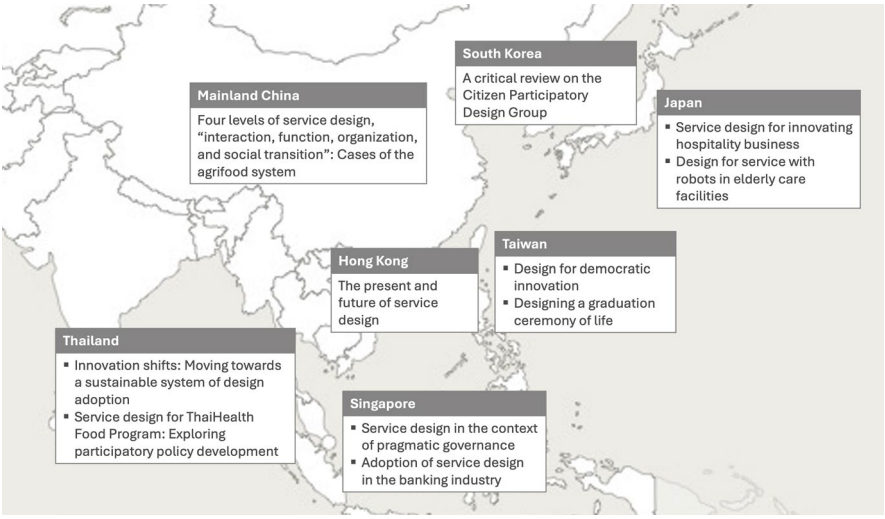

Fig. 1.1 A geographical overview of the 11 contributions from seven Asian regions

professionals who are well versed in current discourses of service design might have imposed uniformed viewpoints. To have the local contributors recount their service design stories is our editorial intention to embrace the diversity towards plurality.

As a result, this book presents 11 authentic recounts of service design from seven Asian regions, including South Korea, Singapore, Japan, Thailand, Mainland China, Taiwan, and Hong Kong (see Fig. 1.1). This list of the regions is an outcome of the editors' outreach and authors' availability, and we acknowledge that these regions are only small subsets of the entity called Asia. Thus we acknowledge this constraint explicitly in our book title, scoping it into *"Plurality and Cultural Specificity in East and Southeast Asia"*.

It is also important to note that the chapters in this book do not intent to represent service design in East and Southeast Asia as a totality. Individual chapters offer their own unique contexts, practices, and outcomes as situated in their specific localities. As the editors of this book, we present our efforts to identify common patterns and dimensions that cut across the different chapters in an inductive manner, to distil insights and offer a systematic understanding of plurality of service design contributed by cultural specificity. However, each chapter focuses to elucidate how service design is understood, adopted, and enacted in the specific socio-cultural context of the locality.

While interwoven relations between design and culture have been explicated to a marked extent (e.g., Dong & Lee, 2008; Sun, 2012), our interest in cultural specificity is more on design as a verb, i.e., actions and practices for designing, rather than design as a noun, i.e., objects and outputs from deliberate actions (Gasparin, 2019). Therefore, the chapters in this book do not necessarily discuss localization of service offerings or touchpoints.

The 11 chapters in this book introduce cases and observations from various sectors, namely, governments, non-government organizations, banks, hospitality, care homes, and grassroots communities. Among the 15 authors, eight authors are practitioners, and seven authors are from academia. This edit contributes to the diversity in topic, viewpoint and style of the chapters.

Besides the 11 chapters on the individual contributions, we wanted to create a collective avenue where all contributors reflect upon each other's stories and discuss together cultural specificity and future directions of service design in East and South East Asia. We organized an online symposium where all contributors were invited to share their views on the topics of historical contexts of service design in their regions, adoptions and trajectories of service design, and challenges they encountered in relation to the socio-cultural, economic and political circumstances. The editors analyzed the symposium results and report the findings in Chap. 13, which offers collective views on the topic of cultural specificity of service design in East and South East Asia. Through this symposium, our aim was to build a knowledge exchange community to continuously reflect on service design in Asian regions with cultural sensitivity, shape future directions, and build dialogues with global service design communities.

In what follows, we give a brief overview of the total of 12 contributions in this book, highlighting how each contribution addresses the main question, i.e., cultural specificity of service design in the Asian regions and how it enriches a plural picture of service design.

Chapter 2 by Chang and Lin shares how service design is used by the Taiwan government to facilitate civic participation and co-creation, bridging the public service development and technology-supported grassroots innovation in Taiwan. Through the cases from the Public Digital Innovation Space (PDIS) of the Taiwanese Government, the authors who were practicing as designers at the PDIS, elaborate on how service design-driven approaches infrastructure spaces for civic participation by engaging both public officers and grassroot communities. Chang and Lin also discuss the limitations of the conventional delivery model of service design in the context of democratic innovation and call for local service design practitioners' sensitivity to power relationships.

A different angle to the government-led citizen participation through service design is presented in Chap. 3**.** In this chapter, Koo introduces a unique initiative by the Korean government called "Citizen Participatory Design Group" (CPDG). In CPDG, service design was employed as a core methodology to enable citizen-regional government-service designer collaboration for public service design. Comparing to the Taiwan government's approach, the Korean government's CPDG adopted far more monolithic process in its conduct as part of the ruling government's projects to support the slogan of "participatory government" at that time. While celebrating the value of the CPDG, the author also applies a critical lens to diagnose the maturity of service design in the CPDG design cases and identifies future development needs for service design to create more profound and sustainable impact.

While the chapters from the Taiwanese government and Korean government focus on citizen participation through service design, Chap. 4 by Lee and Ng looks at what is happening inside the government and shares how service design is adopted and embedded within the government organizations of Singapore. The Singapore government is known for its pragmatic and paternalistic governance style, and Lee and Ng demonstrate how the trajectory of service design adoption by the Singapore government follows their legacy of "pragmatic acculturation", starting from problem identification, benchmarking of the best practices, collaboration with overseas experts, internal experimentation, and tailoring the practice to the specific needs of Singapore. Through this review, the authors discuss the impact, as well as the limitations from such pragmatic adoption of service design.

In Chap. 5, Virangkabutra presents a series of experiments with service design focusing on the social service development by the Thai government after the military coup in 2014. Through the case study of the five government organizations, Virangkabutra analyzes limitations and barriers to the sustainable adoption of design under the Thailand's military government. Based on the diagnosis, he offers a framework of government organization's design adoption levels and proposes what shifts the Thai government should create to achieve sustainable design adoption and impact.

The plurality of service design is explored in the context of industrial sectors of Asia, too. In Chap. 6, Sato elaborates the challenges of Japanese traditional inns (ryokan) to shift from traditional hospitality practices to a new way of serving visitors. She reports a case study of service design for Ibusuki Hakusuikan where a co-creation approach and a service ecosystem perspective were adopted for innovating the traditional ryokan by collaborating with various stakeholders not only from the ryokan but also from the region. The traditional hospitality concept of *omotenashi* is reinterpreted and enacted in co-creation. This chapter provides a practical insight into how service design outcomes can contribute not only to the benefits of multiple actors but also to the growth of business in the hospitality sector of Japan.

Chapter 7 by Chia and Lee looks into the relationship between organization's readiness and service design through the practices of non-designers in the context of the Singapore bank. The chapter illustrates the gradual shifts of the bank's strategies and training programs for service design according to the organization's innovation capability, which demonstrates the organization's take on service design. The authors elucidate local challenges faced by silent designers who are mandated to use service design and the limitations attributed from the organization. This chapter puts forward organizational innovation capability as a critical factor that affects an adoption of service design and its sustainable practice in organizations, indicating the need for exploring the plurality of service design in the context of organizational culture.

Beyond a specific sector, Chap. 8 by Wan, provides a comprehensive review of service design in Hong Kong, based on the perspectives of government officials, design practitioners, and academics. While Hong Kong's economic structure heavily relies on service industries, the understanding of service design is yet to be established. Perceptions of service design are also determined by the government's

funding structure and the client's maturity. While reporting the position of service design as related to other similar design disciplines, Wan unpacks the barriers and enablers for the current practice and the future development of service design in Hong Kong. This chapter relates the successful and sustainable development of service design to pro-innovation and co-creative culture and considers digital transformation as one of the promising directions to foster a future development of service design.

In China, service design was introduced in education and practice nearly two decades ago. However, it is yet to gain widespread acceptance in the industry and public sector, and there is an obvious gap across application, research and education. Chapter 9 by Zhong, discusses this phenomenon in depth. Zhong maps a wide range of service design and innovation projects on the complex agrifood system in China according to four different levels, from interactional, functional, organizational to transitional, and discusses the enablers and the barriers at each level. In doing so, she urges to regard service design as praxis in the life world and calls for the advanced research to inform the praxis by exploring a "broad and solid practical space for new ideas and methods" in service design.

In Chap. 10 by van Willenswaard and her colleagues illustrate the use of design for social innovation in the context of food policy design in Thailand. They argue that service design can be used to create scalable models for transformation toward sustainable food systems. Two case studies—a network of 40 schools that partnered with local farming groups to source organic or natural agricultural products, and a hospital that partnered with local farming groups to source healthy vegetables and rice—demonstrate how service design empowers the creation of a self-organizing, multi-stakeholder, social innovation movement that takes care of food systems with fairness, sense for human and environmental quality, and responsibility for the vulnerable present and future generations. Beyond the conduct of methods, service design is described as a relational practice situated within human to human networks in this chapter.

Chapter 11 by Tokuhisa and Morimoto pays attention to the increasing demand for medical care, elder care, and health-related services due to declining birth rates and an ageing population in Japan. Based on the case study to develop and implement service robots at an elder care facility, the authors provide insights on the technical, financial and psychological issues in introducing service robots and the role of service design to improve caregiver experiences. The benefit of service design is highlighted in the exploration of how to introduce new technologies like robots in the elder care industry without sacrificing human-to-human interaction.

In terms of relational practice, service design is used by the Taiwanese social sector to unlock the conversations on uncomfortable topics among older people. In Chap. 12 by Yang and Halskov highlight service design as a valuable tool that can help people to talk about death in a safe and supportive environment. A series of participatory design workshops demonstrate that service design provides a framework for conversations about death that is both informative and engaging. The inclusion of LEGO Serious Play® as a tool for defining, expressing, and visualizing tacit ideas and perspectives is an interesting addition to the discussion. The authors also elaborate on the conceptual service design model proposed for the practical

application of old-life review and planning. With a unique perspective on death and service design, the chapter invites readers to reflect on our agency to anticipate and design the "graduation ceremony of life".

Lastly, Chap. 13, brings all contributors together and unfolds reflective dialogues on what service and service design means in the participating Asian regions with their own cultural values, histories and current socioeconomic structures. Based on the findings from the symposium with all contributors, this final chapter goes deeper into why service design was adopted by different communities of Asia and how, and what situated work is done by local practitioners to make service design work in their contexts. Reflecting on these findings and the cases introduced in the above-mentioned chapters, Baek, Yu, and Lee discuss how the diverse forms, understandings, trajectories and impact of service design in the Asian regions contribute to the global discourse on the plurality of service design and propose new research agenda towards the future of service design in Asia.

4 Emergent Themes

Across the twelve contributions from the various Asian regions in this book, several themes arise, which can describe characteristics of service design adoptions and practices in Asia. The themes not only indicate the current status but also imply possible dimensions that influence and constitute the plurality of service design. The themes presented here are never meant to be exhaustive but to evolve.

4.1 Theme 1. A Pragmatic and Opportunistic Adoption of Service Design

While there are ongoing discussions regarding the critical reflection of colonialism in the adoption and application of (service) design (e.g., Ansari, 2016; Escobar, 2018; Fry, 2017; Irani, 2018), we have observed that the reality is more intricate. Many Asian governments and companies introduced in this book intentionally and independently embraced service design for strategic and practical reasons. They adopted service design amid significant social, economic, and political shifts (e.g., economic development, expansion of the service industry, growing demand for servitization, and so on). As evidenced in the cases of various governments and companies, these organizations are not viewed by the local authors, at least explicitly, as entities in need of assistance from the Global West/North. Instead, they are portrayed as pragmatic and, in some instances, opportunistic in adopting service design, utilizing service design as a tool to implement and promote their political, economic, and/or social agendas. They adopted service design with expectations of developing organizational capabilities such as customer-centricity, design thinking, and the servitization of manufacturing-based industries. Observing these phenomena, while we acknowledge that many institutions in this book may have lacked

critical reflections in adopting service design, it remains an unresolved question for us whether and how the service design cases presented in this book represent a legacy of colonialism. Our position is that such a discourse needs to be held within broader contexts in which service design is just a small part.

Nevertheless, in retrospect, their pragmatic and opportunistic approaches, mainly rooted in a few characteristics of service design like customer-centricity and design thinking can be partly explained by their limited appreciation and understanding of service design. Many Asian governments and companies who are the promoters, clients, or funders of service design (research) projects are in the process of exploring service design and tend to have a limited understanding of it. For example, they may equate service design with design thinking or human-centered design, without realizing its broader significance. Unfortunately, this premature belief that they have grasped the essence of service design may hamper the sustained growth of the industry.

4.2 Theme 2. Service Design Adopted to Promote Political Agenda

The public sector has been globally the largest body of organizations that applied service design (Service Design Network, 2016), and the governments in the Asian regions have also adopted service design for the past years. In the government cases in this book, service design was adopted as a means to support their political agenda. For example, the Singapore government adopted service design when their long-time ruling party was threatened in the national election. The Thai government became interested in service design as the military government after the coup wanted to engage the citizens. Similar phenomena were observed in East Asian governments, namely South Korea and Taiwan, and their uses of service design were to involve citizens in participatory innovation programs.

For these governments, service design was an alternative approach to relate to citizens, and service design projects and citizen-participatory programs were means to promote their citizen-centricity, as illustrated in the Korean government's Citizen Participatory Design Group by Koo (Chap. 3). Because the adoption of service design was driven by the agenda to engage with citizens, the service design scope rarely goes beyond the citizen interaction level. The authors of those chapters raised their concerns on the government's limited understandings and unclear development pathways. The adoption of service design hardly creates impact in larger design scopes, such as policy systems and cross-organizational or cross-sectorial collaborations. Furthermore, because the service design is used to support the present party's agenda, the continuous growth and maturation of service design is questionable.

4.3 Theme 3. The Identity of Service Design "in the making"

While the popularity of service design is growing in the Asian regions, industries and governments are in the process of exploring what service design is, what benefits it can offer, and what it takes to bring service design in, compared to other existing design fields, such as UX design. One might expect to see more growth and proliferation of service design in the regions whose economies largely rely on the service sector, such as Singapore or Hong Kong. However, the concept of service design seems not fully established in those regions, as diagnosed in Chap. 8 on Hong Kong, and the service industries adopt service design in the form of design thinking to train non-designers, as illustrated in Chap. 7 on the Singapore bank's case. To industries, practitioners and funding bodies, the terminology and concept of service design are often confused or interchangeable with other notions such as design thinking and human-centered design. It was also observed that the "naming", whether to label it service design, design thinking, or human-centered design, depends on whom the organization partners with to adopt service design. For example, Singapore's bank (Chap. 7) started to call their design adoption under human-centered design, following the language used by Luma institute the bank learned the methods from. The Thai government calls it design thinking, as that was stated in their initiative in the partnership with United Nations Development Program (UNDP), whereas the South Korean government deliberately calls it service design to highlight citizens as the "beneficiaries of public services".

In some regions, the traditional perceptions of "service" cause to undervalue service design. For example, in China, "service" and "service industries" were associated with a lower position of the societal hierarchy in the traditional Confucius culture. In Japan, service has a strong association with hospitality business, and it was only recent that other sectors, such as the government, manufacturing, or finance industries, started to see the relevance and potential benefits.

4.4 Theme 4. A Culture-Laden Manifestation of Value Co-creation

We identified a legacy of cultural value as a factor that characterizes the innovation project as a unique service design practice in terms of its perspective and approach. Although the culture itself was not explicitly articulated during the service design process, the meaning and value of the culture shared among designers and stakeholders seemed to influence the outcome. Specifically, serving people with hospitality or mindfulness in interpersonal relationships was commonly identified as cultural heritage of some Asian regions like Taiwan and Japan. The cultural value, associated with value co-creation as a global concept of service, was manifested in various ways during the service design process.

For example, in the projects of Public Digital Innovation Space (PDIS) in Taiwan as reported by Chang and Lin (Chap. 2), value co-creation through public officers' citizen-serving mindset was manifested in a way to proactively involve citizens in the innovation process in order to seek true co-creation rather than tokenistic participation. As another example, the Japanese culture of "omotenashi", which means looking after guests wholeheartedly and thereby forming mutual provider-guest relationships, was pursued in the two different Japanese projects by asking how the cultural philosophy can be reflected in contemporary and innovative technology-supported services. In the ryokan innovation project (Chap. 6), the question was addressed through wider partnerships with actors in the entire service ecosystem surrounding the ryokan, while the case of designing telepresence robot systems for elderly care (Chap. 11) focused on studying the social structure to overcome people's mistrust toward technology and better support their needs. Meanwhile, the Buddhistic culture in Asia seemed to be rooted in the leading principle of the innovation projects of Thailand. In Chap. 10, the mutual care principle of Community Supported Agriculture (CSA) in Thailand may be considered as a modern reinterpretation and application of the Buddhist culture. This culture was explicitly mentioned in the symposium as "dāna" (Chap. 13), which is the practice of cultivating generosity by giving and sharing food offering every morning.

The designers in these chapters commonly related their cultural values with the service concept of value co-creation and raised an issue of how they may re-interpret their culture and develop the culture-laden practices as a new manifestation of value co-creation. Unlike the economy-driven concept of value co-creation, the cultural service design practices in these chapters seemed to be geared towards more humanitarian and symbiotic value co-creating relationships. In some cases, this may be attributable to the context of the projects, which is public service innovation or collaborative service initiated by the public or grassroots. The culture-laden manifestation of value co-creation as introduced in the chapters may pave the way open for future service design practices with a new orientation of value co-creation.

4.5 Theme 5. Mitigating Tensions and Negotiating Between the Traditional vs. New Ways of Doing

Service design plays significant roles in innovations—political, technological, public sector, or business-related—throughout the book. One of these roles is to mitigate tensions and conflicts between traditional and new ways of doing things. For instance, the authors of Chap. 11 observed resistance to technology among users when introducing a service robot to an elderly care facility in Japan. Based on an empirical study, they assert that designers can reduce this resistance and facilitate the acceptance of new technology by considering the regulative, normative, and cultural-cognitive elements during co-creation process.

We also observed that service design can facilitate technological innovation in the Japanese hospitality industry by "balancing human-touch and technology" (Chap. 6). Recognizing that the human touch characterizes genuine hospitality, the

author argues that designers should use technologies to reduce employees' chores, allowing them to focus on what they enjoy doing—namely, "human-touch interaction" with customers. The art of using technologies to reduce labor costs without sacrificing hospitableness is a crucial skill that designers need to possess.

In Chap. 12 on the conversations around tacit ideas and perspectives about death—a topic people often think about but do not discuss as much in Taiwan, service design proves useful as it legitimizes participants' review of life and discussions about death with loved ones, empowers them to plan their lives ahead, prepare for death with a visual aid (LEGO Serious Play®), and share the results with others in a participatory setting. Besides, service design also helps people formulate and articulate tacit perceptions about death.

Mitigation and negotiation in service design is not a smooth journey and requires designers to be patient and perseverant. For the Singaporean bank amid digital transformation and threats from fintech rivals (Chap. 7), the application of service design requires resources, time, organizational support, and knowledge beyond service design methodology. This involves integrating service design with domain-specific knowledge. The Japanese cases (Chap. 6 and 11) suggest that service designers need a profound understanding of the unique cultural contexts they are designing for and be equipped with patience, communicate based on relationships and trust-building, and be present in the field at the right moment.

4.6 Theme 6. Sticking to Codified Service Design Frameworks and Methods

While most of the projects from Asian regions were aligned to pursuing the core outcomes of service design, including enhanced service experience, value co-creation, and transformation, the way of achieving the outcome seemed to heavily rely on a pre-set rigid framework for the design process and a set of methods. The framework and methods seemed to be adopted and used as generally established and practiced in the Western design community and not necessarily questioned or radically changed. Specifically, the structured process model based on the double diamond framework (Technology Strategy Board & Design Council, 2015) and experience-centric and representational service design tools (Blomkvist & Segelström, 2014; Diana et al., 2009) often seem to function as part of normative instruments to characterize the practices as service design cases.

For example, the local innovation projects undertaken by Citizen Participatory Design Group (CPDG) in South Korea (Chap. 3) were tightly structured according to a design manual, called "citizen-participatory public service design manual", which prescribes how service design practices by CPDG should unfold. The manual consists of a five-stage design process and specific research and design activities assigned to each stage of the process. Similarly, the service design projects for the banking industry in Singapore (Chap. 7) highlight the "Journey Thinking" framework as a structured four-stage design process, and associated design activities and methods. Another chapter from Singapore reports how the Singapore government's

adoption of service design was framework- and method-driven (Chap. 4). During the process of embedding service design knowledge and skills acquired from invited consultancies like IDEO, the government's effort was put on training employees a set of framework and methods as a codified knowledge.

This aspect of service design practice may be partly attributed to the adoption of service design as initially imported from overseas and introduced to a few selected organizations in a top-down way. In this context service design tends to be characterized as a methodological concept consisting of codified knowledge of process frameworks and methods. Also, due to the relatively short history of service design in the Asian regions, a reflective and critical question of how these process stages and design methods actually work for the local contexts, how they interact with the local people or how they can be adapted or changed has not been raised sufficiently in the chapters. Or, although there must have been local practitioners' reflective practices responding to the local particularities and contingencies, their work tends to be described with the sterile vocabularies from the well-known process models and with the names of methods. This might happen because such reflective practice by experts is too tacit to be noticeable (Lee, 2014). On the other hand, this phenomenon might have to do with a lack of plurality in vocabularies of service design. Local service design practitioners may feel that "other" narratives besides those codified frameworks and vocabularies would not be legitimate enough to make their service design work look like what it is. This limitation has been also voiced out in earlier studies, for example by Duan (2023) and Akama and Prendiville (2013).

5 Exploring Tensions and Embracing Plurality

While the chapters in this book demonstrate the diverse motivations, pathways, understandings, and scopes of service design interacting with political, historical, economic and organizational contexts, we also observed tensions ongoing and new questions arising, as addressed in the five themes above. The organizations' pragmatic and opportunistic adoptions of service design may drive them to achieve their pre-set goals in an efficient manner but impede the sustained growth and development pathway of service design. How to interpret and reflect the pragmatic adoption by Asian practitioners on the ongoing discourse on design (de)colonialization (Akama & Yee, 2024; Escobar, 2018) also remains as a question. How to build a constructive discourse between the pragmatic stance and the postcolonial stance to service design may require further exploration.

The prevailing tendency of method-driven conduct and communication is part of the pragmatic adoption, but also due to the uncertainty, or belief, in what makes service design "legitimate" universally. There is indeed an implicit tension in what makes service design what it is. Is it the methods used? Or the multiple participants involving service beneficiaries, providers and other stakeholders? Or scopes and outcomes of design dealing with organizational processes and ecosystem? Or the logic of value co-creation? These are not indeed new questions, and it is not our aim

to provide answers in this volume. What we highlight instead is that exploring these questions will bring us alternative and plural ways of understanding, conducting and communicating service design. As far as we believe, "plurality" is not just an inclusive concept that glosses over diversity and tensions. The plurality perspective offers tensions to be continuously explored and further characterizes service design as a discipline and a practice. We further unfold future research agenda in Chap. 13.

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Chapter 2
Design for Democratic Innovation in Taiwan

Fang-Jui "Fang-Raye" Chang and Shu-Yang Lin

Abstract This chapter takes a broader look at Service Design and design practice in terms of the resonance with co-creation and civic participation, which are core elements of democracy. Service Design helps innovate public services and policies through obtaining deep insights from different perspectives, reframing problems, co-creating, and testing with relevant stakeholders. At Public Digital Innovation Space (PDIS) in Taiwan, the ways of approaching challenges using the processes and methods of Service Design need to be re-examined and improved based on the ever-changing context of the Taiwanese central government and its complex systems. As the discipline of Public Service Design develops, it is crucial to reflect on its thinking, doing, and opportunities to support democratic innovation. Responses to questions like "Who designs services and policies?", "Who and what do we prioritize?", "Who and what are being left out of the design process?", "How might we transcend the limitation of representation?", "How might we truly co-create rather than fall into the trap of tokenistic participation?" and "How might we create civic spaces for co-creation?" will affect how society as a whole evolves. Strategies and approaches for democratic innovation through the lens of design are being elaborated on in this chapter, from accounting for all perspectives to institutionalization, followed by discussions and conclusions. Democratic innovation requires a robust civil society to support the work, and the work also reinforces a stronger civil society.

Keywords Service Design · Democratic innovation · Co-creation · Co-design · Civic participation · Collaborative governance · Civic spaces

F.-J. "Fang-Raye" Chang (✉) · S.-Y. Lin
Public Digital Innovation Space, Taipei, Taiwan
e-mail: fang-jui.chang@network.rca.ac.uk; shu@pdis.tw

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1 Introduction

1.1 Design and Democratic Innovation

In the public sector, the interest in Service Design and the involvement of designers in (a) developing innovative services and policies, (b) cultural and organizational change, (c) training and capacity building, (d) improving the quality of civic participation, and (e) digitalization are all increasing by using the capabilities of design to move beyond the given and to infuse a different way of working and thinking into systems (Mager, 2016).

Democracy is not only a matter of voting in elections. In Taiwan, now more than ever, the public is asking for multifaceted ways to be involved in shaping policy and agendas—demanding transparency at all levels of society—from referendums, participatory budgeting, government or independent initiated citizens' assemblies, to co-creating and joining efforts for common good. It is equally important to help nurture civic spaces and the capacity in which citizens engage in policy-making. This could be achieved by providing services, guidance, and tools for participatory and deliberative practices across different levels of governance (Policy Dialogue 2021 Concluding Document: Our Commitment to Democracy, 2021).

This article aims to share and reflect on the Service Design and design practice in the Public Digital Innovation Space (PDIS) (https://pdis.nat.gov.tw/en) in the Taiwanese central government with a focus on co-creation, civic participation, as well as cultural and organizational change. According to Mattelmäki and Visser (2011), "co-design is a process and the planning, adjusting tools and facilitation is built on a mindset based on collaboration" while "co-creation can take place within co-design processes but focuses much more on the collective creativity of involved users and stakeholders."

Co-creation, which is the direct translation of '协作' in Mandarin, shares the same meaning as co-design. Furthermore, it also puts a particular emphasis on inclusivity and the joint efforts for common good, alongside civic participation in every stage of design processes (e.g., expressing experiences, sharing research, making sense of issues, searching for potential directions, producing and developing ideas and solutions collaboratively), based on the practice of PDIS. Throughout the article, the term 'co-creation' encompasses both definitions of 'co-design' and 'co-creation'.

Civic participation and co-creation are used interchangeably in this chapter as they share very similar characteristics in the practice of PDIS in the context of democratic innovation. Civic participation sometimes involves bringing representative groups of people together to deliberate and discuss particular issues and policies. Service Design approaches can either complement each other or be combined with these processes and enhance them. For example, bringing people's experiences into these debates; sharing interviews of people's lives or supporting people to use probes and to become user researchers themselves; visualizing complicated evidence, as well as data and making them accessible for people to interpret,

deliberate, and take decisions on; prototyping and testing solutions with people (Drew, 2016).

Frameworks related to civic participation can also enhance the co-creation practice in Public Service Design. For example, Arnstein (1969) provided a useful frame in "A ladder of citizen participation" (see Fig. 2.1) detailing eight levels of participation, the higher the better, from manipulation, therapy, informing, consultation, placation, partnership, delegated power to citizen control. This framework could provide more nuances for co-creation and civic participation, allowing designers to see whether co-creation or civic participation is worthwhile. For example, understanding stakeholders' concerns collaboratively could be seen as a type of co-creation or civic participation; however, it can be seen as low participation if their concerns are not heard or considered by authorities. In this case, PDIS sometimes plays a role in reminding and influencing decision-makers to collaborate toward a higher step in the ladder and enabling stakeholders to negotiate and engage in trade-offs with traditional powerholders.

Regarding the demand for a more deliberative and participatory model of democracy, the co-creation of services and policies with diverse stakeholders including citizens through human-centred design has become a trend to improve legitimacy, efficiency, and quality of services and policies. However, a few concerns and reflections related to co-creation and civic participation are raised below.

- **Beyond human-centred design:** Human-centred or user-centred design may prioritize the needs of particular stakeholders (users over workers or vice versa) over the planet (Drew et al., 2021a). Which humans do we centre and what about

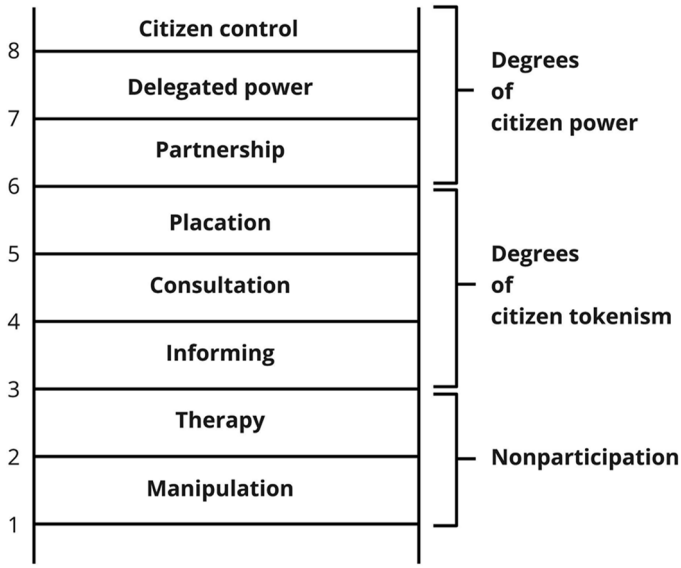

Fig. 2.1 A ladder of citizen participation. (Arnstein, 1969)

non-humans such as oceans, animals, and minerals? Who and what is being left out of the design process? We need to expand our approach towards 'stakeholder' engagement, co-creation, and civic participation by acknowledging the interdependency and agency of everything (meaning that we need to see participation more inclusive, beyond the narrow classification of citizens and humans).

- **Beyond representation:** How might we transcend the limitation of representation? How might we genuinely co-create rather than fall into the trap of tokenistic participation? There is an opportunity for seeing ongoing deliberation, participation, and co-creation as a complement to representation when responsibility and power are shared among all. We need to aim for coherence (rough consensus) rather than convergence (coordinated consensus) (Tang, 2017) as the outcome of the co-creation sessions.
- **Beyond command and control:** Who can design services and policies? By trusting the citizens and wider stakeholders—not 'delegating' but rather 'working with' the people in a way that is entirely voluntary would establish a better foundation for empowering the agency of people in society. We need to shift from the reliance of representation toward a shared responsibility and foster true agency to make positive changes. The advances in technology have enabled the possibility for large-scale participation; however, it is equally important to build the norms for co-creation. Technology alone would never be enough, but technology working with norms that encourage innovative participation is powerful.
- **Beyond consumption and complaint:** There is a need to build a participation capacity to improve the quality and legitimacy of co-creation. The aim is to facilitate a future where ill-advised participants who add nothing to improve society can become makers. Many co-creation workshops showed that people are willing to contribute and improve things if there are spaces to learn, share and hear people's experiences and concerns.
- **Beyond delivery:** People often see service delivery as the end of the design process. In this case, projects result in fixing one bit of a system in isolation. However, the dynamic nature of social systems does not lend itself to static solutions and the unfolding nature of a systemic opportunity means that design work is never 'done'. Working with dynamic systems requires us to give up the illusion of control and the promise of the finished solution (Drew et al., 2021b). Transitioning to the stage of 'unlocking' would allow space to receive feedback continuously following the ever-changing context.
- **Beyond one-off responses:** It is a shame if a design or innovation could not sustain itself over time. Institutionalization, in this case, becomes a crucial instrument for ensuring innovation that can be persistent in the ever-changing political context.

Innovation lives in new ways of thinking and doing. In PDIS, we exercise innovation through the lens of democracy and openness. We see democracy as collaborative rather than representative and practice it by inviting citizens into the processes of developing services and policies. It means that the government is not an exclusive domain of any particular sector; instead, a public and innovative space for active

agents (see Sect. 3.2 for further elaboration of the term). In fact, there is a need to decouple our identity from the idea of sectors and act as fluid and active agents as a public servant, a professional, a citizen, and beyond conventional classification.

Bringing design into this space not only helps PDIS focus on the crucial problems with more clarity, but also facilitates the vision of collaborative democracy through diverse engagement and participation—practicing co-creation in ways that transcend the limitation of representation and expanding the idea of delivery through ongoing co-creation. Taiwan has many unique and inspiring democratic stories compared to the progress and degradation of democracy worldwide. For example, social, environmental, and political issues are increasingly addressed at the most immediate level (i.e., people close to the issues) that is consistent with their resolution rather than representatives or subject matter experts alone. In politics, it is called 'subsidiarity'. We see a trend where people actively participate in social affairs because they know others will represent them if they do not do so. The following section provides more context regarding this nuanced context of democratic innovation in Taiwan.

1.2 Historical Background

From the lifting of martial law in 1987, the Wild Lily Student Movement in 1990, the first direct presidential election in 1996, the peaceful transition of power (party alternation) in 2000, 2008, and 2016, to the Sunflower Student Movement in 2014, they all mark the evolution of democracy. Citizens in Taiwan have iteratively shaped civic participation.

More recently, with the advancement of technology, people share experiences of innovative democratic actions. The g0v decentralized civic-tech community formed in 2012 by local programmers continues to tackle public issues through regular hackathons. Unlike conventional civil society organizations, they advocate information transparency, open results and cooperation, and build technology-related solutions for better civic participation. The community attracts hundreds of like-minded, passionate coders, designers, lawyers, civil servants, and more to join forces and code for self-initiated projects responding to public challenges, including improving the legibility of government budgets through interactive visualization and debugging government websites. They share the motto of 'be nobody', which could be explained by "Ask not why nobody is doing this. You are 'nobody'!" as their website describes. The 'Nobodies' from all industries, including activists, programmers, designers, researchers, journalists, project managers, civil servants, high-ranked government officials, and more, participated in creating a better democracy in Taiwan.

The Sunflower Student Movement, also known as the 318 Movement, began on March 18th, 2014. It was started by hundreds of young activists, mostly students, who occupied the parliament when a trade deal with Beijing (proposed by the ruling party) was about to pass secretively. More protestors on the streets jointly requested

a more transparent process. After the movement, many pro-democracy and open government politicians or activists were elected or appointed to join the government, including Audrey Tang, the mayor of Taipei City, and more. With more people participating, the history mentioned above has paved the pathways toward more vigorous democracy to be advanced further.

1.3 Establishment of PDIS

In 2016, one of the contributors to the g0v community (https://g0v.asia), Audrey Tang, was invited to be the first Digital Minister without portfolio in the central government of Taiwan. The Digital Minister's Office was established in October 2016, and PDIS was launched as an innovation lab, working on three major missions: Open Government (2018b), Social Innovation, and Youth Empowerment. Between October 2016 and August 2022, PDIS is led by the minister without portfolio who does not head a particular ministry but encompasses a bird's-eye view across ministries.

The work of PDIS is similar to an in-house consultancy unit in the Executive Yuan (a.k.a executive branch of the government, cabinet office) in Taiwan, having ample opportunities to collaborate with all the 32 ministries, including Ministry of Education, Ministry of Health and Welfare, and Ministry of Transportation, just to name a few. Half of the 20 members were recruited from different levels and divisions in the public sector. The other half were recruited from the civil society, including a stenographer, filmmaker, researcher, writer, activist, graduates serving their 2-year alternative military service, a team of software engineers, and designers (Chang, 2020).

PDIS recruited the first team of designers who helped refine questions the government should constantly think about: How might we refashion democracy and design policies not for, but with the citizens and beyond? This focus on the innovation of democracy is why design practices were introduced and have influenced the three missions mentioned above, which require a robust civil society to support the work; at the same time, the work also reinforces a stronger civil society.

2 Design for Democratic Innovation Through the Practice of PDIS

2.1 Taking All Sides

Co-creation is seen as an essential approach in Service Design under the larger mindset of user-centred design (UCD). Traditionally, co-creation, or co-design, means designing with but not for the 'users'. It can involve all kinds of stakeholders

such as end-users, frontline employees, maintenance, management, etc. Designers often use workshops to facilitate co-creation (Bćkkelie, 2016). This section aims to elaborate on the need to expand the approach to co-creation from the perspective of 'who' we listen to. It means that the stakeholders who co-create don't merely focus on human needs and their perspectives or favour specific groups.

PDIS advocates the idea of 'taking all sides' because it empowers everyone to develop greater empathy and avoid unhelpful confrontations and divides. Developing empathy could provide a foundation for better co-creation by improving the relationships amongst stakeholders who share similar concerns or visions. In the day-to-day practice of advancing democratic innovation in PDIS, we sometimes encounter issues that require us to think and act beyond 'users' or 'humans'. We have worked on issues relating to animal rights, ocean protection and its resources utilization. Take the example of an issue related to 'the religious ritual of sacred pigs weight competitions' in 2019, which raised concerns about animal exploitation such as force-feeding and inhumane slaughter (Tang & Chang, 2021). A wide range of stakeholders such as pig farmers, animal protection groups, the temples that hold such rituals, competent authorities, etc. were involved in a collaborative meeting (i.e., co-creation or co-design workshop, see Fig. 2.2) to share their experiences, concerns, and co-create responses to the issues. They had conflicting interests, but the workshop was designed to ensure they 'take all sides and perspectives' rather than insisting on the specific intervention or responses they would like to make, which could only favor a few stakeholders.

In preparation for the workshop, civil servants who volunteered or were assigned to be the workshop facilitators exercised a small game in which they practiced provoking versus building relationships with others in a very short amount of time. For example, they could say "there was an e-petition about banning weight competitions for sacred pigs" directly to pig farmers' faces and infuriate them. Or they could say "we would like to hear your thoughts as we understand that banning the competitions could result in your livelihoods being affected". They learnt to take a step back and understand the experiences, concerns, and visions of each other which

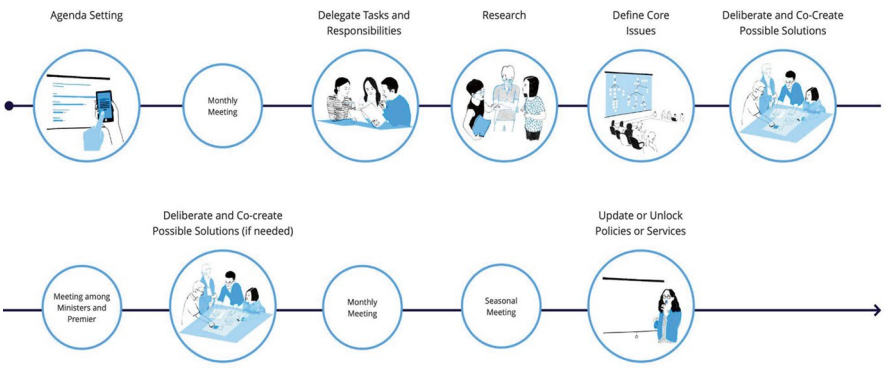

Fig. 2.2 Collaborative meeting process

can often narrow the distance between them and enhance collaboration. It was a way to build muscle memory and capacity to deal with complex issues.

Although stakeholders may not always agree with each other, they were willing to hear diversified voices and co-create with each other to find a rough consensus, meaning that aiming for coherence rather than convergence (coordinated consensus) with the consideration of wider perspectives and context. Therefore, the conversation became stakeholders sharing their concerns (e.g., animal exploitation and cultural loss), difficulties (e.g., impacting the livelihood of pig farmers), and hopes (e.g., animal welfare, cultural conservation, and freedom of religion). They arrived at a rough consensus that is reasonable for all—not banning the ritual through regulation whilst respecting the freedom of religion, caring for cultural conservation, animal welfare, and farmers' livelihood by encouraging creative and diversified forms of the ritual design and encouraging humane pig farming practices. See the project page (https://cm.pdis.nat.gov.tw/58) and another blog post (https://pdis.tw/391W4as) for more details.

2.2 Collaborative Democracy

There is a constant emphasis on the demand for a new culture of problem-solving and decision-making in public organizations. The role of design becomes about how governments operate to handle public problems and build legitimacy (Christiansen, 2016) and an innovation team like PDIS needs to be able to transform the wider institutional capacity of governments to advance democracy.

The focus of this section is to detail the thinking about expanding the approach to co-creation from the perspective of collaboration beyond representation through (a) trusting the people: creating spaces and opportunities for everyone to make positive changes together, and (b) government as bridge: provide the resources needed for everyone to co-create, as ways to cultivate collaborative governance and democracy.

There are variations of democracy such as the representative, aggregative, deliberative, liquid, agonistic, and direct democracy. We need to see co-creation as an integral form of democratic legitimacy amongst other sources such as transparency, accountability, coherence, and justice Lebel et al., 2017). Co-creation is not just about constructing shared perspectives in societies but also about the decentralization and distribution of societal responsibilities and agency—creating a democracy of 'agency' rather than a democracy of 'representation'. Co-creation also embraces conflict—not the type of conflicts that eliminate or oppress others but respect different perspectives and diversity.

One of the challenges often related to representation is legitimacy, especially when we are conducting stakeholder mapping and hosting co-creation workshops. Throughout our practice, we learned that there is a way to respond to challenges

related to the legitimacy of representation and advance a more liquid, fluid, or hybrid democracy through co-creation that embraces shared responsibility and power. It means that people could participate in most of the co-creation workshops, including petitioners, civil servants, politicians, people who know the issues, and people who are impacted or will be impacted by certain decisions online and offline.

Take the example of the E-Mask system (https://mask.pdis.nat.gov.tw), the civic participation and co-creation found in this project was about creating a wider range of E-Mask maps using open data. At the beginning of the Covid-19 pandemic outbreak in early 2020, the provision of face masks was in short supply. It was difficult for people to get masks even after visiting various pharmacies and convenience stores. A civic hacker called Howard Chan Wei Wu from the g0v community decided to solve the problem by coding a map that allows people to see the availability of masks in convenience stores across the entire country. He thought people would be less likely to panic if the information was transparent. The map was coded overnight, from midnight till 8 am on 2nd February. On the same day after the map was shared publicly at 10 am, there were nearly 1000 people online per second using it simultaneously, and it reached 500 k website hits within 6 h. At the same time, the Taiwanese government was planning to launch a mask-rationing plan on 6th February, focusing on distributing masks via pharmacies because convenience stores were gradually reaching their capacity limits. It was impossible to develop a digital platform for the plan in a short period of time, but does the government really need to do everything? PDIS saw the opportunity of working with the civic tech community to develop a new E-Mask app that showed the mask stock information in pharmacies and asked Howard and more civic hackers from the community for help. Luckily, Howard and another 5 civic hackers were willing to volunteer. After getting approval from the premier of the Executive Yuan on 4th February, PDIS started to work as a bridge between the civil society and the government. They ensured that the open API (i.e., application programming interface, which is a set of definitions and protocols for building and integrating application software), open data e.g., pharmacy geographic data, mask distribution data, and mask stock data (https://data.gov.tw/dataset/116285) and its format from the National Health Insurance Administration was in place. The government shared open data on 5th February, and the new E-Mask app was launched on 6th February, which was completed collaboratively in a very short amount of time.

After the government shared open API and open data, people could design and develop all sorts of applications for different needs. It soon became a movement of people putting their skills on the table and contributing to developing useful maps and applications. The engineers could demo how to make an E-mask map website, designers could improve the UX (user experience), understand the needs of different audiences and design for minorities in society. Everyone could share, write about it, spread the story, help senior citizens log on the web, or give feedback to engineers to improve applications. As a result, more than 140 applications were

developed voluntarily by individuals, civic hackers, and private companies. It soon became an E-Mask system covering a wide range of applications for different needs.[1]

The E-Mask system is a great example to illustrate the co-creation based on the common good that is beyond specific classification such as sectoral attachment. It expands the approach to co-creation from the perspective of representation (meaning that expecting elected officials and the government to work 'for' us) to collaborative democracy—people from different backgrounds jumping in and out, sharing responsibilities, and working together for the common good when there is a societal need. This could be seen as part of the wider cultural change.

The underlying condition to make this happen is worth mentioning. The infrastructure needed to seed this design movement (meaning that things that everyone can contribute to making society better beyond people being consulted and have little agency to make changes) is shared open data, information, knowledge, an open-minded government (that is dedicated to trusting the people), and a strong society (that puts public needs before themselves). A more supportive welfare system and a less extractive economic model would also be crucial in ensuring that people have the capacity to engage in public affairs without the constant burden of meeting their basic needs. Looking back, it would never be effective if the sole purpose was about opportunities given by the government. It would only work when civil society is also interested in and willing to collaborate and engage.

2.3 Agency of Stakeholders in Society

This section aims to elaborate on the processes of co-creating public services via open approaches—from setting norms, co-creating with stakeholders across all sectors, facilitating changes people want to see to not forcing people to use a centralized or any particular version of the same service.

Innovation teams like PDIS should work as catalysts for reshaping the processes of co-creating public services and reframing the roles of government to facilitate innovation by acting beyond parochialism, command and control, and fostering more direct interactions among sectors and groups. We need to open up opportunities for citizens and wider stakeholders to explore and set norms regarding what is and is not acceptable in public services, then amplify these norms and implement them in a way that is entirely voluntary. The 1922 SMS contact tracing system (Tang, 2021) is an example of this.

During the Covid-19 pandemic outbreak, surveillance measures were introduced under the guise of safety and prevention, but temporary measures have a nasty habit of outlasting emergencies as there is always a new potential threat lurking on the horizon. Moreover, many short-term emergency measures will become a fixture of life (Harari, 2020). It's crucial to get the contact tracing system right and just in the

[1] For more information see these news articles by Chung-Lan Cheng and Mei-Chen Chiu (2020), E-mask system hackmd (https://g0v.hackmd.io/@kiang/mask-info), and Questions on g0v and Taiwan Covid success hackmd (https://hackmd.io/@GlenWeyl/Hkqvk4dBL)

first place to avoid negative long-term consequences. No one should have to choose between health and privacy. Everyone should have both of them.

During another Covid-19 pandemic outbreak in 2021, it was vital to establish quick and effective contact tracing. The g0v civic tech community proposed a quick QR-code scanning system for a random 'location code'. It didn't require any input (i.e., filling a form) or downloading an app, reducing the interaction time (to less than 5 s) while protecting the citizens' privacy because the location code does not contain any identifiable data. This 1922 SMS contact tracing system was designed to protect personal privacy and text messages will be sent only to telecom operators, shared with Central Epidemic Command Center (CECC), and will be erased after 28 days. People could also check when the CECC accessed their data for retrospective contact tracing, and how much data was stored and deleted via a record inquiry service (https://sms.1922.gov.tw) which showed how the government held themselves accountable.

The project was conducted to trust the citizens and wider stakeholders. Instead of 'delegating' the work, PDIS 'listened to' and 'worked with' diverse stakeholders (the government, telecommunications companies, tech companies, and civic tech communities) and had civil society set the norms. The norms were (a) privacy: no collection of identifiable data (b) transmission: reduce the risk of transmission by reducing the scenario where people need to use pens to fill out forms for the purpose of contact tracing. The government then amplified these norms and implemented them in a way that was entirely voluntary. It means that if people want to use pen and paper or other methods in addition to or replace the SMS based contact tracing system, they are still free to do that. There was no penalty for not using the newly invented system, which was why it didn't foreclose future possibilities of iteration, and it amplified the private sector to adhere to the norm, not because of government mandate, but because citizens had already prototyped the ideas through coding, providing technical specifications, and asked for it.

There is a need to cultivate shared responsibilities among all stakeholders in society. People don't necessarily need to wait for an authority (e.g., the government) to develop the contact tracing system on their own (that people might complain about) because caring for the public is a shared responsibility and developing an effective system of public safety is a common good that can be initiated by anyone from any sector or background in the society. It is equally important to build the norms for co-creation. Technology alone would never be enough, but technology working with norms that encourage innovative participation is powerful.

2.4 Strengthen Civic Literacy and Build Participation Capacity

Civic participation and capacity building are crucial to allow for a larger scale and higher quality version of co-creation. Increased civic literacy and social empathy lead to higher rates of civic engagement and participation. By doing so, it reinforces a stronger civil society. The focus of this section is to detail the approach to move

beyond consumption and complaint (about public services or policies) toward active co-creation and participation through capacity building.

PDIS aims to open channels and opportunities for more people to be engaged in participation and gain experience in civic participation that they could share with their friends. The stages of a participation journey start from awareness, decision, action, and involvement to advocacy (see Fig. 2.3) (Sontag, 2018). Creating a participation experience that people are engaged in and can share is crucially important. For example, a high school student's petition in 2017 (https://tinyurl.com/4ayn2v9f) was deliberated and influenced the policy to ban plastic straws in Taiwan; a civil servant's complaint got listened to, resulting in real daily workload reduction.

PDIS would like to facilitate a future where consumers and ill-advised participants can become makers. Many co-creation workshops have shown that people are willing to contribute and improve things if there are spaces to learn, share and hear people's experiences and concerns. There is a need to see co-creation workshops as ways to empower people and facilitate decentralized capacity building and organizing which can establish a stronger foundation for the people in society to have more agency to make positive changes through democratic processes. The government should not be afraid of the people being 'smarter' or 'powerful' (as in balancing power dynamics through shared responsibility) but quite the opposite because it is one of the ways to make a just society.

Participation can go from lightweight to high-level involvement, depending on the time and effort needed in the participation. With the advancement of technology, high-level engagement participation (such as a petition) could be as lightweight as submitting a webform, or attending expert meetings, which could be done online. The path from voting and protesting to running elections is not the way of thinking in this new era whereby a business can participate in a Sandbox program for cryptocurrency. Therefore, what really draws the axis for the Participation Scale is not the level of time and effort it takes, but rather the level of agency it takes as the co-responsibility sharer. It is because we envision a world where all people can be policy creators and public asset makers. We highly value shaping and creating together among all stakeholders.

PDIS sees the Participation Scale (see Fig. 2.4) (Heimans & Timms, 2018) as a process or guidance to understand different types of behaviour rather than a ladder to climb. One can participate directly in shaping policies, making government websites together with civil servants, and contributing their skill sets to make the public asset better. Such openness is the essence of collaborative democracy. Each stage in

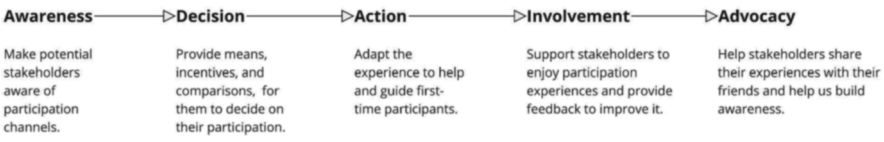

Fig. 2.3 Engagement model. (Adapted from Sontag, 2018 and AIDA model, 2021)

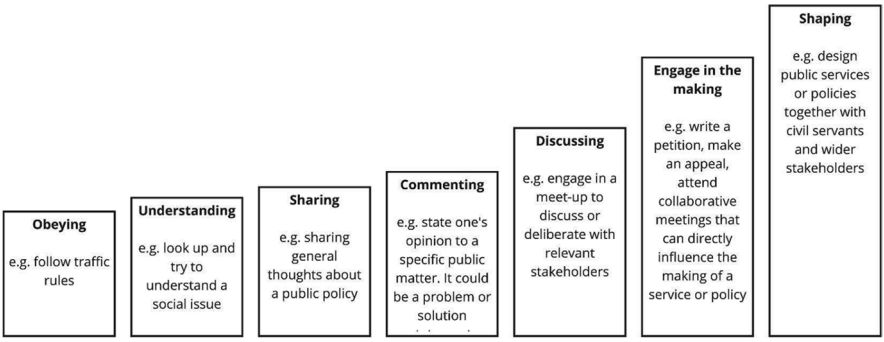

Fig. 2.4 Participation scale. (Adopted from Heimans & Timms, 2018)

the Participation Scale is a potential opportunity to design ways to engage people and build capacity—the capacity to be empowered with agency and to create with autonomy. Capacity building is more than a one-off event. With more experience, moving from consuming to making would be more natural.

PDIS opens up multiple channels along the Participation Scale, such as hosting collaborative meetings (What's a collaborative meeting?, 2018) and inviting stakeholders, publishing all meeting notes, workshop recordings, and policy track records for people to browse and understand the making and decision-making processes behind each policy or service.

Among the approaches of involving more people to co-create policies and services on a regular basis, PDIS also hosts internship programs for undergraduate and graduate students to re-design government digital services with civil servants. We call this program RAY, standing for Rescue Action by Youth. The program aims to provide an opportunity for the younger generation to experience how the government and the creation of public services work, as well as to build their capacity to make positive changes in the real world.

Every summer, PDIS recruits students, mostly with design, computer science, or public policy backgrounds, to collaborate with governmental departments on redesigning some of their websites. PDIS has also been working with the Youth Development Administration of the Department of Education, offering around 30 internship spaces for students in their college or graduate studies to participate in a two-month long summer program. The process usually includes six steps, from understanding the users, defining key issues, wireframing, low-fidelity prototyping, and high-fidelity prototyping to demonstrations. The students are gathered into several groups, together with other young people, and connected with a specific department to work closely on the redesigns. This resulted in redesigns of the Taiwan Jobs site from the Ministry of Labor (https://www.figma.com/proto/hZlc8pnOdijzOY-HOKKi568/), Keelung city government's public website (https://tinyurl.com/yjn-j2e7k), and the official website of the Youth Development Administration of the Department of Education (https://tinyurl.com/yckp4e52), just to name a few.

2.5 *Discover, Define, Develop, ~~Deliver~~ Unlock!*

The aim of this section is to elaborate on the processes after a service or policy is ready to be launched and the possibilities to see that as a starting point of wider co-creation and participation. This upgraded 'Double Diamond' based on the preliminary and updated versions (Drew et al., 2021a) differs from the waterfall methodology as the planning phase ends on the kick-off day for execution. PDIS aims to shift the mindset from working to 'deliver' to working to 'unlock' (see Fig. 2.5). PDIS modified the last step to 'unlock', instead of 'deliver' as we think beyond delivery and transits the 'Launch equals to Complete' notion to "Listen, build, test, and repeat! (CIID Homepage, 2021)" iterations, allowing space to receive feedback continuously. Through open data and open co-creation, service delivery is no longer an end or closed iteration, but an opportunity for wider citizens to participate, contribute, and own services.

In the case of the 'One-stop Integrated Mountaineering Service', delivery was just the beginning. There are more than 200 distinct peaks over 3000 meters in height in Taiwan. For most of them, hikers would need to apply for an entry permit and be approved before starting. The application services were scattered across multiple pages, and the paperwork was designed independently by different administrations, making it a laborious process for hikers. In early August 2019, the Ministry of the Interior, the government body of Mountaineering in Taiwan, proposed at the Open Government Liaisons Monthly Meeting. The case was brought to PDIS for collaboration for a better hiking permit application experience.

Relevant stakeholders were invited to participate in a collaborative meeting, and a digital survey tool called Pol.is was used to gather wider opinions from the general public who are interested in the topic (see Fig. 2.6). PDIS took these opinions (shown as 'statements' on the platform) and ran through the design process with student interns recruited from RAY, working together with multiple rounds of design and testing before launching the One-stop Integrated Mountaineering

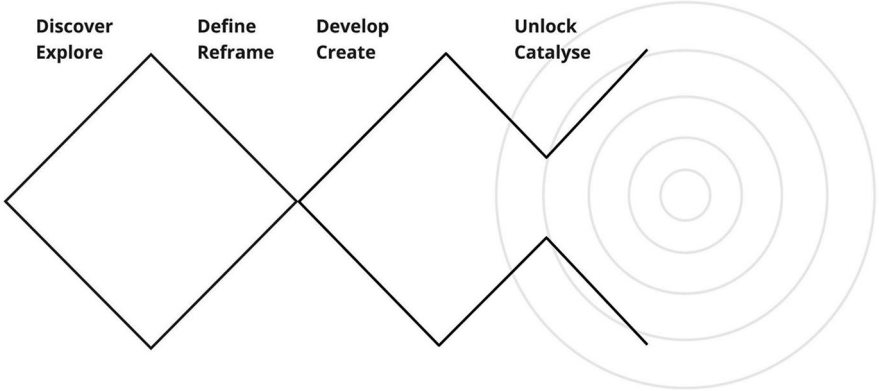

Fig. 2.5 Double diamond inspired process

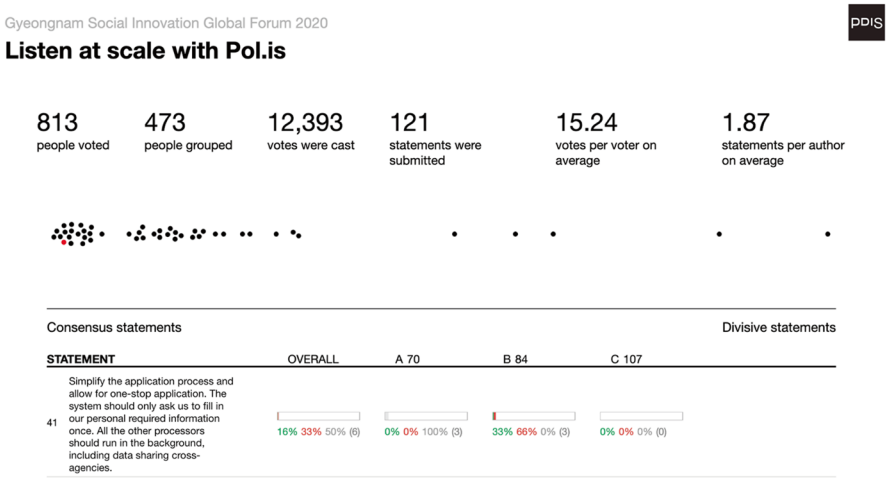

Fig. 2.6 Listening at scale with Pol.is. A month-long Pol.is digital dialogue was hosted, receiving 12,393 votes, and 121 views by a total of 813 people, making their opinions on digital platform transformation

Service. Moreover, the key to really unlocking this process is to carefully design the implementation with future maintenance in mind. IT companies are often commissioned by the government to deliver public services. We would need to plan carefully for future system makers, maximize their access to data, and minimize the communication required to current system makers. An agreed API style is then needed to ease data transfer from one server to another. That's why it's important to require an architectural style shared among API creators to allow system creators to evolve changes independently (i.e., Open API using RESTful API). This consideration enables more flexibility in maintenance going forward. To make that happen, we commissioned the original IT system maker to build API and another new API maker to build connectors (see Fig. 2.7).

This seeded the future opportunities for everyone to fork the government. Forking means taking the source code from an open-source software program and developing a new program. And forking the government means taking government digital services and developing different directions by the people closest to pain and suffering. The role of the government is to amplify their development. The act of the government opening the space for forking and unlocking the opportunity for wider co-creation and participation established a foundation for services to continue to be iterated more democratically in comparison to closed interaction among government service design teams or commissioners. In the mountaineering case, the results created opportunities that allowed anyone to opt-in and remake the system and allowed a wider range of public services to be developed collaboratively, such as rescue systems and navigation systems. This approach empowers the agency of the wider public to make positive changes in society.

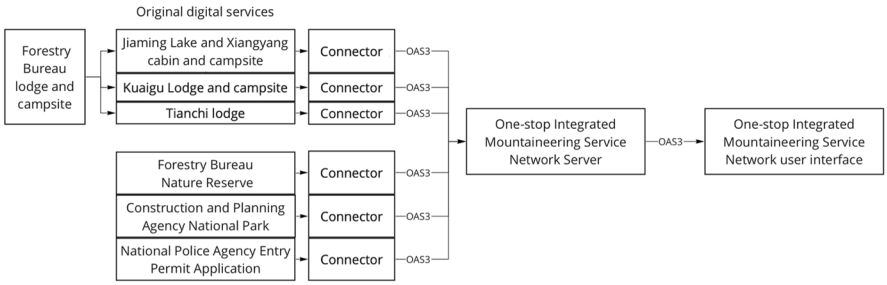

Fig. 2.7 Implementing Open API in One-stop Integrated Mountaineering Service Network Server. The Microservice (2021) architecture was adapted to the planning of the systems, decoupling the one-stop system to multiple fine-grained services with lightweight protocols. This architecture makes the system easy to test, scale, and reuse for other integrations

2.6 Institutionalization

Design or innovation in government sometimes cannot sustain itself over a period if there is a political shift. Institutionalization, in this case, becomes a crucial instrument for ensuring innovation that can be persistent in the ever-changing political context. This section aims to elaborate on the approach to sustaining innovation beyond one-off and discrete responses.

In the case of the Participation Officers Network (https://po.pdis.tw/en) which is part of the Open Government mission in Taiwan, such administrative rules as 'Directions for Implementing the Role of Participation Officers in the Executive Yuan and Subordinate Agencies' (2021), were introduced to institutionalize the mechanisms encompassing the rationale, administrative setup, capacities needed, approaches, principles, and incentives of the Open Government mission.

Participation Officers (PO) are representatives of all ministries who are dedicated to supporting the Open Government mission in Taiwan. Each ministry appoints at least one person, and some ministries have a dedicated PO team. Most of them came from backgrounds in either public relations, comprehensive regulations, examination management, or information. They are passionate about public facilitation, communication, digital tools, and are familiar with policymaking. The network of PO was established with the support of the Executive Yuan and PDIS in 2017. They work closely with each other and across the government and sectors aiming to improve transparency, accountability, inclusiveness, and wider participation in pressing social issues, and government policies and services for more democratic and participatory governance from the inside (better collaboration across the government) to outside the government (better collaboration with the wider society).

The Participation Officers Network has conducted more than 90 collaborative meetings (co-creation workshops) to date. Case studies mentioned in Sects. 2.1 and 2.5 were examples of their achievements. Since establishing the Participation Officers Network, the PDIS team has been deploying various design and deliberative methods and approaches to tackle the co-creation of public policies and

services with wider stakeholders. For example, conducting stakeholder interviews and field trips, research, journey maps, service blueprints; framing 'how might we' questions; hosting collaborative meetings and prototyping, etc. A regular procedure has also been formed, such as monthly meetings among POs and the PDIS team (to discuss the topics of future collaborative meetings) and seasonal meetings with the CTO from each ministry added (to run retrospective meetings, reflect and celebrate achievements).

Throughout the experiences, they integrated the processes and procedures, and the government drafted and enacted the administrative rules at the end of the same year since the establishment of The PO Network. It means that the rules were not written as a request or vision for the Open Government mission, but principles that were tested based on the real practice of a 1-year co-creation.

The enactment of the administrative rules means that the PO network and all the co-creation mechanisms created would stay even if there is a political shift so that the democratic innovation could continue. Administrative rules must couple with open tools and culture, such as collaborative notes and transparent records that transcribe meetings and co-creation processes to ensure the innovation continues.

3 Limitations and Prospects of Service Design Approaches in the Context of Democratic Innovation

3.1 Beyond Service Design: Evolving for Just and Sustainable Futures

In many countries such as Denmark, the United Kingdom, and the United States, design has already been applied in a wide range of public sector settings (Bason, 2013). Design has also been rapidly growing in Taiwan in recent years. With more and more talent graduating from design schools, more professionals are practicing design in a large spectrum of industries such as finance, healthcare, transportation, and more. This discipline has gradually gained acknowledgment from a diverse employment audience, including public sectors.

The field of Service Design is expanding, and the diversity in where service designers apply their skills is increasing. The challenges we face are becoming more complex—pandemics, climate change, growing inequality, political polarization, just to name a few—and conventional ways of problem solving do not work anymore. In the realm of Public Service Design, there is a need to evolve the practice to transition to a more regenerative, democratic, and just society.

Designers should have more awareness and the responsibility to address deep structural issues. Design should not be a tool to facilitate capitalism that deepens social injustice—creating merely more profit for businesses through Service Design and UX/UI improvement. We would like to emphasize the focus on public interest and public value in design and how we move forward. It is about what society really needs and how design can respond to them.

It is not that rare to see designers working with the government in Taiwan. In 2016, when Audrey Tang was appointed as a digital minister, the office also recruited a team of designers who helped refine the questions that the government should constantly think about, which are: how might we advance democracy and design policies 'with' the citizens rather than 'for' the citizens with the rapid development of technology? This focus on the re-innovation of democracy, which is crucial for Taiwan to transition from a reactive role to a more proactive position in the global ecosystem, is the core of Service Design in Taiwan. Aiming to not only 'build the right thing' but also 'build things in the right way'. We see a clear trend in how design can be helpful in the realm of Public Service Design and democracy, as mentioned in sections one to section three.

Some fields or approaches such as Systems Thinking (Meadows, 2008), Systemic Design (Jones & Van Ael, 2022), Transition Design (Irwin, 2018), Social Imagination (Canopy, 2021), and Decentralized Organizing (Bartlett, 2018) just to name a few have become ever more relevant, which are key to address the limitation of conventional design practice and advance Public Service Design. Take the example of Systems Mapping; see examples 1—Fishery Causal Loop Diagram (Hsueh, 2011) and 2—Breaking the Silos Through Participatory Systems Mapping (Kang et al., 2021). It is a powerful tool for organizing and visualizing interconnected factors and can help leverage intervention points beyond siloed and narrowed views (i.e., what designers are told to deal with often based on presumptions and public pressure).

Other emerging design practices could help advance the idea of 'taking all sides' (see Sect. 2.1), consider longer-term consequences and the cumulative impacts beyond individuals, and move away from anthropocentric views and approaches that may do harm to the wider systems. They are Relational Design, Counterbalance Design, Collective Awareness Design, Ecosystem Design, Consequence Design, Worker-centred Design, Beyond-Human Design, Life-centred Design, and Planetary Scale Design (Robinson, 2018).

Furthermore, the importance of embracing greater plurality in the worldview and practice of design beyond its current Western and anthropocentric starting point has been further emphasized by the UK Design Council (Drew et al., 2021b): "There is also a transnational critical design field that questions and challenges the dominant white, Western and anthropocentric position in design. Those in the field argue for indigenous and ecological design and the systemic power shift it both requires and creates" (p.9).

3.2 Language: For an Inclusive and More-than-Human Democratic Society

Different languages were often used in design to articulate types of people such as stakeholders, actors, users, players, audiences, citizens, actants (Latour, 2017), and agents. Take 'agents' as an example; the term could more proactively imply both

living and inanimate things, just like the term 'actants'. If we are able to use the term as an alternative to 'citizens', a more inclusive setting or worldview (e.g., not bound or limited to statehood, individualism, or anthropocentrism) could be established naturally to ensure equity and inclusivity. While they sometimes are used interchangeably, how we use language imperceptibly influences how we engage with each other, our relationships, and power dynamics. Searching for inspirational forms of language can help build a better world.

A stakeholder is a person, group, organization, or aspect with a particular interest in or a relationship to a specific topic or business (Cramer, 2019). The term is widely used in Service Design and can cover most scenarios when there is a need to identify participants for co-creation sessions. However, from the perspective of a more-than-human centered approach, languages like actants or agents would hint towards more around non-humans such as rivers, animals, parks, etc. This nuance may seem negligible, but it could determine who and what is implicitly or explicitly included or not.

In Public Service Design, the term 'citizens' is commonly used. However, there is a risk of excluding people and non-humans because not everyone is a citizen (e.g., some underrepresented groups, migrants, parks, rivers, and future generations). Their views and voices may not be heard or considered if we are not aware of the language we use.

Transitioning to a more inclusive society, according to Radicle Civics (Chang & Johar, 2022), we can learn from Indigenous wisdom, alongside the rights-of-nature movement (Burgers, & den Outer, 2021), that often grants great stature to nature (such as rivers, mountains, animals) or future generations, and finds ways to speak on their behalf. In his theory of the Parliament of Things, Bruno Latour (1993) argues that we need to give rights to non-humans and quasi-objects and enable their democratic participation; Christopher D. Stone (2010) argues that we should recognize the rights of nature. We could also harness emerging technological capacity for monitoring and representing non-human or future-human voices through a mixture of data and sensors held in civic data trusts.

3.3 Power Dynamics: Creating Bridges and Conditions for Balanced Relationships

In Public Service Design, design can sometimes be used without realizing the broader power dynamics. Latest studies suggest that we can observe that many paid, expert designers, have privileged positions that can render other situated perspectives and viewpoints invisible. A privileged view will also likely inform beliefs, assumptions, and norms that shape many design decisions made throughout design projects. Suppose designers become more aware of and sensitive to how privilege and oppression (including their own) function in the contexts they are designing. In that case, they can make decisions to challenge status quo inequities and patterns of

oppression produced in the service or system. Such awareness may lead designers to create an equitable playing field in their practice (Goodwill et al., 2021). Politicians, civil servants, and service designers, who are responsible for designing the structure of co-creation meetings or workshops, are the people who set agendas according to the practice of PDIS. They are often the people who decide what is to be considered or done, stakeholders to reach out to, matters to be acted upon, and the design of co-creation processes. In this case, they could hold too much agenda-setting power, and design could be used without realizing the broader power dynamics. This is particularly dangerous and can perpetuate systemic injustice.

It is very common to have clients and commissioners in general design practice. However, in Public Service Design, it is crucial to avoid seeing government departments, civil servants, politicians, or citizens as 'clients' but as co-creators to improve relationships and power balances.

To ensure balances in power, firstly, citizens, underrepresented groups, and wider stakeholders need to be empowered to express their opinions and visions in co-creation. Secondly, they need to be explicit and transparent about who has the influence. Thirdly, minimize power-over and be sensitive to coercion—one person cannot force another to do something (Bartlett, 2020). Last, there is a need to design 'with' them, not 'for' them, and create space for decentralized or distributed mass co-creation and collective imagination.

We could learn from ants to create a balanced power dynamic for co-creation. Stigmergy is indirect communication in which individuals communicate with one another by modifying their local environment. It was first observed in social insects such as ants. They adapt their responses or start new activities without centralized command and control. If one insect reinforces a pheromone trail or deposits an object, other insects can perceive the modified environment, adapt their responses, or start new activities. In that way, they collectively develop a complex network of trails, efficiently connecting the nest to locate food. What if all co-creations and social imagination could become stigmergic?

We consider that service designers need to be even more conscious about power dynamics and should act as bridges. We can create the condition for power balances and a healthier relationship for a just co-creation among all by being open about the design processes, including:

- Being invitational to wider society;
- Making sure there are open spaces for them to set an agenda and design processes, exercising ongoing reflections;
- Allowing people to challenge and change structures;
- Leaving space for people to make sense of the information they absorb;
- Leaving them time to react, provide open data, produce editable open documentation and frameworks, and participate in chat rooms.

This is an opportunity we see to improve design practice by opening up the discussion to rearrange relationships between diverse stakeholders.

4 Conclusion

Public Service Design, in our case in Taiwan, based on the practice at PDIS, is about open democratic innovation with co-creation and civic participation at its core. This means shifting from reliance on representation towards shared responsibility, true agency and autonomy whilst ensuring citizens, underrepresented groups, and wider stakeholders are empowered to express their opinions and visions in co-creation and participation. We need to avoid coercion, design 'with' them, not 'for' them and create space for decentralized or distributed mass co-creation and collective imagination. It is crucial to seed democratic futures in ways that make the society stronger because stronger societies make all our work related to Open Government, Social Innovation, and Youth Empowerment possible, not the other way around.

Our design strategies and approaches for democratic innovation spread across six areas: (a) Taking all sides; (b) Collaborative democracy; (c) Agency of stakeholders in society; (d) Strengthen civic literacy and building participation capacity; (e) Discover, Define, Develop, Unlock; and (f) Institutionalization. However, there is no one-size-fits-all strategy, methods, and tools. It depends on the ever-changing context, and we need to be able to respond to changes accordingly. We hope to see more dedication to Public Service Design, especially applying its approaches to democratic innovation in achieving a more democratic, sustainable, just, and equitable world.

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Chapter 3
A Critical Review on the Citizen Participatory Design Group (CPDG, *Kukmintichaintan*) in South Korea: Impacts and Limitations

Yoori Koo

Abstract In South Korea, service design is spreading in solving social problems and establishing citizen-led policies as an effective means for engaging the public (the consumers) in a policy-making process. This chapter reflects on the ways in which service design is being used by government in South Korea through "Citizen Participatory Design Group (CPDG)" project promoted by the Ministry of the Interior and Safety (MOIS) in collaboration with the Korea Institute of Design Promotion (KIPD) since 2014. The purpose of this study is to examine the use of service design in the public service sector, focusing on projects under the CPDG. This study analyzes the maturity of service design for the public policy and service sectors using a time series analysis on CPDG cases. The analysis revealed the current status of CPDG's application of service design thinking, method/tools, and their derived outcomes according to themes of user-centeredness, co-creation, holistic view, and solution materialization. Furthermore, this study suggests the value and challenges of the CPDG as a human-centered and participatory policy establishment model based on service design.

Keywords Policy design · Service design · Citizen participatory design group (CPDG) · Service design principles and tools · Co-creation

1 Introduction

The realities of modern society have introduced a more complex range of social issues with diverse societal structures and functions. In Korean society, various social challenges, including polarization, aging, and environmental pollution, have

Y. Koo (✉)
Division of Service Design, Graduate School of Industrial Arts, Hongik University, Seoul, South Korea
e-mail: yrkoo@hongik.ac.kr

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emerged due to the country's rapid and advanced industrial revolution and economic development.

If design is defined as an activity that uses creativity to solve problems, when applied to physical artifacts, it falls within the realm of traditional design. On the other hand, if it is extended to the relationship, experience, and system level, it is related to service design. In this regard, service design is an emerging developmental strategy to solve such diversified social issues.

Major developed countries have increasingly utilized human-centered participatory service design thinking for social issues related to life satisfaction and social needs such as safety, welfare, education, healthcare, environment, and energy. This development is recognized as an effort to find new problem-solving possibilities from a human-centered design process as conventional problem-solving methods can no longer serve as an effective means for addressing the social issues of the present times (Koo, 2016).

However, discussions on the role of design for social issues have been relatively inactive in Korea. Korea's design policies have only been a means for promoting the national industry's competitiveness, while its social issues have mainly been dealt with at the level of public policy, separated from design issues.

Nevertheless, the recent increase in public participation to solve social problems has led to various projects in the private and public sectors. In this process, the field of public service design, which provides citizen participatory design methods, began to attract attention. The Ministry of the Interior and Safety (MOIS) recognized the value of service design and has launched the Citizen Participatory Design Group (CPDG) project in collaboration with the Korea Institute of Design Promotion (KIPD) in 2014.

The CPDG uses service design as a strategic methodology for establishing policies through citizen participation. Service design methods are broadly trialed in areas such as social safety, healthcare, welfare, regional problems, and the environment. The CPDG engages in social challenges previously unsolvable within the scopes of norms, logic, and technology and presents solutions to these issues through human-centered observations and approaches.

The purpose of this study is to examine the current status of service design used in the public service sector, analyzing various projects of CPDG. Service design actively engages users and stakeholders as co-hosts of social innovation to identify their potential latent needs. It proposes a practical innovation method through a paradigm shift to user-centered thinking. This study analyzes the maturity of service design in the public policy[1] and service sectors using a time series analysis on CPDG cases. Furthermore, this study suggests the value, utility, and future development needs of the CPDG as a human-centered and participatory policy establishment model based on service design.

[1] The subject tackled by CPDG pertains to 'policy' delivered to 'policy consumers' in the form of 'public service.' This is introduced as a case of service design based on the consumer-led 'policy design' process. Therefore, in this chapter, the subjects and outcomes explored by CPDG are denoted by the term "policy" in a broad sense.

2 Citizen Participatory Design Group

2.1 What Is Citizen Participatory Design Group (CPDG)?

The MOIS operates the CPDG in cooperation with the Ministry of Trade, Industry, and Energy and the KIDP. The CPDG is a policy working group that develops or improves public services using the service design methodology. Public officials (those who provide public services), citizens (policy consumers who use those services), experts, and service designers participate in the overall policy process, which includes agenda-setting and policymaking, execution, and feedback.

The CPDG aims to design user-centered services as a citizen-participatory public service design model, where policy users and suppliers participate together and identify problems, derive solutions, and test them (MOIS & KIDP, 2020a, b). The CPDG manual (MOIS & KIDP, 2020a) states that the public, public officials, and experts will have equal opportunities to participate to derive solutions from multiple perspectives. Accordingly, a CPDG team consists of service designers, public officials, policy users, and experts. A service designer provides knowledge and skills on service design, encourages horizontal participation among team members, and coordinates diverse opinions. Public officials support the service designer's team operation. The public participates directly in the co-creation process that uncovers the challenges and needs for public services and proposes ideas. Experts provide opinions and technical knowledge on a related subject.

According to the CPDG manual, the CPDG operates based on the service design process as a five-stage model: (i) *understanding the process,* (ii) *discovering public needs,* (iii) *defining real problems,* (iv) *developing ideas,* and (v) *delivering implementation strategies* (see Fig. 3.1). In the first stage, the public is involved in choosing a topic and establishing research goals and plans. In stage 2, they discover key problems and needs of target users and other stakeholders. In stage 3, the public has the right to participate in policy development direction and to prioritize issues and needs. In stage 4, key questions for concept development are generated and ideas for public services are directly derived. In stage 5, the participants experience the service prototypes and provide feedback for further improvement.

Face-to-face meetings are conducted between team members, where service designers facilitate participatory workshops and develop necessary toolkits and worksheets for identifying citizens' in-depth needs based on empathic understanding (see Fig. 3.2).

2.2 The Evolution of the CPDG in Three Stages

The CPDG launched 31 pilot projects in 2014 and greatly expanded its scope in 2015 to include ministries and local governments, with a total of 1500 policy users, designers, and experts participating in 248 projects (accounting for ten times the

Fig. 3.1 The operation model of the CPDG: the model explains the overall goals, major activities, roles and precautions for each member

Fig. 3.2 Design thinking workshop during the CPDG inauguration ceremony. Image game played as a warm-up to relieve the rigid atmosphere

number of projects conducted in 2014). To induce autonomous operation of the CPDG by local governments, the central government-led fostering tasks were no longer promoted since 2020 (Table 3.1).

Table 3.1 Status of CPDG projects in 2014–2020 (CPDG website)

Category	2014	2015	2016	2017	2018	2019	2020	Total
Total	31	248	382	273	152	157	120	1358
Central administrative agency	19	42	44	39	51	67	–	262
Local government	12	206	338	234	178	128	120	1096

This study first examined the CPDG manual to analyze the citizen-centered process and methods based on the CPDG's use of service design. Subsequently, 144 projects awarded CPDG Excellent Projects in the National Design Performance Competition from 2014–2020 were examined and categorized into three stages based on the maturity of service design utilization. A time-series analysis was used to derive implications for better utilizing service design for public policies. It was divided into three stages based on the maturity level of service design utilization.

The stages include the introductory stage (2014–2016), where the service design process was initiated as a citizen-led policy-making model; the developmental stage (2017–2019), where the *public service design* concept was officially implemented by revising, promulgating, and executing the *Enforcement Decree of the Administrative Procedure Act*[2]; and the maturity stage (from 2020 onwards), where local governments began to operate the CPDG autonomously based on manuals exclusively from central administrative agencies. Based on the analysis, this study reflects on the current status of the CPDG's use of service design, in terms of the use of methods, the project operation process, and the derived outcomes, and examines the shifts and evolution to date. Ultimately, this study aimed to diagnose possibilities of further shifts to the public service delivery system through service design.

3 Research Methods

3.1 Analysis Criteria

When it comes to the analysis of the CPDG projects, there was a lack of discussion on the criteria for analyzing the public service design process and results. Therefore, this study developed a set of analysis criteria based on the review of several core principles of service design thinking and service design methodology suggested by scholars, including user-centeredness (Brown & Wyatt, 2010; Sangiorgi et al., 2015), co-creative processes (Steen et al., 2011; Manzini, 2014), the focus on a sequence of actions and evidencing the interactions throughout the process (Wetter-Edman et al., 2014), visualizing intangible services (Sangiorgi et al., 2015), and a holistic view (Stickdorn et al., 2011). Based on these discussions, this study highlights four key principles of service design in the context of public services and policies.

[2] https://www.korea.kr/news/policyNewsView.do?newsId=148832133

- First, a user-centered service design approach should be able to improve government responsiveness by understanding public service needs and experiences from citizens' perspectives (Meroni and Sangiorgi, 2016).
- Second, service design should be able to enhance participation effectiveness by involving citizens as co-creative partners at all stages of the public service delivery.
- Third, a holistic approach to service design should be able to adequately respond to the high complexity faced by the public sector by eliciting problems across various policy user touchpoints and providing comprehensive solutions that integrate various methods, tools, and languages.
- Fourth, service design should be able to materialize unseen problems and policy solutions through tangible and intangible solutions to deliver more specific value to the policy user and increase policy effectiveness via prompt feedback (Wetter-Edman et al., 2014; Sangiorgi et al., 2015).

This study aims to analyze the CPDG cases based on these four principles.

3.2 Data

To analyze the maturity level of service design use and its outcomes, this study utilized the datasets of the published document of the *CPDG Manual* (2018–2020) and the *CPDG Performance Reports* from 2014 to 2020. The performance reports were prepared by the corresponding managing department. These resources reflect the activities and outcomes from each project and serve as a brief reference for future project planning.

First, the criteria of the seven major policy development areas defined by the MOIS from 2015 were used for the analysis of the project topic areas. These areas include industrial support, social welfare, safety/living/convenience, culture/tourism, children/education, local environment improvement, and village community (see Table 3.2).

Next, the frequency of service design methods/techniques mainly used in the CPDG process was examined. These methods are used as step-by-step tools for empathizing, communicating, insights, and collaborating according to the stages of the service design process. All existing methods can be used for analysis and visualization and can be modified and used in various forms depending on the context. In this study, the frequency of the methods used for each project was analyzed based on the service design process outlined in the manual. Accordingly, user-centeredness, co-creation with various stakeholders, and a holistic view approach were investigated, and the trends of service design methodology use were analyzed by stages (Table 3.3).

Finally, to analyze the CPDG's public service design outcomes, the service design deliverable types and management purpose were classified into seven categories: (i) branding and promotion; (ii) information design; (iii) product and kit

Table 3.2 MOIS seven areas by CPDG projects. (MOIS & KIDP, 2020b)

Area	Description
Industrial support	Projects and policies that stimulate companies' goods or services production activity
Social welfare	Projects and policies that improve living services and assist socially vulnerable groups such as the elderly, the disabled, and women
Safety/living/convenience	Projects and policies that improve the accessibility and effectiveness of services
Culture/tourism	Projects and policies that contribute to promoting various tourism services by expanding or utilizing the culture of Korea or individual regions
Children/education	Projects and policies that improve the effectiveness of educational systems for child policy users or for delivering specific information
Local environment improvement	Projects and policies that create residential conditions and pleasant environments for residents
Village community	Projects and policies that promote community activity in villages

design; (iv) digital-based content; (v) space and environment design; vi) building governance; and vii) core R&D solutions. All forms of the deliverables were reviewed multiple times as public service design aims to seek an integrated solution to a problem.

Therefore, this study examines the projects with the following aspects that would indicate trends and maturity of public service design projects over the history of CPDG: (i) the main subject areas that the public service design process was applied to; (ii) the service design tools and methods being utilized for user-centered philosophy, co-creation with stakeholders, holistic approach, and solution materialization; and (iii) how the public service design outcomes are delivered and disseminated.

In addition, to probe into specific obstacles and development needs for project operation from the service designers' perspectives, focus group interviews with 12 service designers and in-depth interviews with 7 service designers and 2 participating public officials were conducted (Table 3.4).

4 Results: Scopes and Contributions of Service Design in CPDG Excellence Projects

Table 3.5 shows the analyzed frequencies of subject areas by project, service design methods used, and types of derived solutions by introductory, developmental, and maturity stages. The following time-sequential changes in the CPDG operation were identified through the analysis of the CPDG projects by stage.

First, social welfare and safety/living/convenience were continuously discussed topic areas throughout the introductory, developmental, and maturity stages; however, more diverse patterns were observed during the transition from the developmental to maturity stages such as improving existing public services and exploring

Table 3.3 CPDG service design methods/techniques. (MOIS & KIDP, 2020a)

Methodology	Description
Shadowing	Observing like a shadow: a method to observe the subject's behavior and experience, capture the moment of occurrence, and derive solutions
In-depth interview	A Q&A interview-type method to understand the subjects' needs for the projects
Service safari	Experiencing the service in person: a method to discover problems from the user's perspective through hands-on service experience
Stakeholders' map	A method to define the relationships between different people and groups related to the targeted problems. Identifies the hidden stakeholders and their relationships
Affinity diagram	Post-it grouping: a method that involves narrowing down words or sentences from desk research, shadowing, and in-depth interviews to superordinate concepts by writing them down on post-its and grouping them
Persona	Creating virtual people: a method to derive representative users with common traits among various user information
Customer journey map	A method to visualize policy users' experiences and feelings according to their daily flow of time and space
Idea workshop	Brainwriting: a method to motivate the participation of those who are shy about expressing opinions and allow everyone to share ideas
Idea sketch	A method to list ideas by groups and visualize the final ideas
Scenario	A method to easily describe the selected ideas, for example, as a movie, novel, or scenario
Storyboard	Visualizing ideas with pictures: a method to visually represent and deliver the final delivery service using images such as sketches or photographs based on scenarios
Prototype	Producing prototypes with key functions: a method that allows users to gain hands-on experience of the services where researchers observe user responses and review the services

completely new alternatives to respond to new social issues. The central ministries fostering projects in the introductory period were mainly focused on improving existing public services. Contrarily, excellence projects were conducted in the developmental stage to improve existing public services or develop new services in response to the changing environment. Changing environment denotes global environmental changes, such as technological advancement and aging, and also the emergence of social issues that the government was previously not responsible for.

Second, tools and methods according to service design processes were increasingly used as the stages progressed. Examining user-centered approaches focusing on the utilization of service design methods in excellence projects confirmed that the greater part of cases actively introduced and utilized user-centered contextual and field-participatory research methods such as in-depth interviews, shadowing, and service safari (see Table 3.5). In particular, efforts to discover policy users' indefinable or in-depth needs increased, reflecting their diversified characteristics as they entered the maturity stage. In addition, actual observations of users showed a radical increase in the utilization of persona—based on a qualitative approach to empathize with users—as users entered the developmental stage. Public service

Table 3.4 The participants who were involved in FGI and in-depth interviews

Method	Type	Number of people	Number of CPDG participation	Prior expertise (Career period/ position)
FGI	Service designer	12	All 2017 CPDG project participant	Service design (More than 5 years)
In-depth interview	Service designer	7	4	Service design (10 years)
			1	Environmental design (10 years)
			1	Environmental design (10 years)
			1	Marketing consulting (17 years)
			2	Marketing consulting (23 years)
			1	Brand Consulting (9 years)
			1	Design consulting (5 years)
	Public officer	2	1	Crime prevention (chief inspector)

target groups were more clearly established compared to the introductory stage, and distinct efforts to understand their experiences and emotions in greater detail were observed. In particular, the projects aimed at improving less effective official-led public service designs through user-centered projects as projects increasingly involved socially vulnerable groups such as children, the elderly, the disabled, and North Korean defectors. Such cases suggest that the use of service design thinking in the public sector can ultimately change the way traditional top-down administrative methods.

Third, the diversity of interactions among all stakeholders including key customers was found to be an important factor in CPDG activities. This primarily concerns the direct inclusion of potential customers and stakeholders; thus, appropriate stakeholder structures should be considered through, for example, stakeholder maps. Interactions can also be achieved by co-creation among stakeholders. An analysis of the service design methods of excellence projects showed that more than half of the projects in the maturity stage hosted an idea workshop (see Table 3.5) to derive policy ideas and used collaborative and creative co-design tools to solve problems. In this regards, well-designed co-creative workshops allowed CPDGs with relatively heterogeneous customers and stakeholders to share various opinions on policy issues and alternatives, from which new ideas were discovered and new solutions were explored. It is also noted that some award-winning projects actively included the key stakeholders in the policy design process by developing ideation toolkits and co-design methods; thus, they were able to derive policy solutions for vulnerable populations who may be neglected in the existing public policy development and implementation process.

Table 3.5 CPDG excellence projects analysis results, 2014–2020

Category			Introductory (2014–2016)	Developmental (2017–2019)	Maturity (2020~)
Seven areas by project	Industrial support		3(6%)	6(9%)	–
	Social welfare		4(8%)	18(26%)	5(22%)
	Safety/living/convenience		17(33%)	16(23%)	7(30%)
	Culture/tourism		12(24%)	2(3%)	4(17%)
	Children/education		5(10%)	6(9%)	3(13%)
	Local environment improvement		4(8%)	5(7%)	2(9%)
	Village community		7(14%)	9(13%)	3(13%)
	Other		–	8(11%)	–
	Total		**51**	**70**	**23**
Service design methods	Discover	Shadowing	3(6%)	8(11%)	4(17%)
		In-depth interview	31(61%)	41(59%)	21(91%)
		Service safari	15(29%)	31(44%)	12(52%)
		Stakeholder map	10(20%)	16(23%)	13(57%)
		Affinity diagram	10(20%)	16(23%)	10(43%)
	Define	Persona	17(33%)	32(46%)	21(91%)
		Customer journey map	17(33%)	33(47%)	19(83%)
	Develop	Idea workshop	10(20%)	16(23%)	12(52%)
		Idea sketch	8(16%)	8(11%)	10(43%)
		Scenario	16(31%)	8(11%)	8(35%)
	Deliver	Storyboard	12(23.5%)	10(14%)	9(39%)
		Prototype	8(16%)	21(30%)	13(57%)
Key deliverable types according to the project purpose	Subject dissemination	Branding and promotion	22(43%)	26(37%)	3(13%)
	Delivering information and inducing action	Information design	3(6%)	14(20%)	7(30%)
		Product and kit design	4(8%)	9(13%)	3(13%)
		Digital-based content	16(31%)	9(13%)	10(43%)
		Space and environment design	20(39%)	11(16%)	5(22%)
	Building networks	Building governance	31(61%)	37(53%)	14(60%)
	Problem identifying R&D	Core R&D solutions	1(2%)	Nn(6%)	4(17%)

Fourth, from the point of the holistic approach, various touchpoints of user experience in the entire service journey were evidenced through the rapid prototyping practice which are core to design thinking. A time series analysis of the usage trend of service design tools in Table 3.5 shows that the introductory period (in 2014–2016) was characterized mainly by the use of user research tools. On the other hand, the developmental and maturity stages (in 2017–2020) consisted of the active use of creative and participatory prototyping methods throughout all stages of idea development and implementation strategy delivery. In the maturity stage, half of the projects analyzed use prototyping tools, such as scenarios and storyboards, to materialize policy ideas from a policy user perspective, increased by about 42% compared to the introduction stage. This indicates that service design principles and approaches were applied throughout the entire stage, not only of discovering user needs and defining problems but also of enhancing feasibility through experience prototyping. Notably, rapid prototyping and solution visualization in policy design were playing a role in extracting new ideas or facilitating communication between policy developers and users (customers) at the initial stage of policy establishment seeking collaboration opportunities in future policy implementation.

Fifth, various types of solutions resulting from CPDG activities were being used according to the project's purpose. Key deliverable types according to the public service design project purpose can be summarized as follows: first, for subject dissemination, the outcomes can visually express the message using branding and promotion to inform its seriousness and encourage citizens to participate and change their perceptions. Next, projects delivering information and inducing action produce design deliverables in the forms of information design, product and kit design, digital-based content, and space and environment design. This allows citizens to easily access information and efficiently use facilities and aims at promoting changes in individual behavior. On the other hand, projects for building networks aimed to build interactive governance for projects by establishing a public-private-industrial-academic collaborative field as tangible and intangible platforms. Governance establishment is a natural outcome of CPDG projects conducted through the public service design process which can play a positive role in enhancing the feasibility of future policies and materialized policy solutions as it establishes a cooperative system for stakeholders related to problem-solving. Finally, problem-solving R&D projects improve the quality of service through technology convergence research using design methodologies. However, public service design outcomes were being delivered as complex solutions according to identified user needs, journey-specific touchpoint types, and strategic objectives of problem-solving, rather than being defined as a single solution due to their characteristics.

5 Current Limitations and Future Development Areas of the CPDG

The analysis of the excellence projects by stage and interviews with service designers and public officials showed common limitations in operating the CPDG. First, policy objectives are likely to limit contributions of service design as they are specifically pre-defined. The *CPDG Business Plan* very specifically suggests policy goals according to the managing departments. Accordingly, the CPDG's activities goals are focused on improving or adding policy means to achieve such.

This is due to the practical difficulties of securing sufficient preparation period to select target citizens and develop subjects and research goals collaboratively, as the operation of the CPDG is limited to 5–6 months. In addition, the fact that public officials in charge of CPDG operation often perceive it as their secondary task also limits the possibility of citizens exploring new subjects. Therefore, public officials often apply for CPDG projects for topics that have already been established and implemented and they want to secure the validity of policy implementation or obtain specific ideas through citizen participation. In this case, the specific goals and solutions have already been set before the start of the CPDG process which possibly limits citizens' participation in the initial stage of problem-finding. However, the fundamental role of public service design is to seek new alternatives or improve existing ones by identifying unrecognized problems and their causes in the existing policy process, understanding users' latent needs, and through creative thinking to meet newly discovered problems and needs. Thus, clear policy goals that are presented in advance can limit the understanding of problematic situations and explore solutions through service design thinking.

Second, many projects present solutions such as improving websites, developing apps, and improving spatial environment design because they are relatively easier to build prototypes, thus easier to present visible outcomes and secure the development funding. However, visualizing intangible services and improving the interface between service providers and customers are crucial design spaces in service design. Enhancing user touchpoints through incremental improvements of websites or creating space for the sake of obtaining special grants should not become the norm of service design practices. Service design is not just a process for developing visual outcomes, but rather a creative method that connects users, stakeholders, and suppliers and materializes their needs to create a public-private-industrial-academic collaborative field for problem-solving. Thus, efforts should be made to externalize policy directions and service concepts through various tangible and intangible customer touchpoints and to establish cooperative governance to disseminate policy solutions.

Third, there are insufficient methods to review the roles and capacity of service designers. Private service designers were required to participate in the CPDG due to the lack of public personnel with service design expertise. In these circumstances, issues relating to the distribution of roles of service design experts and public officials participating in the CPDG, the establishment of an authority for the operation

of the CPDG, and the securing of responsibility for CPDG deliverables have not been fully discussed. Continuous attention should be given to the relationship between service designers and public officials to beneficially utilize the CPDG in improving the public service delivery system. It is also necessary to provide a formal system to identify and systematically manage the qualifications and capabilities of CPDG service designers.

Fourth, the understanding of service design needs to be promoted. The CPDG's performance relies largely on the understanding of service design. However, interviews with service designers showed a lack of understanding of service design among ordinary citizens and even among public officials participating in the CPDG.

This implies that although the use of service design tools and methods has increased as the phase has progressed, in terms of qualitative maturity, the understanding and internalization of the value and principles of service design by civil servants and participating citizens implementing the CPDG is still lacking. There is also a large gap in capabilities among service designers. Service design has only recently been recognized as an independent academic field in Korea; accordingly, many cannot successfully utilize various service design methodologies. In addition, the service designer pool is concentrated in metropolitan areas, making it difficult for many local governments to appoint service designers. Some local governments have even proposed measures to hire and deploy service designers by region, suggesting that service designers need to contemplate becoming public officials, and vice versa.

Fifth, improvements to the management system are needed to ensure the sustainability of the actual execution and diffusion of CPDG projects. A limitation can be found in that the activities of the CPDG are carried out only within a certain period and are mainly limited to the planning stage of the policy design cycle. Most CPDGs start their activities from mid-May to late June and finish during October. They are required to discover the true needs of public service users, explore various alternatives, and devise specific measures to implement them using service design methodology within a short period. The irrelevancy between CPDG's operating periods and budget compilation timings also interferes with the continuity of the projects. Although service design methodologies can repeatedly operate throughout the public service delivery process, the fact that it is constrained to the policy planning stage during a particular period needs further improvement.

Sixth, there are issues related to incentives for motivating participants. The CPDG may expect learning effects from the participation of public officials and citizens through their activities; nevertheless, measures to motivate participants should be considered as participation still requires time, money, and effort. In particular, service designers often describe the public service sector as a *land of talent donation* due to low monetary compensation compared to the time and effort required in operating the CPDG. Field experts or design majors are also sometimes categorized as the policy user in the CPDG structure—in some cases, they participate in the CPDG as the citizen, and vice versa—which needs reconsideration to whether such categorization is appropriate. Overall, the smaller proportion of ordinary citizens

compared to public officials or field experts also appears to be a limitation to the CPDG structure.

6 Discussion and Conclusion

Public service design shifts from the administrative model that was limited to collective concepts such as government, market, and civil society to focus on individual citizens—it moves away from the internal and external structural innovations of organizations and concentrates on the service itself. Consequently, public service design presents new possibilities to provide individual citizen-tailored public services by defining problems and seeking solutions through citizen (the public service users) participation.

The government has consistently explored alternative models to overcome the limitations of the existing public service delivery system and innovate the provisioning process of public services. In South Korea, the CPDG's service design purpose and intention appear to be oriented toward service design ideology, but on-site observations indicate that it is too early to conclude that they are true to service design principles. Currently, the CPDG's greatest limitations appear to be due to insufficient acquisition of design thinking among relevant ministries and departments, public officials in charge, and civil participants.

Service design explores the information and resources most adequate for defining problems and exploring alternatives and produces tentative outcomes by organization, analysis, and visualization. Stakeholders and policymakers continuously redefine problems and redesign prototypes during this process and ultimately aim to produce services that best meet user needs and expectations. The public service delivery system that is based on such design principles includes much more diverse actors compared to existing systems. The decision and enforcement of policies, that is, the supply and production of public services, are not procedurally separated, and the role of the government and citizens also overlap. Above all, it should be noted that target units of actualized public service policies are not limited to groups with average characteristics, but are subdivided into individual units with various preferences and expectations.

The potential effectiveness of service design in the public sector can be significantly exhibited when the government actively tries to solve the so-called *wicked problems* that it faces when seeking to improve the public's individual quality of life. For example, to meet the policy demands of complex issues involving welfare, health, education, employment, housing, etc., a service design approach may be more effective than existing administrative approaches in the process of identifying problems and exploring alternatives by focusing on individuals in various situations. Thus, a government that aims to utilize service design as a new alternative to the public design system should consider what capabilities differentiate from those that managed existing public service delivery systems. Educating and training competent public officials to operate service design processes based on design thinking;

providing opportunities for citizens participating in the co-production of public policies to learn the service design process; nurturing and securing public service designers capable of understanding the specificity of 'public' services that is distinct from private services are major tasks for the Korean government in the transitional stage of introducing the concept of service design to the field of public policy.

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Chapter 4
Service Design in the Context of Pragmatic Governance: Cases of the Singapore Government

Jung-Joo Lee and Debbie Ng

Abstract Since its initial collaboration with the globally renowned design consultancy IDEO in 2009, the Singapore government has established itself as a rapid adopter of design among Asian governments. By examining service design as a socio-cultural practice, this chapter reviews the trajectory of the Singapore government's design adoption within the framework of pragmatic governance. Through interviews with public officers and case studies, it becomes evident that their design adoption journey has been characterized by pragmatic acculturation, a legacy of the Singapore government. This chapter aims to illustrate how the adoption and impact of service design are influenced by socio-cultural and political contexts. While pragmatic governance provides the rationale for the Singapore government's design adoption journey, it also exposes critical limitations, notably a partial understanding of design. Our discussion will explore strategies to mitigate this partial understanding within the context of pragmatic governance.

Keywords Service design · Singapore · Pragmatic governance · Singapore government · Acculturation · Public sector innovation

1 Introduction

> *At the national level, design is similarly a core element of our nation-building. Singapore is a nation by design. Nothing we have today is natural or happened by itself… with each of these major policies, our founding fathers had to understand the issues, define the problem, come up with creative ideas and solutions, prototype the idea, test out the innovations, and constantly review the thinking and solutions. And that is the essence of design thinking.* – an excerpt from the Singapore Prime Minister's speech at the Singapore University of Technology and Design's Ministerial Forum (Lee, 2018, April 5)

J.-J. Lee (✉) · D. Ng
Division of Industrial Design, College of Design and Engineering, National University of Singapore, Singapore, Singapore
e-mail: jjlee@nus.edu.sg; debbie.ng@psdlpractice.com

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In 2018, the Singapore Prime Minister publicly mentioned about their endorsement for design to transform public services of Singapore. As a brief history, the first evidence of design adoption in the Singapore government is traced back when the Ministry of Manpower employed IDEO to redesign their Employment Work Pass Services Centre in 2009. The success of the project sparked curious conversations across the government organizations as it was favorably noticeable. Soon after, the Public Service Division under the Prime Minister's Office opened one of the first design-led in-house units in the Singapore government in 2011. The Human Experience Lab (renamed as the Innovation Lab afterwards) was built after benchmarking MindLab in Denmark and other innovation labs in Europe. The Civil Service College, the training institute for public sector leaders and officers, began to ramp up design thinking courses to build design capabilities amongst civil servants since 2015. Design as a strategic enabler for the public sector was subsequently included in the 10-year Design 2025 Masterplan by the nation's DesignSingapore Council in 2016 (DesignSingapore Council, 2016). More recently, the approaches with customer journey and service blueprint contributed to the Singapore government's achievement of the integrated services, such as LifeSG[1] or ServiceSG.[2] Amongst the Asian governments, the Singapore government is known as a front runner in adopting design.

This was happening side by side with the growth of 'design for government' or 'public sector design' communities, centering around UK and various European countries (Brinkman et al., 2023). According to the Service Design Impact Report in 2016 by Service Design Network, the public sector was the largest client for service design (Service Design Network, 2016), and this remains the same till now.

Design adoption in the Singapore government crosses the borders in twofold: first, design is adopted as an alternative approach to the government—i.e., crossing disciplinary borders; secondly design knowledge and tools were adopted across the geographical borders, namely from the European countries and the United States. Service design is a socio-cultural practice and how it is adopted and practiced is inevitably shaped by the specific organizational context (Duan et al., 2021). The pioneering exemplars of design practices in the European governments are grounded in their governance ideologies and styles, socio-cultural complexities, and so on (Kim, 2023). In light of this, it is worth investigating into the case of the Singapore government on how they adopt the Euro-centric logic and practices to its own problems (Yeo et al., 2023).

Over the history, the Singapore government is often characterized as "pragmatic" and "paternalistic" (Quah, 2018). The government leaders have exhibited their

[1] LifeSG is one of the Strategic National Projects under Singapore's Smart Nation initiative. Aimed at providing a suite of services to support citizens' needs at key junctures of their lives, all the way from the birth registration to post-death settlement, by integrating and bundling services across government agencies. https://www.life.gov.sg/

[2] ServiceSG is a first-stop service concierge that helps citizens access relevant government services across multiple agencies. It's the department under the Public Service Division, Prime Minister's Office. https://www.psd.gov.sg/servicesg/

strategic tendency to pragmatic governance, to achieve the outcome effectively, instead of posing dogmatic governance. The earlier quote by the Prime Minister in 2018 well demonstrates the Singapore's pragmatic governance in solving problems. It is unique in its way, and how the Singapore government became interested in design displays their pragmatic approach to the problem solving and operation.

With an overarching interest in unpacking service design in the socio-cultural context, this chapter aims to elucidate the trajectory of design adoption by the Singapore government from the lens of the pragmatic governance. We delve into two questions: firstly, how the design adoption in the government is shaped by the governance structure and agenda in Singapore; and secondly, what are the opportunities and limitations in such adoption shaped by the pragmatic governance. By doing so, we diagnose the current state of using service design in the Singapore government and discuss future directions.

2 Pragmatic Governance in Singapore

In philosophy, pragmatism is a movement that includes those who claim that an ideology or proposition is true if it works satisfactorily, that the meaning of a proposition is to be found in the practical consequences of accepting it, and that unpractical ideas are to be rejected (McDermid, 2006). It looks for the best feasible resolutions that realize their objectives by working through the constraints of specific situations (Dewey, 1938). The pragmatic approach recognizes the role of those who attribute value—valuers—as they realize their purposes through a material and sequential process (Kaszynska, 2023). The pragmatic maxim states that the meaning of our conceptualizations of the world should constantly be evaluated on the basis of their practical consequences. This means that theory and practice are connected, theories are made through practice and must be judged upon practice.

Pragmatism is as much a national ideology as it is a shared value instilled in the everyday life of the Singaporean and deeply embedded in the nation's policy and government structure (Chua, 1997). How Singapore has built its nation from the time of the first leader, Lee Kuan Yew is often illustrated an example of pragmatic governance, e.g., focusing on the solving of problems, instead of focusing on ideology. Singapore has adopted a pragmatic approach to policy formulation which entails "a willingness to introduce new policies or modify existing ones as circumstances dictate, regardless of ideological principle" (Jones, 2016, p. 316).

The Singapore government is known for its strength and willingness to learn from the experiences of other countries by not repeating the mistakes they have made in solving their problems (Rose, 2005, p. 1). Instead of "reinventing the wheel", which is unnecessary and expensive, the government leaders and senior civil servants would consider what has been done in other countries and the private sector to identify suitable solutions for resolving policy problems in Singapore. The policy solutions selected would usually be adapted and modified to suit Singapore's context (Quah, 2018).

This process of adoption and modification can be explained as "pragmatic acculturation", referring to "the cultural system of behavior and attitudes that allows and often encourages culture-borrowing or the adoption of aspects of non-native cultures for the purpose of satisfying specific needs" (Quah, 2008). It refers to a person's or group's borrowing ways of thinking (ideas) and ways of doing things (procedures) from other cultures to solve specific problems. According to Quah (2018), the process of pragmatic acculturation by the government comprise the three steps: problem identification and sending a team of experts and officials on a fact-finding tour of relevant technical centers and organizations in other countries to learn how the same problems are solved; invitation of internationally renowned experts to Singapore to give their professional opinions; and formulation of the policy plan from the ideas selected from what has been learned about the problem and tailored to the specific needs of Singapore.

The pragmatic governance has been persistent in the Singapore government over the past half century, with the stability of the government party. Its governing party, People's Action Party (PAP), is the longest uninterrupted governing party among modern multiparty parliamentary democracies ever since it was elected in 1959. The governance of the PAP has occasionally been characterized by some observers, especially in the West, as "semi-authoritarian" or "nanny-like" by liberal democratic standards (Tan, 2007). According to Tan (2007), the PAP proclaims that many Singaporeans continue to vote for the party as economic considerations, pragmatism and stability triumph over accountability and checks and balances by opposition parties.

Even though the government always maintained their position as separate from the political party, the watershed General Elections in 2011 was an impetus for the Singapore Public Service to engage the citizens through the 'Our Singapore Conversation', initiated in 2012. The findings revealed that the government was trusted for being highly efficient but seem to perform low in terms of empathy for their citizens (Khoo & Fong, 2016). When citizen-centricity became a keyword in the government, they started to hear about a few success stories of the overseas government adopting service design to reimagine service delivery. Design's advocacy for human-centeredness appeared as an effective logic for the government to reshape their image from a highly authoritarian and paternalistic to citizen-centered one. The pragmatic approaches to problem-solving in design thinking (Dalsgaard, 2014) or service design (Dixon et al., 2023) spoke to the 'solution-finding' logic of the Singapore government leaders (Tan & Chapman, 2017). Their journey of pragmatic acculturation of service design in the Singapore government has begun.

3 Methods

The primary method in this research is an in-depth interview (Fontana & Prokos, 2007) to delve into the overall context and journey of the design adoption of the Singapore government from the early phase to the current state, as well as the

achievement and challenges. Seven government officers who drove the adoption of service design in the various government organizations were interviewed (Table 4.1).

The interview questions delved into their work to bring and use design in the government, the challenges they experienced, and the factors that influenced their journey of adopting and using design in the government. The key questions include:

- organizational initiatives of adopting and using design;
- organizational culture and structure that influenced the journey of design adoptions;
- achievements and challenges;
- the role of leadership and internal capability for design practices in the government.

Each interview lasted from 40 to 70 minutes and verbatim transcribed for the qualitative analysis. The analysis followed a thematic analysis process (Braun & Clarke, 2006) to identify the key themes. Additionally, the interview analysis was triangulated (Carter et al., 2014) by three exemplary cases where the authors have worked with to help their service design adoption. The first case is the Ministry of Manpower (MOM), which is known as a front runner government organization in Singapore in design adoption. The second case is The Human Experience Lab (THE Lab), the first innovation unit under Prime Minister's office built in 2011 to work across various ministries and agencies The last case is from the Inland Revenue Authority of Singapore (IRAS), a taxation authority who oversees the administration of enterprises and individual income taxes. Those organizations are known as the representative cases of the way the Singapore government brings design and develops internal design capabilities over the past 10 years.

In their day-to-day practices, the Singapore government officers rarely use the term "service design", instead use the terms more known to non-design communities, such as "design thinking" or sometimes "human-centered design", while design

Table 4.1 Profiles of the interview participants

	Current position	Their past roles for design adoption
P1	Director at the ministry	Head of the government in-house innovation team
P2	Lead designer at the government agency	Member of the government in-house innovation team
P3	Principal design lead at the government agency	Lead of the government in-house innovation team
P4	Design consultant at the government agency	Member government in-house innovation team
P5	Director at Statutory Board in transformation and change	Lead of government in-house innovation team
P6	Director at the ministry	Director of government in-house innovation team
P7	Consultant at the government agency	Member of the government in-house innovation team

scopes, approaches and practices in their design-driven projects are in line with service design. In this chapter, we analyze and discuss our findings from the service design perspective but will follow the terms used by the practitioners in the reporting of our findings.

4 Unpacking the Pragmatic Acculturation of Service Design

From the thematic analysis of the interviews, we drew patterns that exhibit characteristics of pragmatic acculturation of design adoption. These patterns show alignment with the paths of the three cases, and the interview findings explained about detailed contexts and practitioners' experiences behind the patterns. The patterns were derived into seven themes and mapped the along with the three phases of pragmatic acculturation of the Singapore government characterized by Quah (2018) (Fig. 4.1). In this section, we unpack each theme to elucidate how the Singapore government's journey of design adoption is shaped by and assimilated with pragmatic acculturation.

4.1 Problem Identification: Lost a Touch with Citizens

All interviewees mentioned the year of 2010 or 2011 as a turning point for the Singapore government to realize they *"lost a touch with citizens"* (P2) and citizens demanded more explanation and higher-level services. There was the biggest demonstration by citizen communities in its history and the ruling party felt a lot of pressure from the opposition party at the general election:

> *I remember 2011 was what we call a watershed election. There was a lot of fear in terms of 'are we engaging our citizens?'. A lot of people are complaining that the government doesn't understand the citizens and there was a lot of conversation around how our government is very top-down, very high-handed, and there are people in the government office who don't understand people on the ground. I think that's when it became something really, an awakening call, I would say that we (government) cannot continue status quo because even though we are very efficient, people are still not happy.* (P7)

It was also the time the government started to digitalize their systems and services. But citizens were experiencing higher quality services from commercial industries:

> *I think they (government) felt that they have reached a pinnacle of efficiency but if people were still not happy with your services, what is a different approach to take, to change that experience. So that's how it (design adoption) started.* (P1)

Those problems had the senior management of the Singapore government interested in design to engage citizens. Their journey of design adoption has begun.

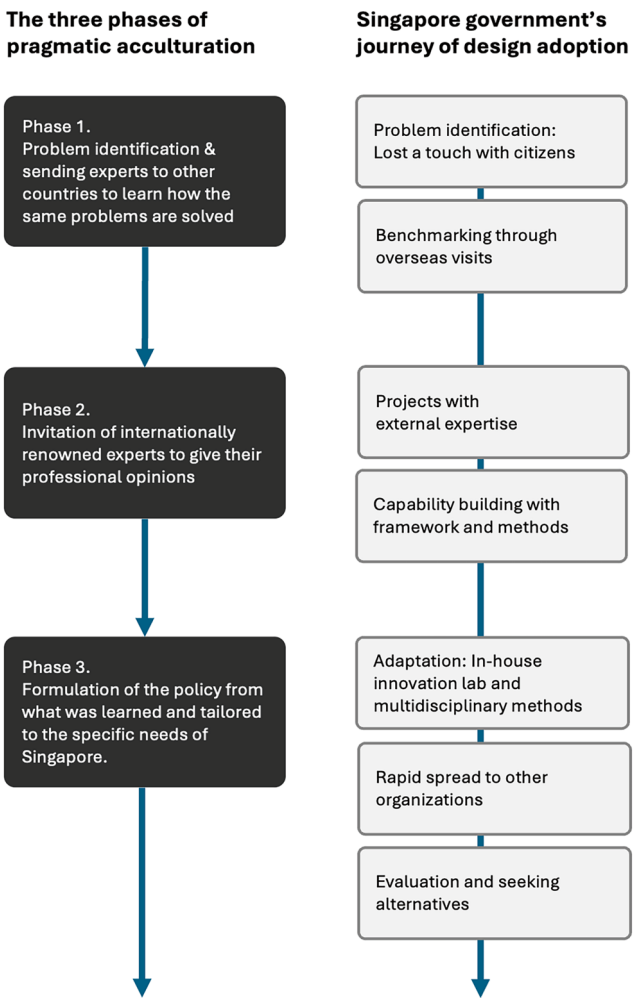

Fig. 4.1 Mapping the Singapore government's journey of design adoption along with the three phases of pragmatic acculturation

4.2 Benchmarking Through Overseas Visits

The interviewees shared that it was a *"natural move"* (P5) for the Singapore government to form a delegate and send them to *"the best names"* (P3, P7), when it comes to learning about a new approach. They also received a good financial support from the government for those overseas visits.

> *I think what the Singapore government likes to do is to pick out certain, take areas of products or services that other governments are good at and say, 'hey, they did this thing that is similar or is this what we are moving towards, so what can we learn from it?'…I think the*

> *Singapore government learnt a lot from looking at others. We have no qualms about constantly studying what other people are doing and trying to move faster. And avoiding, trying to avoid mistakes that others have made or looking at different countries and adopting a bit of everything.* (P1)

In the MOM's case, it was the senior management who learned about IDEO and initiated the design adoption. He visited IDEO and soon after made a contract for a series of design-driven projects. The senior management then sent the middle managers to the Behavioral Insights Team (BIT) in UK and Public Policy Lab in New York to learn how those new approaches are operated in the government organizations. During this period, the Public Service Division initiated similar exploratory endeavors. These included visits to counterparts such as MINDLAB in Denmark, attended by the Permanent Secretary of the Division.

4.3 Projects with External Expertise: Overcoming Knowledge Boundaries

After the overseas benchmarking, the next phase was to invite the renowned experts to Singapore and experiment benefits of service design through collaborative projects. Several interviewees mentioned that their organizations often started with the improvement of service touchpoints, such as communication letters or service centers. If those teaser projects bring successful outcomes, they move on to larger projects. This experimentation and evaluation well demonstrate the Singapore government's pragmatism. MOM was a clear example in such move:

> *What I heard is someone in the senior management learnt about IDEO so they went to visit IDEO and thought "This is an interesting way of doing things so let's try one project and let's see how it goes." And the feedback was good from the redesign from the center and they thought "Let's try on other areas of work." So they moved to redesigning the whole work pass system.* (P1)

In the meantime, they also experienced challenges from different logic and languages brought by the invited consultancies, which resulted in difficulty to get buy-in from the upper management. The middle management officer who led the collaborative projects with the design consultancies shared his experience:

> *There was this presentation and the [consultancy name] person said, 'we must step forward by stepping back'. And then I was looking at the Perm Sect (permanent secretary) and I was thinking, 'I'm going to lose my job.' Because we put our credibility on the line and then I bring in this Westerner to talk to you in Zen riddles.* (P2)

To overcome the gaps in knowledge and vocabularies, they decided to *"embed"* (P2) the government staff within the consultancy for a project, to be immersed in the design team and learn how they work. This was found effective to internalize design knowledge within the government:

> *We purposely sent him in, and every Friday he came back and caught up with us. It was very good because we had him to benchmark. Until then, a lot of the [consultancy name] stuff*

seemed like black magic. Sit down in a room of post-its and make, tell each other stories, and synthesize… They (consultancy) always involved us. I think they also understood that if a project manager spends more time with them, he would become more on their side. (P2)

4.4 Capability Building with Framework and Methods

Concurrently, the government organizations started to shift their effort to the internal capability development and train their employees with design. Short-term trainings, mostly through workshops, were commissioned to consultancies. In MOM's case, they also sent their key staff from customer services teams to Stanford d.school for short-term trainings.

One notable insight from the interviewees was that the training primarily focused on introducing methods. One interviewee identified two reasons for this: first, design as a mindset was *"harder to teach,"* and second, *"Singaporeans are obsessed with the right answer and the right process"* (P2), a tendency that might stem from Singapore's education system that focuses on measurable outcomes and standardized testing. Another interviewee compared her observations from training sessions in the Australian government with those in the Singapore government, highlighting that the Singapore audience is particularly keen to learn knowledge in a codified form, such as frameworks or methods:

In Australia, people don't have to show the officers that much framework, they are not as hungry for those things. But here (Singapore) they must tell them that there's 10-steps to do Design Thinking. (P7)

4.5 Adaptation: In-house Innovation Lab and Multidisciplinary Methods

The Singapore government's next move was to set up their in-house innovation labs and internal frameworks, as a result of benchmarking overseas exemplars, such as MindLab from Denmark, Policy Lab from the UK government, the Australian Taxation Office Innovation Lab, and so on. How the Singapore government characterized the innovation labs is in line with what McGann et al. (2018) refers to as "public sector innovation (PSI)" lab for public policy and public sector innovation under the auspices of government departments or agencies.

MOM was the first Singapore ministry that set up the innovation lab. Based on their benchmarking from the UK government and BIT, MOM formed their very first innovation unit called "Behavioral Design Unit (BDU)", by combining design thinking and behavioral economics. In their model, design thinking was brought to facilitate the understanding of citizen's experiences in a qualitative way, while behavioral economics was MOM's choice to compliment design with evidence-based, quantitative reasoning. A few years later in 2017, they added data analytics

to their innovation model and transformed BDU into "Co-Lab". Adding data analytics elevated credibility of what the lab was doing as shared by one interviewee:

> *What was interesting about Co-Lab was the combination of design work, behavioral insights work and data analytics. When you talk about data, people become more cognitive so it's not so difficult because you can convince them with numbers.* (P1)

BDU's main tasks were to develop MOM's internal innovation process, train various departments with the innovation process and relevant skills and facilitate projects between operation departments and external design consultancies. The senior management of MOM encouraged other departments to work with BDU by offering mandatory programs (for example, Fig. 4.2) and incentives. The senior management also assured a direct reporting structure for the BDU, for essential decision makings within innovation projects to be efficient:

> *I think the MOM management had an understanding that "oh, I set up this team to try out certain things, so I shouldn't hold them to the same type of operational standards or efficiency.' That's how I think the Singapore government management has optimized the use of these teams; by having a certain awareness of how you want to best leverage on them.* (P1)

Around the similar time, Prime Minister's office also set up the innovation lab called "The Human Experience (THE) Lab", with a team of five to six full time staff. Not only did they champion design across the whole of government, but also collaborated with the Civil Service College to develop design thinking and service design curriculum for public officers. Similar to MOM's case where the first innovation lab (BDU) was transformed into another one (Co-Lab) by reorganizing their approaches, THE Lab also transitioned into "i-Lab", combining different methodologies such as

Fig. 4.2 An employee training workshop organized by BDU at the ministry of manpower

design thinking, behavioural insights, organizational development, business process re-engineering, data analytics and scenario planning (from futures thinking).

IRAS was one of the followers to set up their innovation lab, after watching the effectiveness of MOM and Prime Minister's office. In 2016, IRAS established a team called LEA:D as acronym of "Leveraging Analytics, Design, and Digitalization", to enhance the experiences of both enterprise and individual taxpayers. Initially, this team collaborated with external consultants to kickstart their design-driven projects. After learning from these projects, LEA:D led a inhouse training for over 100 staff members with essential design capabilities. They took a similar journey where they created their own inhouse design framework by combining design methods with agile and behavioural insight. Data analytics was also integrated within the innovation toolkit to marry the data analytics with human-centric principles.

4.6 Rapid Spread to Other Organizations

The quick learning and adoption from successful cases took place not only from overseas but also across the Singapore government organizations. The successful design-driven projects and set-up of the internal innovation lab have inspired other organizations. A few other agencies, such as the Central Provident Fund Board, Land Transport Authority, Ministry of Defence, and the Ministry of Home Affairs, started to form their own innovation labs. One interviewee shared how the earlier projects by MOM's innovation lab sparked the discussions in other organizations what design can bring to them:

> *Back then we didn't know service design, we didn't know what Design Thinking was but we heard really interesting things that Ministry of Manpower had worked with a consultancy called IDEO and they had redesigned the service center. So it was the big thing on the radar for two years. A lot of civil servants started to go on trips, senior leaders will go and visit this employment pass service center. And it's almost like all innovation labs need this early success, quick win, to convince the nay-sayers about how design can be helpful.* (P2)

Another interviewee also shared her concern that this *"copy"* across the organizations might happen without a proper understanding of what design is about:

> *What is also interesting is when they start to copy, they are not quite clear what design is actually. They will just copy like 'if agency A is doing this, we better make sure we do it.' Then, they start to find the magic bullet.* (P7)

This proliferation across various organizations demonstrates how Singapore government is agile and pragmatic in learning and adopting from others. In terms of the pragmatic acculturation journey by Quah (2018), this finding depicts what happens after an initial phase marked by pragmatic acculturation among the early adopters who pioneered in Singapore. Subsequent phases include learning journeys where follower agencies seek insights from these early adopter agencies, aiming to grasp how these pioneers developed and assimilated the new intelligence learned and the

potential pitfalls. This phenomenon serves as an additional avenue for acculturation, tailoring their individual approaches to respective agencies.

4.7 Evaluation and Seeking Alternatives

While design was a core driver for innovation labs, once the organizations completed a few projects as experiments and achieved their training goals (e.g., a certain number of teams attending design thinking workshops), design became part of *"many ways to solve a problem"* (P1). One interviewee who used to be a member of the innovation lab, questioned about the need of fully design-trained members once the government organizations acquired a certain level of design capability:

> *When we talk about an in-house unit, I'm not sure. We probably need an in-house unit but not maybe a designer, or not maybe full-time design trained. The cardboard prototypes we (non-design employees) created were really bad, but it did a job.* (P2)

In addition, while design taught them a new way of engaging in citizen experiences, the government still sought for approaches that are aligned with the logic of policy development. A new wave from big data was rapidly adopted and growing in the innovation labs for that reason:

> *After all, policy makers don't trust design interviews even though it's generative and reveals some profound insights. They will be like, 'how many people did you speak to? Ten? No no no, we need a survey you know.' For policy makers, they want hard numbers or demographic data. So data science has been adopted far quicker and far easier.* (P2)

As results, design capability of the innovation labs and the organizations did not mature further, or even dissolved. In MOM, several operation departments who went through design thinking training facilitated by Co-Lab, gained some familiarity in procuring and managing design-driven projects with external agencies, so they directly engage in external design expertise when they need design resources. Most of the initial members with design expertise have left Co-Lab. Similarly, at IRAS, the team persisted in leveraging diverse disciplines to enhance service delivery, exploring decentralised models and addressing challenges at leadership levels.

5 Reflection on the Pragmatic Adoption

After recalling their design adoption journeys, interviewees reflected on what enabled such adoption in the context of the Singapore government's system. They also identified what have been achieved after the cycle of pragmatic acculturation and what were identified as limitations.

5.1 Enablers for Effective Adoption

The interviewees identified a few factors that facilitated the pragmatic and agile adoption of design within the Singapore government, distinguishing it from other Asian governments. One notable factor is Singapore's stable political environment, maintained by the dominant party that has governed since the nation's inception. Other governments might adopt design pragmatically, but their efforts can be hindered by political instability and competition, which disrupt effective planning and budgeting. In contrast, the Singapore government can focus on implementing plans without the disruptions of ideological debates.

> *Because it's more stable, you can actually finish or implement your projects. When your political party keeps changing, their interest may change and the way they allocate resources may change. Let's say you build a system for a few years and if the government changes, you might not receive any funding.* (P1)

> *The Singapore Government and our political leaders, the synergy is almost hundred percent. We don't have any infighting. If the minister says something, we can execute very fast and it's stable. We have the luxury of long-term planning and money. We are very unique in those two aspects alone; we are very different from the whole of Asia.* (P2)

Additionally, citizens' trust in the government encourages the government to undertake new initiatives. As one of the interviewees mentioned:

> *The higher trust definitely allows you to implement things more easily. And Singaporeans being more pragmatic and valuing convenience, that's also a trait that helps people accept your public services and the changes towards tech more easily. So people don't fight back as much based on principles.* (P1)

5.2 Limitations Identified

Interviewees noted a significant increase in awareness about design, particularly regarding user centricity and prototyping. One interviewee who helped establish a design-related curriculum at the Civil Service College emphasized that while design thinking methods might fade as a trend, the underlying mindset and awareness have become ingrained:

> *Is it (design thinking) a fad? Will it go out of fashion? I always differentiated the methods and the process and the values and the ideas. One day if design thinking is no longer that faddish thing, I would think and am quite confident that some of these values have been caught and it's part of our DNA now. Whether they have the capabilities or skills to apply design in a professional and correct way, with regard to the values, it's hard to unwind.* (P5)

On the other hand, such interaction level of awareness on user centricity and prototype testing (Lee et al., 2022) also mirrors the limitation. Initially, the primary motivation for the Singapore government to adopt design was their disconnect with citizens' increasing demands and dynamic needs. In other words, for the Singapore government, developing design capability meant understanding customer

experiences through various tools. Although the transformative roles of design (e.g., Mortati et al., 2022; Sangiorgi, 2011; Vink et al., 2021; Yu & Sangiorgi, 2018) have been increasingly highlighted in academia, such system-level transformation was not part of the government's design agenda. The political stability of the Singapore government, which facilitated effective design adoption, also means they do not require a radical, system-level change.

> *For the Singapore government I think it's very hard to let go of the inclination for data and for cognitive, long-term planning and an inclination to be paternalistic. I think these are just the core traits of the history of the government and it feels difficult to shift the culture away from it. You just see a lot of this type of work (design-driven projects) but in pockets in different domains. It wouldn't cover holistically. Then all these would just become interesting case studies.* (P1)

With this mindset, the Singapore government's design interventions remained at the interaction level rather than addressing policy development at the management level, even though the core issues might lie within the *"policy issue"* (P5) or *"ecosystem"* (P2). One interviewee reflected that her projects mostly concerned with frontliners instead of going deeper into a policy level:

> *We have done a lot of projects where we deal with a lot of frontliners. So we train them, we get them to be more citizen centric, we transform the way they do their services and blah blah blah. But what they have been sharing with us is that it's not that they don't want to get their job done, but it's a policy issue.* (P5)

The government's understanding of design at the interaction level implied a limitation for cross-organizational projects, too. A Lead Designer whose main responsibility is to design digital systems for counterpart government organizations, reflected:

> *We still run into the problem of who's paying and who started when doing design projects. Because if you pay and you define the problem, it is very difficult to bring on different partners for the complex problem. We have not converted government's thinking into more ecosystem, cross-organizational thinking.* (P2)

The interviewees also raised concerns on the format of design thinking training. Because the prevailing format of training was a short-term workshop and method-driven, it had critical limitation in that the employees would only be able to take away what appears on the *"surface"* (P2) without a profound understanding of how to apply trained methods in respective contexts. The frequency also resulted in the phenomenon of *"fatigue"* (P5), even before experiencing possible impact:

> *For some of the leaders, there is a little bit of fatigue. But I don't think they have gotten the chance to truly benefit and understand the value of design. And I suspect they only get to hear part of the story.* (P5)

6 Discussion

From a broader perspective, the Singapore government's engagement with design exemplifies its pragmatic approach to adopting new disciplines or methods. For the government, the original principles and theoretical purity of design are secondary considerations. What holds primary importance is how the adopted approach can effectively address problems and further their agenda. It is also observed that the development of design capabilities reaches a plateau or is phased out once specific goals are achieved. While this pragmatic adoption strategy isn't inherently problematic, it does come with its own set of limitations., which we will delve into in this section, drawing upon insights gleaned from our interviews and cases.

6.1 Pragmatic Adoption Leading to a Partial Understanding of Design?

According to Marres (2007) and Kornet (2016), pragmatic steering can contribute to a government that is more reflexive, effective, legitimate, and 'open-minded', and pragmatic governance is understood from the key elements of Deweyan pragmatism, i.e., focusing on specific issues, experimentation and evaluation, and participation in communities of practice. The Singapore government's pragmatic approach enabled them to be open to try out a new approach, i.e., design in this case, and effective in learning. Tapping on their legacy of pragmatic acculturation, some pioneering organizations established their own signature multidisciplinary frameworks.

As presented in our findings, such pragmatic adoption also exhibited limitations. One critical limitation was the government's partial understanding of design, which might have stemmed from their approach to design adoption, focusing on specific goals and expecting quick results. This aligns with Dorst's (2015) caution regarding the prevalent trend of design adoption. Our research elucidates this phenomenon by examining the pragmatic stance of the organization. From the Singapore government's viewpoint, design was viewed as a pragmatic tool to address specific problems. In this pragmatic mindset, the original methodologies, logic, or ideologies of design were of little concern; rather, they selectively embraced what seemed practical and useful, such as user research tools and the double diamond process, adapting them as necessary. Consequently, design was assimilated as a utilitarian form of knowledge, often condensed into a set of methods and process diagrams, resulting in a limited understanding and underutilization of its broader potential, namely for enabling cross-organizational/sectorial collaboration (e.g., Hyvärinen et al., 2015) and tackling system problems (e.g., Drew et al., 2021) and new governance (e.g., Hyysalo et al., 2019).

The rationale behind the Singapore government's decision to integrate design with or transition to other methods can also be understood in terms of pragmatic governance. Pragmatic governance involves employing various modes of

governance depending on problem analysis (Edenhofer & Kowarsch, 2015; Kornet, 2016). When experimenting with the new approach, such as design, the Singapore government operates in a mode emphasizing the outcomes of public management, known as *performing government* (Bourgon, 2011). While design methodologies offer rapid prototyping capabilities, they lack evaluation metrics and the volume of data that the government deems necessary. Consequently, they couldn't justify continued experimentation due to concerns about *"taxpayers' money"* (P5). This partial understanding of design, coupled with the legacy of the performing government's emphasis on proving value and outcomes, led the Singapore government to explore alternatives like data science, which addressed their perceived shortcomings of design. This swift evaluation and transition to alternatives typify pragmatic governance (Kornet, 2016). The abstract nature of design compounded the challenge of justifying design adoption since it is hard to attribute the impact of the change to service design.

Operating within the pragmatic governance framework, the Singapore government exhibits paternalistic tendencies (Quah, 2018). The adoption of design by the government was pragmatic yet top-down, with a specific agenda of enhancing customer-centricity through user research and prototyping. While design-driven initiatives mainly targeted public services or administrations, they did not prioritize policy development or organizational transformation, unlike much of the existing literature on public sector design which emphasizes "design for policy" and "design for complex systems" as the pinnacle of design adoption (e.g., Brinkman et al., 2023; Lewis et al., 2020; Mortati et al., 2022; Design Council, 2013).

6.2 Implications for Service Design Communities

The trajectory of design adoption within the Singapore government illustrates how design is embraced, applied, and sometimes phased out within the context of pragmatic yet paternalistic governance. This phenomenon holds implications for service design communities. During the phase of enhancing internal design capabilities, there was a surge in the hiring of internal designers by the government, expanding designers' areas of contribution and potential employers. However, active recruitment of designers by the government significantly declined after the pragmatic adoption cycle, as the government believed that certain service design capabilities have been acquired.

One future direction for achieving longer-term and broader impact after the cycle of pragmatic acculturation of design could be for the Singapore government to establish more active and sustained partnerships across various agencies, regional communities, research institutes, design practitioners, and social organizations. After all, the country has also ramped up its engagement with the public using approaches in co-design. This evolution of design aligns with Deweyan pragmatism of learning and could also facilitate networked governance, which the Singapore government has recently aimed to implement (Wang & Liu, 2018). Creating such

partnerships would involve initiating and nurturing collaborative networks where the government engages with other communities of practice to experiment with and mobilize design interventions on a more ecosystem level. This kind of collaborative projects would allow more equal collaborative roles between service design practitioners and the Singapore government where design practitioners would introduce new framing (Lee, 2020) and a wider spectrum of service design for transformative impact (Yu & Sangiorgi, 2018), going beyond their vendor-client relationship in the past projects. Through these partnerships and collaborative projects extending beyond customer experiences, the Singapore government could uncover new design capabilities and sustain its impact. By leveraging the strength of pragmatic governance, successful cases from these dynamic partnerships can be quickly benchmarked and disseminated to other organizations.

This doesn't necessarily mean starting with large projects for system-level transformation from the beginning. Instead, the government should strategically plan for impacts aligned with their agenda, informed by a fuller understanding of service design spectrum. A similar endeavor is demonstrated in Yeo et al.'s (2023) work on design capability mapping with three Singapore government organizations, which encourages public officers to reflect on their current understanding and utilization of design and map out future aspirations.

Additionally, our interview findings highlighted the crucial role of leadership and their awareness of design's full potential. Beyond training frontline staff or mid-level managers, service design or design leadership training should target government leaders, enabling them to create conducive environments, provide organizational support, and initiate larger projects (Ng, 2022). This aligns with the Civil Service College's recent initiative to offer design leadership education for public sector leaders.

7 Conclusion

This chapter overviewed the trajectory of Singapore government's design adoption in the context of their pragmatic governance and acculturation. The framework of pragmatic governance explains the rationales behind the design adoption journey of the Singapore government as well as limitations associated with the rationales. By doing so, this chapter demonstrates how the particular governance context shapes the adoption and use of service design and brings attention to socio-cultural and political contexts where service design is applied.

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Chapter 5
Innovation Shifts: Moving Towards a Sustainable System of Design Adoption in the Thai Government

Pisate Virangkabutra

Abstract Design thinking is a term and method widely used in the design industry. Due to its human-centered approach and the versatility of the process, many disciplines and sectors outside of those traditionally labelled as the design industry have adopted the methodology as the front end of their working process to create direction and a more targeted approach to product, service and policy development. One example is the Thai public sector. This article investigates the use of design from five government organizations, with a particular focus on design thinking and service design as an innovation and working tool and the adaptation of the "design ethos"—design principles that characterize the designer's culture in practice for the public sector in Thailand. It uses the theoretical framework of the four-design typology to explain the state of design adoption in the public sector. The four domains are (i) design as output, (ii) design as capacity building, (iii) design as culture, and (iv) design as core value. These four domains of "design as" are explained with case studies that are related to Thailand, followed by a section on how to improve design adoption, and concluded with the three innovation shift suggestions, which are hierarchical to collaborating shift, administrating to innovating shift, and peripheral to structural shift.

Keywords Design thinking · Service design · Design in government

1 Innovation Comes to the Thai Government

Innovation is a term widely used to communicate new developments in products and services. This article explores innovation in the realm of design in the public sector in Thailand. A human-centered design methodology, also known as design thinking, is increasingly used in various forms in the Thai public sector for capacity

P. Virangkabutra (✉)
School of Global Studies, Thammasat University, Bangkok, Thailand
e-mail: jett@sgs.tu.ac.th

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building and is slowly being integrated into the workflow. This article describes a short history of how design thinking became an innovation tool in the public sector and discusses the key implications and outcomes of its implementation. As a practicing design researcher and academic, the author has read many articles about design thinking being used to improve public services and policies worldwide and wanted to investigate how design thinking as a methodology can be implemented in the Thai government context. The author then had the opportunity to work on the Government Innovation Lab project with the United Nations Development Program (UNDP) and the Office of the Public Sector Development Commission (OPDC) in 2017, which kickstarted the involvement in design thinking-driven innovation projects in the Thai government. Many of the projects featured in this article were conducted by or participated in by the author. The main research question of this chapter is "What are the factors that facilitate sustainable adoption of design thinking as an innovation tool in the Thai government?"

Design thinking-driven innovation was formally introduced and taken up significantly in Thailand after Helen Clarke, at the time the UNDP Administrator, visited the Thai Prime Minister in March 2017 and discussed collaboration opportunities between UNDP and the Royal Thai government. The OPDC was given the task to carry out an experimental project called the Government Innovation Lab with the aim to promote innovation in government in the hope that it would entice government agencies to set up Innovation Labs. The aims of the project were:

1. To improve the well-being of citizens through government public services; and
2. To help the private sector in ease of doing business.

These aims were supported by the World Economic Forum's Global Competitiveness Index 2017 (World Economic Forum, 2017) in which Thailand ranked 32 out of 137 countries in ease of doing business with the second "most problematic" factor for doing business being "inefficient government bureaucracy".

The project was collaborative in nature, employing lecturers from Thammasat and King Monkut University of Technology Thonburi to work with what was previously called the Thailand Creative and Design Center or TCDC (now also known as the Creative Economy Agency). TCDC provided support in methodology, venue, and knowledge management in conducting seven experimental pilot projects using innovation methods—specifically design thinking to improve public services. Among the pilot projects, three projects were conducted in the capital and focused on ease of doing business, such as herbal product registration, testing laboratory support system, and improving hospital queuing and involved ministries such as the Ministry of Commerce, Ministry of Science, and Ministry of Public Health. The other four projects were conducted in regions outside of the capital with a focus on improving the well-being of citizens in areas of elderly social development, community tourism and enterprise, and implementation of organic farming. The outcomes of the projects were then handed over to the relevant ministries to be taken to the next level. The key learnings from the projects were also compiled into a handbook titled *Government Innovation Lab in Thailand"* in Thai and English (United Nations Development Programme, 2019).

Since the Government Innovation Lab project, design thinking has become synonymous with creating innovation in other ministries. Many talks and events have been held by various government agencies to promote the use of design thinking and test out the methodology as part of a plan to set up other Innovation Labs in Thailand.

2 Thailand 4.0 and Public Sector Improvement

The OPDC initiated the "Government 4.0" model in 2017 with an aim to improve public sector service delivery in support of the innovation-driven economic principles of the Thai government's "Thailand 4.0" development strategy. The OPDC proposed three key principles to reform how the government works (Fig. 5.1):

(i) Open and connected government: A government that is transparent and easily accessible;
(ii) Citizen-centric government: Policies and public services are created with citizens' needs in mind; and
(iii) Smart and high-performance government: Digital, data technology and innovation-oriented government.

As seen in Table 5.1, the OPDC's intention was for design thinking methodology to play a critical role in achieving a new way of work for the government, which would improve public services. The Government Innovation Lab was an

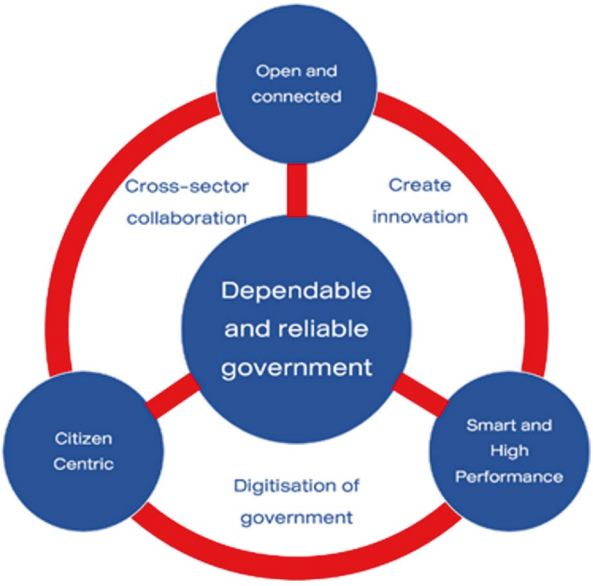

Fig. 5.1 OPDC's Government 4.0. (Maesincee, 2017)

Table 5.1 Comparison of the old and new style of government. (UNDP, 2019)

Old style	New style
Autonomous and separated work style between units	Collaborative work style from policy to operation
Operation is not fully digitized; instead, it is fragmented and hierarchical with a vertical approach	Operations are fully digitized, connecting every government unit with end-to-end process flow, and cross-boundary management to deliver better services with a horizontal approach
The government provides standardized service delivery	The service can be customized to individual needs, with the process and service delivery designed accordingly
Analog work system	Digitized work system
Passive work approach responding according to the situation	Proactive and predictive work approach with instant responses to change
Government and policy-driven operation	Citizen-centric approach to operation
Delayed and costly work system	Creating value for the public, doing more and better with less
Closed access to information system and access given upon request only	Open access to information as default and ready for use without request
Routine work approach following the same steps	Non-routine problem-solving, real-time capability
Standalone work unit without resource sharing	Resource sharing to reduce costs and improve work capability
Policies and operations set by intuition and speculation	Policies set in accordance with the citizens' needs by employing data and demand-driven approaches to create actionable policy solutions
Public service during office hours	On-demand public service
An expert and specialization approach to work	Ability to use knowledge, intelligence and information systems to solve problems and create value, learn, and have ethics in work
Civil servants as public administrators	Civil servants as public entrepreneurs

experimental platform for recruited government employees or "i-teams" to go through the "learning by doing" scheme with coaching from academics and professionals.

3 Design Thinking in the Thai Public Sector

In 2017, the UNDP suggested design thinking as a methodology to build capacity for government employees to improve public services and policies as it already had experience using design thinking in other parts of the world. UNDP then proposed to manage the Government Innovation Lab project with OCSC and invited Marco Steinberg, former Director of Strategic Design at Sitra, the Finnish innovation fund, to coach and consult for the project.

Design thinking is a human-centered evolving methodology that changes over time. The principles of design thinking can be found in various forms from a wide variety of companies and institutions such as IDEO, a design and innovation consultancy based in San Francisco, and the Stanford d.school, just to name a few. Instead of synthesizing the design principles from various sources, this study views design thinking in the context of the Thai public sector as the application of the "designer's ethos" to create innovation in government, focusing on how its work culture is being impacted by the implementation of the mindset, toolset, and skillset of design. The traits of the designer's ethos are presented as follows:

- Understanding the user's environment through field research: This is when government employees consider the people they are targeting as the beneficiaries of the service or policy and conduct research in the field by listening to their needs.
- Iterative and experimental processes: In order to innovate, solutions should not be presented first, but instead the process of work incorporates room to experiment and iterate to test ideas to find appropriate solutions.
- Collaborating across fields: Public problems have many layers of complexity and require collaboration across many disciplines to come up with new ways to solve problems based on the various expertise that multi-disciplinary teams bring.
- Learning from various sources: Different sources of information could help to identify needs better. At the beginning of each project, teams should consider talking to experts, using both qualitative and quantitative methods, and borrowing tools from other disciplines.
- Being comfortable with ambiguity: Ambiguity is a great source of opportunities. Reframe and frame complex problems with a human-centered design approach and open up to new possibilities instead of forcing embedded solutions from the start.

In this study, service design is considered as an approach that builds upon design thinking principles and produces public service outputs. Service design is an important part of the narrative of the implementation of the designer's ethos in the context of the Thai public sector.

4 Case Studies and Findings

The aim of this study is to understand the experience of selected public sector employees who have been trained and managed innovation-led projects. The organizations chosen are based on capacity-building policies of implementing innovation according to the Government 4.0 mandate mentioned above. The organizations are as follows:

- **The Creative Economy Agency (CEA):** Previously known as the Thailand Creative and Design Center (TCDC), it was set up under the Office of Knowledge Management to cultivate creativity, knowledge, and cultural assets to advance

the country. The CEA was selected as a case study since the organization officially introduced service design to both the private and public sectors.

- **The Office of the Public Development Commission (OPDC):** Its role is to manage the public sector's system of how government employees perform their duties. The OPDC kick-started the use of design thinking in government with the first Innovation Lab project.
- **The Office of the National Digital Economy and Society Commission (ONDE):** Its role is to plan, promote, and develop the digital economy and improve society. ONDE conducted the policy lab experimental project by incorporating design thinking as the main methodology used to train its employees.
- **The Office of the Civil Service Commission (OCSC):** Its role is to act as the government's human resource unit responsible for recruiting, benefits, and regulations for all public employees. The OCSC introduced design thinking as a part of a project called Country Reform, National Strategy, and Reconciliation, known as the RSR capacity building program, for high-level government employees to support the 20-year national strategy.
- **The Office of the National Economic and Social Development Council (NESDC):** It was set up in 1950 to advise the government on national economic issues. The role and responsibilities then grew to cover not only economic but also social issues. Design thinking was introduced to the organization in the form of a training program in 2019 in preparation for the collaboration with UNDP to set up the Thailand Policy Lab.

To understand how the Thai public sector addresses design-led innovation, interviews were conducted with mid-level government employees from June 2018 to January 2022 to hear about their experiences and the policies that impact their work. A total of 10 individuals participated—9 were from the five organizations mentioned above, and 1 was an Industrial design lecturer from King Mongkut University of Technology Thonburi who helped conduct many of the projects in the case studies—and all requested to remain anonymous. All the interviews ultimately contributed to the formulation of findings by the author (Table 5.2).

The interview questions can be summarized as follows:

- Is there an innovation unit in the organization?
- Does your organization apply design to your work process? If so, when and how?
- How has design been used in the organization? Can you give an example?
- How is the knowledge being provided? How is it currently being used?
- How would you like to see design in the future?

4.1 Case 1: Creative Economy Agency (CEA)

The first public organization, previously called TCDC (Thailand Creative and Design Center) and now known as CEA (Creative Economy Agency), is a creative agency that was set up to promote design and innovation. Design thinking as a

Table 5.2 Interviewee list

	Position	Organization	Roles
1	Team leader, development, engagement, and people partner unit	OCSC	Managed the RSR training project using design thinking and implementing design methodology in OCSC
2	Policy analysis and planning officer	ONDE	Initiated and managed the policy lab training project for ONDE. Currently implementing some form of design methodology in ONDE
3	Policy analysis and planning officer	ONDE	Participated in the policy lab training project and attempted to implement some form of design methodology in ONDE
4	Public sector development officer	OPDC	Managed and participated in the innovation lab project for OPDC
5	Lecturer	KMUTT—King Mongkut university of technology Thonburi	Facilitated several design-led projects for the public sector
6	Deputy director	CEA	Manages the innovation direction and engages with the creative industry for CEA
7	Senior strategic planner, Creative City development department	CEA	Mid-level design manager. Participated in the first innovation lab project. Roles include managing public and private sector partnership using design methodologies
8	Policy and plan analyst	NESDC	Participated in the policy lab design thinking training project
9	Policy and plan analyst	NESDC	Participated in the policy lab design thinking training project
10	Policy and plan advisor	NESDC	Initiated the policy lab design thinking training and planned the integration of the lab with the UNDP

methodology was introduced into the Thai public sector through CEA, which also popularized service design through a "train the trainer" program, with foreign experts such as Birgit Mager (President of the Service Design Network), Marc Stickdorn and Adam Lawrence (authors of *This is Service Design Doing* (Stickdorn et al., 2018)), invited to train academics, professionals and selected government employees.

CEA's vision was to provide creative businesses with a competitive advantage and service design was viewed as a capacity building tool. With its strategy of "learning by doing," the organization invested a great deal in training by inviting service design agencies to train local creative businesses and lecturers, including the organization's employees, even before design thinking was more widely adopted in the Thai public sector in 2017. One such early project was collaborating with live/work—a service design agency based in the UK, to conduct service design research on the high-speed rail project in 2014 and to conduct training on the job for CEA's own service design.

In terms of organization strategy, CEA's vision was to build capacity for their employee's mindset, tool set, and skillset, starting with the toolset being applied to real-life projects, which helps develop the skillset and eventually the mindset of the whole organization. To reflect the vision of developing the creative economy, CEA applied human-centered design to engage with local citizens, universities, and civic groups such as chambers of commerce to understand their needs and context. This contributed to the success of CEA's UNESCO Creative City project in 2019, which won the UNESCO Creative City award.

> *I was trained to be a trainer by running my own workshop and being an instructor. When a government organization contacts CEA for capacity building, CEA will match the government needs with the CEA's internal staff. So, there is no need to hire other external experts, and at the same time, CEA staff have a chance of 'Learning by doing'.*
>
> (Senior Strategic Planner, Creative City Development Department, CEA, 24 May 2021)

One example of CEA's role in service design was its involvement with the State Railway of Thailand's tourist train project in 2018, where the organization worked as the mediator and project manager. Their approach as an expert in service design methodology was to develop a brief with SRT and source three teams of design professionals. The three teams—the feasibility team, service design team and industrial design team—worked together to create a new service model, which included a business viability study to determine the investment and ticket pricing with the design challenge question *"How might we create a service model for an impressive on train service experience?"* and framing the meaning of traveling and commuting concept (Fig. 5.2). Service design was used to conduct user research and identify new service opportunities. The insights were then fed into industrial and graphic designs of the trains based on the information from the service design and business feasibility findings.

While CEA's mandate is to improve capacity and promote design as a viable economic booster to bridge the gap between the government and industry, the limitation here is the availability of a workforce. There are many potential projects that could employ all sorts of design activities to stimulate the design industry, but one

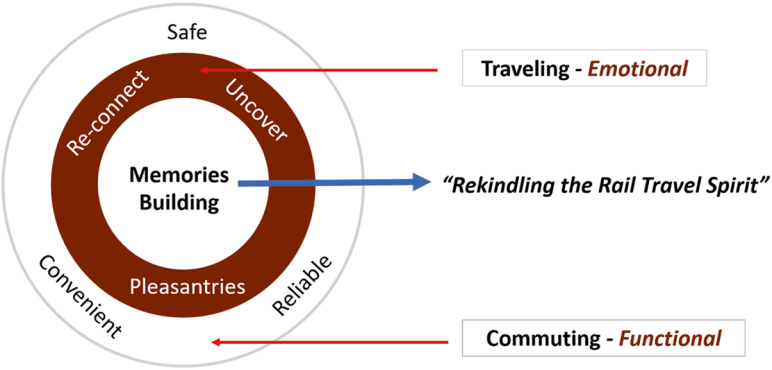

Fig. 5.2 SRT Tourist train project framing the meaning of traveling and commuting

caveat is there is not enough personnel and expertise within CEA itself to accommodate the copious number of projects. They are stretched out as it is. It is also due to the fact that service design expert employees left to start up consultancies in the private sector. CEA then needed to employ outside expertise (in some cases including those who left the organization) while operating as the project manager.

> *Due to the policy, CEA wants to develop 15 cities in one year, which is a huge project, but the staff is not enough to do the whole process. In order to deliver the project with the best quality, we need to hire external experts to help us with the project.*

(Senior Strategic Planner, Creative City Development Department, CEA, 24 May 2021)An interesting note about the CEA is that the organization is constantly exposed to various forms of creative industry knowledge and expertise both from overseas and locally, which helps with knowledge management and exposure of employees to broaden their horizons. One strength is knowledge diffusion through events and training programs that go beyond design as a development process alone. One such event is the annual Creativities Unfold Symposium, which features expert speakers from all around the world to share their knowledge and run workshops.

4.2 Case 2: Office of the Public Development Commission (OPDC)

OPDC is the organization that first implemented what is labeled as "innovation" in the public sector, as the word "development" in its name implies, with the OPDC's mission being to improve how the government works and to introduce new methods of work. The Government Innovation Lab project, which is an annual project-based initiative, employs industry experts from universities and industry to run training on-the-job projects in collaboration with different ministries. The budget allocation allows the program to change the facilitators from year to year, which helps OPDC and government employees involved with the project to learn from different perspectives and expertise from outside sources. The program's focus is not just on training in new methods of innovation but also on design research to understand target users to derive a solution. The research results were then handed over to the organization responsible for the implementation of the service. Currently, the Innovation Lab project is still ongoing but due to budget cuts, the scope and size of the project have been reduced.

The innovation management role of OPDC is also changing from project manager to facilitator or networker to bring the private sector and various disciplines—such as education, law, etc.—closer to government in order to exchange ideas and create new knowledge and opportunities, as the Public Sector Development Officer mentioned in the interview.

> *We have to change the environment in the bureaucracy. OPDC is still currently working on it by studying about the 'future government.' It's time for the government agency's role to change. From being responsible in the whole process, their role might change into a facili-*

tator or a regulator in some aspect. In a field that the government agencies are not familiar with, they will establish an extra unit to flexibly hire experts. At present, we are in the investigating and planning stage. (Public Sector Development Officer, OPDC, 16 June 2021)

4.3 Case 3: Office of the National Digital Economy and Society Commission (ONDE)

The first effort to introduce design thinking to create innovation started with the Policy Lab project run by ONDE. Between 2019 and 2020, the 10-month intensive training on the job—"Policy Lab" project for ONDE was implemented to train participating government employees in new methods of work, namely design thinking, foresight, prototyping, etc., to create innovation and the possibility of establishment of an actual physical lab. The hope was that the training program could jump-start the set-up of an official working policy lab. The curriculum heavily focused on design thinking with the use of other methods, such as scenario planning, systems thinking, and digitalization, to make the policy creation holistic. However, based on the interview with the project leader from ONDE—some of the tools used in the Policy Lab project were not compatible with the organization's mission and how the Thai government budget system works. As such, the Policy Lab was not officially set up and instead became a project-by-project program. It is now in the process of implementing a real-life project.

After the completion of the Policy Lab project, ONDE then took elements of the project, namely user research and co-creation with the target user, and incorporated them into the work process they were undertaking. In effect, a core outcome of the Policy Lab project was an Innovation Handbook. It was a compendium for government employees to use as a go-to for innovation methods. There were also three innovation pilot projects based on the needs of ONDE's clients. Clients were government organizations that ONDE had to work with to implement services and/or policies. The projects included the "future of work in government" with the aim of managing remote work as a prototype for ONDE, "agricultural digital literacy" with the aim to create a produce-to-market digital system, and a "citizen engagement platform," which is a system that invites citizens to participate in giving ideas for policy formulation.

When I was participating in the 'on-the-job training' project for the policy development unit, we had to identify the issue to formulate a policy. Therefore, we had to work with the stakeholders. At this point, there was an opportunity for a flexible workstyle, so we created a new project and engaged other people or organizations to be involved. (Policy analysis and planning officer, ONDE, 9 June 2021)

4.4 Case 4: Office of the Civil Service Commission (OCSC)

The OCSC made a preliminary foray into the innovation world by setting up an academic unit inside different bureaus, with the aim of these units being to propose new ideas and methods of work. OCSC has also set up a human resources (HR) lab to test ideas within the organization before implementing them in the public sector at large, and as part of this process, an HR regulatory sandbox is currently being conducted.

> *Before we implement the project, we should test it in our lab first. We should create an ecosystem that is suitable for testing prototypes. At present, we are in the law revision process to prepare a space for testing and creating innovation in the government sector. It is called the 'HR Regulatory Sandbox'.* (Team Leader of Development, Engagement, and People Partner Unit, OCSC, 15 June 2021)

The goal of this sandbox is to experiment with new ways of working to create innovation, spearheading the usage of co-creation and empathetic methods to understand users and create innovation. The professed goal of the OPDC is to go beyond using empathy-based methods to understand its users and make the methods and tools a skill that all civil servants must possess. An early example is the effort to build capacity for high-ranking officers in the form of Reform, Strategy, Reconciliation (RSR) program conducted in 2018. Thirty deputy provincial governors and deputy directors were trained in design thinking in the hope that the results from the projects could be implemented. The projects were on the management of waste sources, accident reduction for non-regular public buses, responsible tourism, community tourism, and low-cost construction brick manufacturing. The topics were proposed by the participants and teams were created based on individual interests.

The projects started with the participants proposing problems they were trying to solve and the teams were formed organically based on each individual's interest. A total of six projects were selected: Responsible tourism in Maya Bay, Krabi province: (i) sustainable community tourism in Ratchaburi province, (ii) front-end waste management in Lumphun province, (iii) road accident reduction for private coach operators in Songkhla province, and (iv) Self-sufficiency brick making business model. The 6 months-long projects were facilitated and coached by lecturers from Thammasat University and King Mongkut University of Technology with the aim to be able to realize the projects. The training and coaching were conducted both in the field and in centralized locations. The RSR program has now become a government unit focusing on implementing the country's 20-year strategy.

One of the projects that resulted from this program was the responsible tourism project involving the management of the famous Maya Bay tourist and environmental resources, which is now being implemented one and a half years since the training.[1] Service design and environmental protection research played an important role

[1] Mu Ko Phi Phi National Park plans to build a jetty in Maya Bay to support the soon-to-open island service and insists it will not affect the environment and the coral reef (2020, February 1). Manager Daily 360 Degree. https://mgronline.com/south/detail/9630000010458

Fig. 5.3 Designer's proposed concept rendering

in the implemented concept, which was to create a pier for user access behind the bay to protect the coral and improve the bay's vista, as shown in Fig. 5.3, and suggested tourist boat routes to other tourist sites to reduce traffic before entering the island.

The RSR capacity building scheme later became the Strategic Transformation Office (STO), a standalone organization under the direct administration of the prime minister. It aims to develop the public sector in accordance with the 20-year National Development Plan, from 2018 to 2037, set by the National Economic and Social Development Council by order of the prime minister. These plans are intended to improve Thailand socially and economically, and design thinking is a small component of the training program. Design thinking is still used in the OPDC in the Development, Engagement, and People Partner Unit by trained staff and consultants employed to help with running HR-related workshops to understand user needs such as the OPDC secondment program. Apart from user interviews, the 5 E Experience Map Framework, an experience mapping tool that consists of Entice, Enter, Engage, Exit and Extent to illustrate user's experience, was employed to understand the experience of the users to identify pain points and improve the program.

4.5 Case 5: The Office of the National Economic and Social Development Council

NESDC's first contact with design thinking occurred in 2019 when its Policy and Planning department was working with UNDP to set up the Thailand Policy Lab (TPL). A three-month workshop was conducted to build capacity and prepare NESDC's employees with new methods of work specifically using design thinking. The project was conducted by design-based lecturers from the National Institute of Development Administration (NIDA), Thammasat University, and King Monkut University of Technology (KMUTT). Approximately 30 people participated in the project. The participants were subdivided into three groups and worked on topics related to NESDC's ongoing policy projects on community development. The projects were conducted with the "learning by doing" concept. The workshop participants interviewed and observed target users in the field in the hope that the data collected could lead to real-world outcomes that could be integrated into the projects they were working on. The project generated a NESDC Policy Innovation Lab: Concept and Guideline handbook which documented the tools and the cases from the project, and some of the findings were used as research supporting ongoing policy recommendations. The Thailand Policy Lab was then officially set up in 2020 and continues to operate with the UNDP in a lead role and NESDC in a supporting role. The Policy Lab employs human-centric development principles with participatory approaches, which leads to the design thinking methodology playing a less important role in the practices of the organization. The TPL activities include projects, such as engaging youth to create policies and organizing events and conferences, to promote policy innovation awareness.

4.6 The Current Position of Service Design

In this section, we will look at how the Thai government perceives design. Design thinking is perceived as a tool to create innovation as a citizen-centric mindset with a creative problem-solving toolset guided by certain principles. Service design as a field is perceived as a set of service specific toolset which has a human-centered ethos at the heart of it with a focus on improving services. However, in the context of the Thai government's use of design, the terms "design thinking" and "service design" are often used interchangeably, without a recognition of the need to use specific service design tools such as service principles or service blueprints in the process, although the ultimate aim is to improve public services. The tools used also depend on the contractor performing the study or training.

> *Designing services is already the government's job, but may not have the suitable theory to support it.* (Team Leader of Development, Engagement, and People Partner Unit, OCSC, 15 June 2021)

The interviews have shed light on the role of design thinking in creating innovation. Design thinking at the beginning of the innovation boom around 2018, and service design more recently, were viewed as tools to create innovation in unison with other tools such as foresight, big data, and systems thinking, to name a few. Design thinking was first introduced as part of the innovation toolbox due to the customer-centric nature of the methodology and it was manifested in the first mandate for innovation in the Government 4.0 documents. Design thinking was perceived as an innovation tool to facilitate new and better ideas to solve problems, but service design was perceived as a customer-oriented study with specific tools to "improve services." In this context, it means to improve public services. The Thai government wanted to be able to create better wellbeing of citizens through public services that solve everyday problems with innovations such as using design thinking.

By its very nature and the meaning that is ascribed to it by Thai government organizations, service design may also be fundamental to moving government organization towards the design core value level. To explain why this is the author's analysis, it is necessary to first look at the meaning of service design and go back to the first means by which innovation improvement schemes took shape in the Thai government. In fact, during the first two years, the word service design did not emerge in the training programs at all; instead, design thinking was the main methodology for capacity building. In an interview, a mid-level public employee shared:

> *Some people (government employees) use the word "service design" to describe "to design a service". The starting point is not about the users' need but about the budget, the executives' need, or even just a quick fix.* (Team Leader of Development, Engagement, and People Partner Unit, OCSC, 15 June 2021)

Also, during that period, roughly between 2018–2019, Thailand did not have enough experts in service design to work in the private sector and service design was relatively new to the public sector.

In terms of the meaning of service design in this research, it is important to note that, in the Thai public sector, service design has often been viewed as a verb—"to design" services—since the purpose of the government is to provide public services to the citizens regardless of the methodology used. The use of service design as a verb can have advantages when used in government project proposals, as indicated by an interviewee on its use to secure approvals.

> *Comparing Design Thinking and Service Design, Service design is more convincing to the policymakers. Since we perceive ourselves as a service-driven country, service design can easily be endorsed, allocated budget, and implemented.* (Deputy Director, CEA, 21 February 2022).

4.7 Future Development Needs

Three of the cases presented here—namely OCSC, ONDE, and OPDC—started with the aim of establishing a kind of innovation unit, and design thinking was used as the main tool for creating innovation through various capacity-building programs due to its nature of understanding the customer's needs, which is consistent with the Thai government's vision of being citizen-centric. TCDC/CEA was the only organization that embraced design and creativity as the main focus and used it as a tool to improve the creative industry's capacity for businesses, design professionals, and academia with the help of foreign expert training and local professionals. The following are six key points of recommendation synthesized from the statements made by interviewees on how best to implement design thinking in their respective organizations. In brief, it will be necessary to:

- Create a customer-centric mindset for government employees through design capacity-building projects. Build pi-shaped people with domain expertise in their respective public administration domain and supporting expertise in design skills in line with the citizen-centric vision of the government 2.0.

  How might we make the government officers have a customer-centric mindset? I find it quite challenging. From what I have experienced, most of them tend to have a product-centric mindset and claim that the users' needs have been delivered. They don't have a chance to empathize with the customers. (Team Leader of Development, Engagement, and People Partner Unit, OCSC, 15 June 2021)

  We won't just apply our own ideas, instead, we will co-create with the locals. Listening to their needs and finding what they are good at are what we have to do in order to analyze their opportunities. After that, we discuss the ideas with them and do the on-site testing. (Senior Strategic Planner, Creative City Development Department, CEA, 24 May 2021)

- Create physical spaces to meet, discuss, and express their ideas to prototype. Creative spaces are imperative for government employees to explore and experiment with new prototype ideas. It is a safe space to try out new ideas and showcase to the world outside of how the government works.

  Government should provide a creative space for discussing and creating prototypes. The nature of government work is mostly following orders and there are a lot of procedures to follow. It is uncommon for government employees to directly tell their ideas to the executives. To support them, there should be a space to promote their creativity. (Team Leader of Development, Engagement, and People Partner Unit, OCSC, 15 June 2021)

- Demonstrate the value of innovation by informing and involving citizens about the importance of innovation in the public sector and include people as part of prototype testing.

  The government officers should have a chance to create a prototype, test it with the customers, observe what customers do and collect feedback. Testing a prototype might lead to misunderstanding due to the use of a budget derived from taxes. We don't want people to think they are lab rats. We need to inform them of the cost-effectiveness of testing prototypes. In conclusion, we need to test the prototype with the people and find a way to clarify

the misconception. We want them to be involved in the government project. (Team Leader of Development, Engagement, and People Partner Unit, OCSC, 15 June 2021)

- Creation of innovation budgetary policies supporting long-term innovation projects throughout the entire process and not just the on-the-job training research phase, but also prototype testing and feedback gathering to pilot phases to ensure appropriate outcomes before implementation.

  Our problem is we cannot push forward the prototype into the implementation phase because the project is not completely done through the whole design process. We helped them to kick-start the project, and they created the prototype. But after that, we didn't keep updated with their progress. We couldn't help them any further since we don't have the authority (law) to do anything. It's their decision whether or not to continue with the project. We have no power over their budget allocation. (Public Sector Development Officer, OPDC, 16th June 2021)

- Build innovation networks. The design process is best used in alliance with other experts. The question for public sector employees who want to adopt a design thinking mindset is: *Who can we learn from?* Designers can always be inspired by others to inject new knowledge and experience to tackle today's complex problems.

  When we are conducting field research, we have to contact local government organizations as a default in order to ask for collaboration. Local area development will not be successful if the locals reject the ideas. Other than that, we also built networks with local university professors, and local industrial and business sectors. (Senior Strategic Planner, Creative City Development Department, CEA, 24 May 2021)

- Make innovation part of work. Foster career paths. People are very dynamic socially and professionally. Increase awareness of the fact that paradigm shifts are always about people making the effort and they should be incentivized for it. Make innovation part of everyday work and start with design as a base skill to create it. People need to be incentivized to be inspired.

  In the future, what I'd like to see in the public sector is the inclusion of indicators in the work process and not only the outcome. Governments need not always be perfect. But, in reality, when we receive the budget, we have to perfectly meet the requirements, therefore it is hard to inevitably manipulate the outcome. So, instead, government organizations should focus on the work process. That will motivate me and make me work with citizens better. (Policy Analysis and Planning Officer, ONDE, 9 June 2021)

5 Discussion

5.1 Various Levels of Thai Government's Engagement with Design

The interview findings and the author's observations as a practitioner identified various foci of the Thai government organizations when adopting design. For example, they use design to create outcomes through projects, build their internal innovation capabilities, embed design within their organizational process and culture, or

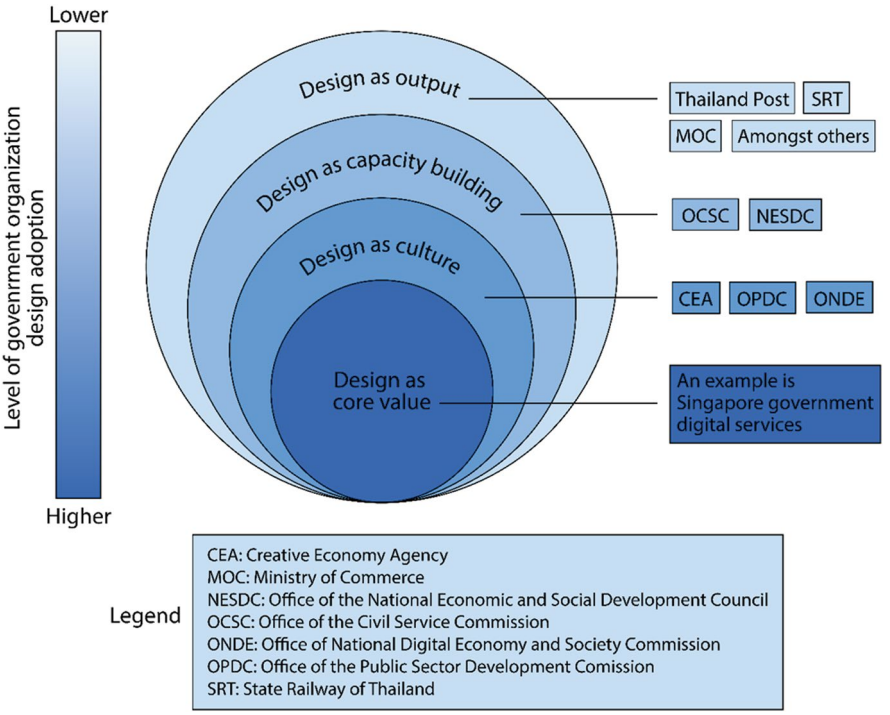

Fig. 5.4 Levels of Thai government organizations' use of design

place design as their core values. Each focus indicates a different level of design adoption, and the different Thai government organizations can be mapped along different levels (Fig. 5.4).

- **Level 1. Design as output:** the use of design employed by public institutions to generate solutions such as services, artifacts, or other public goods such as public parks and buildings, communication design for implementation of government policies, and design work is performed by contracting industry professionals to conduct the research and produce outcomes. This use of design is a practice adopted by many government organizations. Some examples are CEA's tourist train project with the State Railway of Thailand (SRT), Thailand Post's employment of a service design consultant to redesign their services and train front-line employees, and the Ministry of Commerce's BIG toy design innovation workshop for interested persons employment of lecturers and industry experts to run a series of toy design workshops using design thinking. At this level, this type of design as a service helps public organizations to contribute to the design industry and learn to work with designers as design project managers. This is the base level in design adoption.
- **Level 2. Design as capacity building:** the use of design methods to improve innovation capability. This is done through various training schemes through

workshops using design thinking and service design methodologies, with the aim of improving public service design and policy making. Capacity-building programs are conducted in the beginning with the help of foreign experts and later using local academics. Training programs come in various sizes; from 3-day workshops to policy and innovation lab projects that could run for 10 months. This type of implementation needs consistency in budgetary and organizational policies to incorporate design as part of work culture or core values. At this level, the organization brings design into the organization and seeks to improve the way they work through lectures, workshops, and training programs with the goal to create innovation.

- **Level 3. Design as culture:** the implementation of design values and tools in the work culture. This is carried out by individual public employees who are trained in design thinking and service design methods. While it does not mean that these organizations fully embrace the use of designer's ethos in the work rule book, design methods are introduced and implemented in work situations by a group of mid-level individuals that believe in the philosophy. They do so by applying the methodology in their respective units and implementing it when working with other organizations to introduce design thinking and create a culture of human-centered, design-driven public services and policies. The weakness is that if and or when such an individual leaves the organization, the continuity of the designer's ethos will fade and eventually stop. Organizations that are active in this domain are OCSC and CEA, where a small group of design thinking and service design trained personnel with design mindsets carry out projects with the users as a starting point. So far, we can gauge how these organizations have established design thinking led culture by looking at the number of projects design academics have been involved in consulting and training those public employees carrying out the design-led projects. These initiatives include a project called Meaningful Internship, Coaching Journey and Quality Work-Life Improvement for smaller units in OCSC by implementing user research to understand public employee's experiences.
- **Level 4. Design as core value:** when a public organization embraces design as the core practice and incorporates it into their policy, work rules, and directives to be implemented in public services and policies by incorporating design thinking, service design, and interaction design principles, into organizational work mantra which also lead to a concrete design-led culture. While an example of this type of design adoption for the public sector is not apparent in Thailand, a close example can be found in the Singapore Government Digital Services, where the output is clearly based on digital services and employees have design skills.

While this framework is in line with the three steps in "Public Sector Design Ladder" by the UK Design Council (2013), namely, *design for discrete problems*, *design as capability*, and *design for policy*, the four levels identified by the Thai government emphasize the engagement of design into the organizational culture and eventually

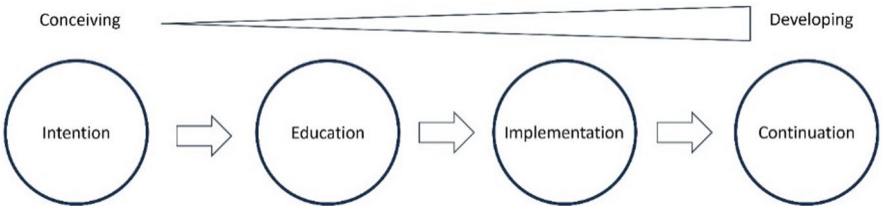

Fig. 5.5 Four strategies of the Thai government to engage design in its process

a core value. In the Thai government, the design adoption starts with design practitioners as external vendors and public employees as project managers to learn how design professionals conduct design research and tool usage. When a government organization is close to or at the "design as core value" level, this means that the designer's ethos has been adopted into the policy or work process.

The integration of design needs to be compatible with the organization's mission and purpose. The cases and interview findings in this study also showed the Thai government organizations' varying strategies to engage design, depending on their purposes. Four strategies and corresponding questions were identified as follows (Fig. 5.5):

- **Intention:** When design was first introduced to the organization, what was the intended purpose of the organization in using design as a tool to innovate?
- **Education:** After the introduction, how would the government employees gain essential knowledge?
- **Implementation:** After obtaining the knowledge, how would it be applied?
- **Continuation:** How would the use of design be sustained afterwards?

The four strategies of engaging design in an organization's process can be mapped with the four levels of design adoption introduced in Fig. 5.4. This mapping presents a framework that can diagnose or plan for the Thai government organization's strategies according to their focus when using design (see Table 5.3). This framework suggests that if the organization only views design as output, it has not fully progressed through the four strategies. On the other hand, the organization that aims to fully adopt design as its core value should strategize for "continuation." Table 5.3 shows how this framework can provide organizations with a tool to understand the stages they may be at in terms of their design adoption, and also to help plan how to advance their innovation strategy. To illustrate this, the cases of SRT (at the level of "design as output"), OCSC (at the level of "design as capacity building"), and CEA (at the level of "design as culture") are mapped in Table 5.3.

Table 5.3 Integrated matrix of the Thai government's design adoption and organizational strategies

	Intention	Education	Implementation	Continuation
Level 1 output	The aim was to produce results and not intended to adopt or build capacity for employees. *No intention of adoption.* *SRT*: SRT had a project to rejuvenate old carriages received from Japan to create a new tourist train. They then worked with TCDC. Service design-driven methodology was introduced along with product design to conduct the research	No formal design thinking training. Learning on the job. *SRT*: SRT's roles were advisory, which includes project management, interviews, and participation in the idea generation process	The implementation of design thinking is focused on the results of the project. *SRT*: The use of design thinking methodology was limited to the design consultants	The continual use of design thinking depends on the type of project and budget. *SRT*: No design thinking attempts were used in the organization
Level 2 capacity building	Design thinking was introduced as part of capacity-building policy efforts to create public service innovation. *Adoption depending on design thinking experiment result.* *OCSC*: Their introduction to design thinking was through the UNDP-OCSC's "government innovation lab" a pilot effort with participating public organizations acting as hosts to create service innovation to inspire other government organizations	Design thinking capacity building is carried out by practitioners through workshops attached to a project—*"Learning by doing"* *OCSC*: The role of the employees was to help facilitate the recruitment of employees to innovation teams (*I-teams*) to be trained in design thinking on the job with university lecturers and design professionals as facilitators	Design thinking is used as an experimentation tool as proof of concept. *OCSC*: Its role was to facilitate and manage design Thinking innovation project as an incubator through design professional training.	Continuation depends on the type of project, methodology, skill, and budget. *OCSC*: With budgetary constraints, their role was limited to using design thinking as a capacity-building tool. The project then depends on budgetary allowance and the respective organization's discretion

(continued)

Table 5.3 (continued)

	Intention	Education	Implementation	Continuation
Level 3 culture	The design process is intended to be a part of the organization's work methods. Design thinking is later adopted. *CEA*: Design thinking was introduced as part of ongoing creative capacity building for employees	Professionals with design thinking capacity are employed as trainers as part of continuous learning from various creative sources and trends to improve creative capacity. *This level of design adoption is not found within the Thai government*	Design methods are used in projects with trained professionals as mentors and employees carrying out their implementation. *This level of design adoption is not found within the Thai government*	New units within the organization are set up and design thinking is used in the practice of project work. *This level of design adoption is not found within the Thai government*
Level 4 Core value	Design research is part of organizational policy and one of the main methodologies used to conduct projects. *This level of design adoption is not found within the Thai government*	People with design research and other compatible capacities are employed to carry out projects. *This level of design adoption is not found within the Thai government*	Design research is used as the organization's default method of work, along with other methodologies and technology, to conduct projects. *This level of design adoption is not found within the Thai government*	Design thinking as a methodology is continuously used. The term is interchangeably used with citizen-centricity. The designer's ethos is the underlying mantra to conduct projects. *This level of design adoption is not found within the Thai government*

5.2 *Towards a Sustainable Adoption of Design in the Thai Government*

This chapter is intended to understand the factors that could facilitate the sustainable adoption of design-led innovation in the Thai government. The research question is "What are the factors that affect the adoption and implementation of design in the Thai government?"

The way governments work is closely related to the politics of the administrative governments at the time. In Thailand, the political winds shift rapidly (i.e., every 3 to 4 years) and the country is plagued by coup d'état which has negatively impacted the path of innovation from conceptualizing to funding, with inconsistencies arising in budgets, budget allocation, and policy support to see the whole project through.

Design is a powerful tool to create public service innovation and it needs a management-led approach to adoption by making innovation a policy. Adopting

designer's ethos, structure, and mindset in the public sector is crucial to create innovation, but it needs an influential figure to support and enable strategic design innovation policy in the government. Thailand has had several influential figures with a strategic design-driven mindset; however, political complexities have disrupted the continuity in implementing creative and design strategies in government. The question here is whether it is possible to sustain a culture and policy of using design without an influential figure.

Design needs the expertise to carry out the process and iterate to innovate. The Thai government needs to look at design as a skill that is needed in the public sector and hire product designers, service designers, user experience and interaction designers at different levels, instead of merely training public employees.

In addition, budgets need to sustain the full design and implementation process. While there are budgets to conduct research and propose solutions, it should also provide resources to experiment and implement prototypes to gauge the impact of the designed solution. The budgetary system needs to be revisited and an innovation fund should be established that is not tied to the national budget regulation constraints by exploring other sources of funding, such as donations from foreign governments or surplus budgets that ministries return to the central government when budgets are not fully used.

Lastly, for sustainable adoption and impact of design, results need to go beyond reports. One important challenge in design-led innovation projects is to implement the findings of the project beyond reports and handbooks. It is necessary to change the mindset that these projects end when a report is submitted as it often results in only parts of the project implemented. From the organization's perspective, the credit for innovation is then rendered unapparent and design-led innovation loses its significance.

5.3 A Call for the Big Three Shifts

The solution to the innovation implementation challenge in the Thai public sector can be found at the intersection of "three shifts" from hierarchical to collaborating, peripheral to structural, and administrating to designing (see Fig. 5.6).

The first challenge concerns with a shift from a peripheral level to a structural level. While there are indications that the Thai government takes innovation to improve public services and policies seriously, a large-scale effort is required to mobilize Thailand's government sector, with more than 3,1 99,106[2] personnel, in order to create innovation at such a scale. Decentralization, localization, and design thinking training could be the answer as local bureaucrats know the local conditions and can connect with people better. However, the current public sector structure is

[2] Public sector workforce in Thailand 2022 (Nonthaburi, Thailand: OCSC, 2022).

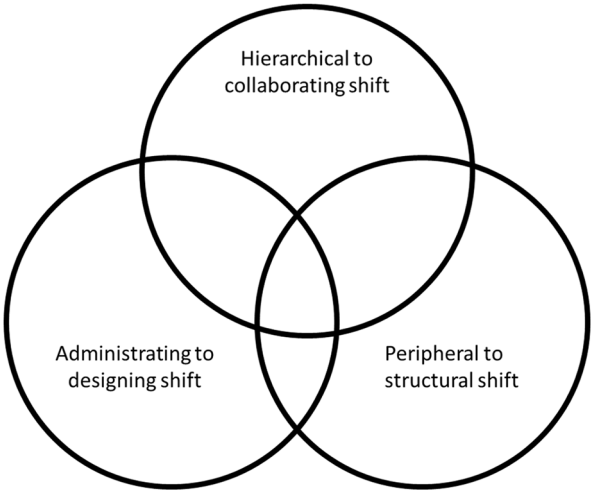

Fig. 5.6 The big three shifts

not geared towards this working style. Therefore, policies outlining the implementation of innovation need to be in place.

The second challenge is the shift from hierarchical to collaborative work styles vertically and laterally. For example, the policy and plan advisor from NESDC highlighted their current working style: "*In the past, policy formulation was done through studies of the issues or in response to citizens' problems. In recent times, policies have been formulated based on bureaucratic vision or inspired by successful policies from overseas"* (Policy and Plan Advisor, NESDC 19 December 2018*).* Government organizations can collaborate with other government units and sectors to create innovation for the citizens. Design thinking and service design could play a role by making the policy formulation process more citizen-centric by understanding their life experiences and expectations rather than just relying on technology or rules, regulation, boundaries, and bureaucrats' visions alone. Also, a culture of openness and the leadership's commitment to gaining a deeper understanding of the methods and tools play an important role in sustainably implementing not just design projects, but innovation culture as a whole in the government.

The third challenge is shifting the role of the public sector from administrating to designing, which requires improvements of the mindset, toolset, and skillset from the current to a more generative work style based on autonomy and heuristic on-the-job experiences. Such shifts would be an important prerequisite to achieving the fourth level of "design as core value." The government needs to treat design as a skill necessary for innovation by hiring designers to work in government. To do this, organizations with the intention to introduce design to their work culture, must enact a design policy that focuses on building design competency with capacity building and support teams coaching and monitoring their progress. Capacity building plans need to be conducted in stages to introduce and ease public employees into the new work style without compromising the service delivery. These stages can be described as follows:

- Base building: This is the relationship and dress rehearsal stage with activities that are focused more on building creativity, empathy, divergent thinking, prototyping, and other skills that are the building blocks of design.
- Doing with: This involves training by design professionals introducing and working with existing projects to ensure there are supporting budgets for implementation.
- Doing without: This is when the design training team departs and lets the local team carry out the tools themselves but with supervision and consultation.

For design-based competency to be implemented in one way or another, it needs to prove its value in terms of the change and impact it will bring to the country and its citizens. The timeframe in which Thailand's government will be able to move to the fourth stage, design as core value, is unclear as Thailand is still at the early stages of learning its way through this innovation journey. As much as a collaborative style of work is preferred to design and innovate, the Thai experience suggests that it also hinges significantly on an influential figure to be able to create the "shift." It is hoped that such figures will be able to lead the "shift" in the long term and not be blown away by changing political winds.

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Chapter 6
Service Design for Innovating Hospitality Business in Japan

Chihiro Sato

Abstract This research elaborates the challenges of Japanese traditional inns known as *ryokan* to shift from traditional hospitality practices, where the author worked closely for several years with *Ibusuki Hakusuikan*, a luxurious ryokan located in southern Japan. The research aimed to co-create service together with various stakeholders of the ryokan and the entire service ecosystem of the region located from a macro lense. This article articulates a service design integrating last-mile mobility for both guests and the employees of the ryokan and contributes in a beneficial way to each actor in the landscape, not just towards themselves but also in a larger scope for further business growth in the hospitality sector. Reflecting on qualitative data such as ethnographies, diaries, interviews, and user study analysis, it investigates how the service design journey went, and concludes by giving practical recommendations as design principles for academics and practitioners who plan to co-create value in similar projects dealing with shifts from traditional customs.

Keywords Service design · Hospitality · Japan · Service ecosystems · Ryokan · Mobility service · Cocreation

1 Introduction

This chapter illustrates a case study of service design tackling the wicked problem of shifting from traditional customs in Japan (Schaede, 2020), with the spotlight on the hospitality sector. The author worked closely together with a *ryokan*—traditional Japanese inns with historical origins quite different from the western hotels (Guichard-Anguis, 2008)—in southern Japan from 2015 to 2019. The focus in this research is on the culture of *omotenashi*—a concept of hospitality which looks after guests wholeheartedly (Guichard-Anguis, 2008), which refers not only the physical

C. Sato (✉)
Keio University Graduate School of Media Design, Yokohama, Japan
e-mail: chihiro@kmd.keio.ac.jp

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act of serving the guests but also the way, the spirit, and the philosophy of always providing better service (Ikeda, 2013). This study elaborates on the issue of how ryokans can shift from traditional hospitality practices and how the management can redesign their service to enhance the stay. One of the pillar service design attempts was integrating personal mobility for the last-mile, which we particularly articulate in this writing.

The research draws attention to Ibusuki (approx. 44,000 inhabitants in 149 square km) in Kagoshima prefecture—the very southern tip of Japan's southern island Kyushu—well-known for the beautiful sea and hot springs called *onsens*. Most people living in Japan have had the experience of staying overnight in a ryokan with an onsen where you bathe naked with unknown people of the same gender (Guichard-Anguis, 2005).

The author worked together with *Ibusuki Hakusuikan* (see Fig. 6.1), a ryokan that has welcomed guests from all over Japan for more than half a century. In the "2020 Ryokan Rankings by professionals" (Kankokeizai Newspaper, 2021), they ranked first in divisions of service level and architectural environment, and second overall in Japan, but the challenge continues to be to reach a larger audience worldwide. Ibusuki Hakusuikan strongly pointed out the necessity of ryokans to provoke a cultural shift from traditional human-touch oriented service to innovative technology-supported service, for their sustainable management. Traditional human-touch oriented Japanese hospitality provides great *omotenashi* for the guests, however, there are major challenges in terms of operation management and business profitability. Statistics show the number of ryokans had been drastically decreasing even before the pandemic—from 77,269 ryokans in 1989 to only 38,622 remaining as of 2017—which indicates more than 50% of ryokans have vanished in three decades (Japan Ministry of Health, Labour, and Welfare, 2019). In the hospitality industry in general, where labor productivity is only 60% of that of the

Fig. 6.1 Ibusuki Hakusuikan ryokan, located in the southern tip of Japan. Most of the land on the left side of this figure is their property

manufacturing sector, labor shortage and its productivity are the most cited dilemmas (Japan Ministry of Finance, 2017). The CEO of Ibusuki Hakusuikan stated that it is worth the investment if it could address this concern, as the labor costs are too high to continue the current procedures. The challenge is how to balance the high service quality and appropriate cost, a problem that is almost always insoluble.

To face this issue without simply axing or downsizing, this research applys the service-dominant logic perspective (Vargo & Lusch, 2004) as well as participatory design perspective of care (de La Bellacasa, 2017), relationality (Light & Akama, 2014), and community-based approaches (Le Dantec & Fox, 2015). The customer-centric views on value creation are effective; however, simply shifting the focus from a firm to a customer still limits the understanding of the value creation process, and an unbalanced value perspective is prevalent (Vargo et al., 2017). During the four-year study, the author aimed to create productive partnerships from a macro lense in the community setting surrounding ryokan—the various actors exchanging service with guests and employees—and the entire service ecosystem (Lusch & Vargo, 2014).

To understand the industry landscape and build rapport amongst the project team, the first year began with monthly conference-style talks to share the problems facing the service industry. The next 2 years involved a series of ethnographic research on a broad range of people working in the area to uncover the diverse goals of actors holding both operant and operand resources in the city of Ibusuki. By the end of the third year, the core value of tourism in Ibusuki was confirmed as "to discover your favorites on your own". Then, in the final year, the team developed a personal mobility service and conducted initial user studies together with guests and employees. Figure 6.2 shows the basic flow of the mobility service.

This chapter tackles how service design can contribute to the hospitality sector for its further business growth being beneficial for every actor in the landscape, through a design case of a last-mile mobility service and its ecosystem.

Fig. 6.2 Basic flow of the mobility service. An autonomous personal mobility vehicle will come pick guests up and drive them to their destination on their own

2 Related Works

2.1 Japanese Industrial Landscape of Hospitality

As revealed in 1979's "Japan as Number One", Japan's rapid economic in the latter half of the twentieth century was firmly supported by the main roots of the manufacturing industry (Vogel, 1979). However, the economic stagnation era in 1990's broadly impacted the entire Japanese economy's low productivity growth rate (Hayashi & Prescott, 2002). In 2016, the government raised the "Japan Revitalization Strategy" which pillared 10 principle projects cultivating new promising markets—IoT/AI, healthcare, environmental energy, sports, housing, service industry, micro-enterprises, agriculture/forestry/fishery, tourism, and consumer sentiment (Prime Minister of Japan and His Cabinet, 2016). The service industry—along with tourism—received a spotlight especially on how to stimulate the growth of industries and raise personnel willing to work.

The Japanese service industry has a hand-in-glove relationship with the term *omotenashi*. Morishita (2016) states *omotenashi* is a high-quality service that is created when customers and providers understand and share Japanese custom together. Ikeda (2013) lists the following as important elements of omotenashi: freeing the mindset from economic rationalization such as eliminating waste, irregularity, and unreasonability; reconsidering the high productivity by uniforming manuals, standardization, mechanization, and automation; emphasizing the experience rather than possessing goods/materials; and reconstructing lost human relations. According to reviews, the courtesy, modesty, and sophistication that underlie omotenashi have embodied a mentality without expection of rewards from other (Morishita & Kosaka, 2017). Amongst the various service businesses, the hospitality sector has been strongly influenced of this term, with its roots going back centuries.

Travel in the Edo-period Japan (seventeenth-nineteenth century) was strictly limited but executed basically by foot: pilgrimage and hot-springs bathing for cure were the most common reasons. Inns stood along the network of the walkable roads, which are the ancestors of the ryokans today. Digging deeper into one of the three Guichard-Anguis' ryokan explanations "the culture of hospitality", the ryokans these days are spotlighted based on two criteria: exposure to seasonal nature, and the personalized hospitality of the ryokan managers—the woman patron in charge of the entire management called *okami*. The okami, wearing kimono and greeting guests with cultural traditions, serve as intermediaries between the local and the outside, the past and the present, the nature and the civilized. The okami's embodied traditions and spirit characterizes politeness, a keen sense of hospitality, influences the well-being of the guests tremendously. (Guichard-Anguis, 2008).

However, nowadays, the symbol of hospitality is suffering from economic difficulties. A case study in Atami area indicated the lack of balance between preserving historical aspects and creating new models for the future (Guichard-Anguis, 2007). Facing such struggle, Kurokawa area's ryokan network takes the macro-perspective of every ryokan as "entire town is one accommodation, the streets are corridors, and

the ryokans are guestrooms" thus share their knowledge within the ryokan okami network (Morishita, 2016). Research on Kagaya—ranked number one on the "2020 Ryokan Rankings by professionals" indicated earlier (Ibusuki Hakusuikan is ranked second)—reveals both the tacit human-touch knowledge and the system supporting the employees to prevent fatigue (Morishita & Kosaka, 2017).

This research with Ibusuki Hakusukan ryokan takes into account the above-mentioned lessons learned. The research team challenged how the up-to-date technologies can enhance the employees to work on issues that require the human-touch, by preserving the historical aspects but aiming for the current-era lifestyle, and most importantly taking the macro-perspective of seeing that the "entire town is one accommodation". The next section reviews how that macro-perspective can be obtained; through designing service ecosystems.

2.2 Service Ecosystems and Hospitality

Rooting in the service-dominant logic perspective, service ecosystems were coined by Vargo et al. as "a spontaneously sensing and responding spatial and temporal structure of largely loosely coupled, value-proposing social and economic actors interacting through institutions, technology, and language to (1) co-produce service offerings, (2) engage in mutual service provision, and (3) co-create value" (Vargo & Lusch, 2011). It is also minted later as "a relatively self-contained, self-adjusting system of resource-integrating actors that are connected by shared institutional logics and mutual value creation through service exchange" (Lusch & Vargo, 2014). As service is defined as an application of specialized competences such as knowledge and skills through deeds, processes, and performances for the benefit of another entity or the entity itself, being beneficial to one another can be done by a series of service exchanges which form a network rather than vertical or horizontal chains (Vargo & Lusch, 2004).

The idea of networks rather than the chain perspective is not a new concept even in the field of supply chain management (Lambert et al., 1998) or marketing (Achrol, 1991). Zooming out of such dyadic exchange perspective can offer a more unified perspective of the society (Layton, 2011), which can contribute to building "weak ties" (Granovetter, 1973) within your community—such as job searching (Brown & Konrad, 2001), neighborhood identification (Greenbaum, 1982), or boosting creativity (Baer, 2010). This "fruitful micro-macro bridge" network of weak ties is a combination of the amount of time, the emotional intensity, the intimacy, and the reciprocal services (Granovetter, 1973). Reciprocity is the key here; since humans rely on one another through various voluntary exchanges of applied skills and competences, the continuation of such exchange is how networks are formed (Lusch & Vargo, 2014).

This foundational concept of service ecosystems has been challenged to apply to the fields of logistics (Randall et al., 2010), information technology (Yan et al., 2010), and most importantly for this paper, hospitality management (Li & Petrick, 2008).

Researchers in the field of tourism management clearly stated that the tourism sector is increasingly based around customer experience and "such suppliers and consumers interact more closely together at all stages of their relationship", therefore have examined the multi-actor processes involved in co-creating the visitor experience (Shaw et al., 2011).

Service-dominant logic emphasizes the actor-to-actor and not customers or suppliers; the so-called customers can have three key roles—as users, buyers, and payers (Sheth & Mittal, 2004)—which apply depending on the context. Michel et al. (2008) indicated that when looking from the service-dominant perspective, the users' role refers to value-in-use, payers' role to value-in-exchange, and buyers' role to bridge value-in-use and value-in-exchange. Shaw et al. (2011) continues the discussion by reflecting this to several case studies of the hospitality industry centering the producers' side rather than the customer side due to the in-depth empirical information about the activities of co-creation.

This research also takes a similar approach starting with a focus on the employee side of the ryokan and goes in-depth through interviews and ethnographies. The author challenged to take advantage of the weak ties that the ryokan possessed; the owner and the previous generation has supported a wide variety of local industries within the prefecture for decades. It also considers the service ecosystem elements of self-contained, self-adjusting resource integrating actors exchanging service to mutually cocreate value by proposing an apparatus supporting the mobility—a common denominator for every actor in this Kagoshima area.

2.3 Mobility Service for Hospitality

The paradigm Mobility-as-a-Service (MaaS) has aimed to integrate and customize the most suitable transport solution for their users and encouraged them to receive adequate information, book, and pay for their choice with platforms using emerging technologies (Mladenović, 2021). The integration also regards political, operational, informational, and transactional aspects; therefore, it foresees radical changes in business landscapes thus new actors emerge and play the leading role taking advantage of this flexibility and dynamism (Bucchiarone et al., 2021a, b). This research also rides this wave and captures the ryokan and its ecosystem dynamically by designing a mobility service using emerging technologies, specifically for the human ride sharing rather than artifacts delivery (Qi et al., 2018).

The last-mile (or first-mile) mobility is an issue that has emerged as MaaS spread; moving humans and goods to and from the key nodes of existing public transport networks is the challenge from both a technology and costs perspective (Gurumurthy et al., 2020). Given that public transportation key nodes may be unavailable especially for certain demographic groups—such as school children, seniors, and people with certain physical disabilities—the most likely substitutes are either walking, taking a taxi, or driving your own private vehicle (Wang & Odoni, 2016). They also state that tackling this issue require both the supplier and the demander

perspectives; demand side estimating demographic characteristics such as nature of trip, level of service, or cost, and supply side concerning stochastic travel times, batch arrivals or prospective passengers, partitioning demands, routing, queueing, and staffing (Wang & Odoni, 2016).

This wicked problem is confronted in engineering fields by autonomous vehicles ridesharing. A case study in Singapore suggested the passengers submitting travel requests in advance from their homes to stations, then operators would dispatch autonomous vehicles and arrange ridesharing subject to vehicle capacity, travel time, accessibility constraints (Chen et al., 2020). Another case study in London used an automated vehicle as an airport transit shuttle and revealed what the expectations prior, during, and posterior to the rides are, and how the trust or relationships to the automated vehicles could be built (Paddeu et al., 2020). Others have challenged autonomous shuttles are case studies that investigated the safeness and secureness of passenger's feelings by riding a last-mile automated minibus shuttle service during the four-month study in Tallinn (Soe & Müür, 2020), and a study exploring how shared electric autonomous shuttles can coordinate with existing public transportation as a city fabric in Trento (Bucchaiarone et al., 2021a).

This research challenges both goods delivery and human rideshare within the ryokan resort town and explore the possibilities of autonomous vehicles being applied. The research team could not hold a long-term study however builds on other studies on how the passenger's perceptions of safeness and secureness are and incorporate into our service design. The following section will reveal what and how our last-mile mobility service has been designed.

3 Service Design

3.1 Research Setting

The ryokan *Ibusuki Hakusuikan* is located on the southern tip of Japan's main islands. Ibusuki-city is rich in natural resources, including mountains, beaches, farmland, harbors, and wildlife, and is particularly well-known for its sand bath onsen.[1] It takes 2 h by plane from major Asian cities such as Taipei, Shanghai, Seoul, and Tokyo to Kagoshima-city, but another 2 h by car is required to Ibusuki-city. According to the Ibusuki-city mobility guide,[2] getting around the city is basically by car, and public transportation is mainly by bus lines and shared taxi. Considering that the entire Ibusuki-city covers an area of 149 square km, this is not an area of public transportation friendliness.

[1] Ibusuki City Hall Tourism Division, Ibusuki City Map. last accessed 2021/08/21. https://www.ibusuki.or.jp/info/pamphlet/doc/mape.pdf

[2] Ibusuki Mobility Guide (in Japanese) updated May 7, 2021. Last accessed 2021/08/21. https://www.city.ibusuki.lg.jp/main/machi/syakaikiban/kotsu/page024636.html

According to the founder's autobiographical book (Shimotakehara, 2000), this ryokan initially started in Kagoshima-city but settled in the current location in 1960. Their initial concept was a Hawaiian style hotel—back in those days, the Hawaiian Islands were the most aspired area of honeymoon for the Japanese new-wed couples, however the high JPY-USD currency rate enabled only the high-net-worth to afford the trip. Hakusuikan situated themselves as an aspirational brand (Saviolo & Marazza, 2012) and took the imitation tourism strategy (Aarstad et al., 2018) which opened doors to the middle-class income groups. This strategy was successful until the Bretton Woods system of fixed exchange rate collapsed in 1973 and the *real* Hawaii became more affordable. Therefore, they decided to shift their entire concept to suit the upcoming intellectual and mature society, providing authentic Japanese style service and showcasing traditional regional culture, which continues to be their style today.

Within their territory of 165,000 square meters, they use 3300 square meters to offer a "theme-park-like" natural hot springs called Genroku-buro[3]. They also offer a museum hall Denshokan[4], a two-story high multipurpose event hall exhibiting various artwork from pottery to paintings related to the area from the seventeenth century to the nineteenth century, which can turn into a concert hall or a wedding banquet hall. They also have the traditional Japanese style banquet rooms with tatamis, four different Japanese high-class restaurants, one Italian restaurant, three different bars including a karaoke bar, two cafes including a pool-side bar, and a ramen stand.[5] All these elements have contributed to ranking second overall on the "2020 Ryokan Rankings by professionals", as stated earlier in this paper.

3.2 Issues Concerned

The experience of staying at a ryokan have a generalized pattern, which Guichard-Anguis clearly indicated in his book chapter as follows: "*Visitors check in between three and four o'clock in the afternoon. Shoes are deposited in the entrance, to be found again when leaving the inn. A woman clad in a kimono leads the visitors to their room, where she serves tea and sweets, while explaining the schedule of their one-night stay, which is usual. Visitors are invited to change from their everyday clothes and dress in the cotton kimono (yukata) prepared for them, slip into clogs and have a bath in one of the inside or outside baths (men's and women's turns being clearly stated at this first meeting). While the visitors are away, the room is prepared for dinner, which is usually served between six and eight in the evening, but preferably around six, according to most of the ryokan managers. The number*

[3] Ibusuki Hakusuikan website, About Spas. Last accessed 2021/08/21. http://www.hakusuikan.co.jp/hotspa/genroku.html

[4] Denshokan website. Last accessed 2021/08/21. http://www.satsuma-denshokan.com/

[5] Ibusuki Hakusuikan website, About Facilities. Last accessed 2021/08/21. http://www.hakusuikan.co.jp/facilities/index.html

of small dishes and the sake or beer soon have an influence on the visitors, who tend not to stay awake late. A second bath might be encouraged while the room is cleaned after dinner and the futon spread on the tatami. Visitors can enjoy an early bath before or after breakfast, which is usually served around eight o'clock in the morning in their room or in a dining room, and check-out is completed before ten. Unlike baths, meals have to be taken at a given time, which leaves little freedom to the visitors. The number of dishes and the particularity of Japanese cuisine may help in understanding this unbreakable rule. On the contrary, visitors get more freedom with the choice of baths, their number and duration." (Guichard-Anguis, 2008). This human-touch is what characterizes the genuine hospitality; however, this requires a lot of human labor behind the scenes.

This labor cost leads an imbalance in revenue management. Since the 1980's, revenue management in the hospitality and tourism industry has been dominated by yield management, which began in the airline industry in the 1970's with the goal of maximizing the yield per available seat in the cabin (Cross et al., 2011). Yield in the hospitality sector can be conceptualized as revenue per available inventory or "the process of allocating the right type of capacity to the right kind of customer at the right price so as to maximize revenue or yield" quickly and accurately (Kimes, 1989). Ideally, there should be a high occupancy rate per capacity, since neither the vacant airline seats nor hotel rooms lead to profits after the doors are closed. This easily leads to pricing strategy competition, a major concern in hospitality revenue management studies (Guillet & Mohammed, 2015); the lower the price, the smaller the profit. Since the human-touch in ryokan styles necessitate human labor, the more rooms added, the higher the labor cost, however if the profit margin is low, the cost-benefit balance will not be achieved.

A way to avoid pricing competition in an increasingly globalized market is through destination marketing, well acknowledged as a pillar of the future growth and sustainability for tourism destinations (Pike & Page, 2014). While adjectives such as "cultural", "historic", "gastronomic", or "night-life" has been the focus of city tourism (Ashworth & Page, 2011), nature-based tourism has emerged in rural and peripheral areas (Bell et al., 2009). Enjoying beautiful landscapes is one of the key motivations for nature-based tourism (Tyrväinen et al., 2009; Tyrväinen et al., 2014), therefore Hakusuikan's seaside location and natural hot springs provide a significant advantage in marketing itself as a nature-based destination. Hakusuikan considered strategically building its brand as a destination for its customers by meeting the demands of the current-day customers with diverse desires. Studies have identified that just by looking at the elderly population in Japan, they have become very active in participating in destination activities, citing outstanding scenery, historical or archaeological places, and good weather as top priorities (You & O'leary, 2000).

However, this is easier said than done, as group travel was the norm in Japan in the latter half of the twentieth century (Carlile, 1996), the packaged tour let the cohort to hop from one area to another, staying one night in one place and moving on to the next, on relatively short trips. Ryokans have adapted to this travel style and have offered accommodation plans at a fixed rate of "one night, one dinner, one

breakfast" per guest. In case of consecutive nights, the chances of being served a similar meal repeatedly for both dinner and breakfast are high. Even on packaged tours, tourists still desire to escape the stress of daily life, relax, refresh, and reconnect to nature (Watkins & Gnoth, 2011). They should not get bored of the same environment, but have a well-being stay in various aspects such as food, interior, exterior, landscapes, excursions, recreation, or cultural attractions.

Although tourism and well-being have had a stronger relationship since its first concerted initiative two decades ago (Chon, 1999), tourism operators have been designing travel programs and services that allow tourists to feel they are escaping from their daily routine and contribute to their well-being in various spheres of life ranging from social, culture, family, and work life (Sirgy et al., 2011). This research also discusses how tourism can contribute to the well-being of not only the tourists but also the local host community (Uysal et al., 2016) and motivates frontline employees supporting the ryokan with autonomy and task significance (Wen et al., 2017). The following section identifies the actors and available resources to integrate into an ecosystem.

3.3 Identifying Resources in the Field

The challenge on how to balance high service quality and adequate cost without simply downsizing or overworking employees begins with identifying the resources available. As the economist Erich Zimmermann famously said, "resources are not; they become" (Zimmermann, 1951), resources are neither fixed nor finite, therefore it is the responsibility of institutionalists to take care of the process of becoming, with novel combinations of existing devices or materials (De Gregori, 1987). Value co-creation occurs by integrating the resources held by actors according to their expectations, needs, and capabilities (Gummesson & Mele, 2010). The actors strive to integrate and "match" each other's resources to obtain a greater potential value (Andreu et al., 2010). Therefore, the research team spent a lot of time and effort—more than half of the entire four-year journey—to understand the actors and the resources in the research field.

As previous research has acknowledged (Le Dantec & Fox, 2015), approaching the field to develop relationships and demonstrate commitments was the first step in building productive partnerships in the community setting. The first year of building rapport to identify settings was endured through a series of conference-style monthly talks that shared current concerns of the service industry. The Hakusuikan CEO revealed a series of talks including the historical background (refer to Sect. 3.1), the recent issues of concern in the industry (refer to Sect. 3.2), and his strategy at the time of collaborating with *Medipolis Proton Therapy and Research Institute*[6] to

[6] Medipolis Proton Therapy and Research Institute website. Last accessed 2021/08/21. http://medipolis-ptrc.org/english/

conceptualize Ibusuki as "a destination for luxurious medical tourism" targeting cancer patients under proton therapy.

The research team appreciated this perspective and carried out a series of ethnographic research in the entire town of Ibusuki, starting with the proton therapy institute. Researchers applied the master-apprentice model relationship utilized in contextual inquiry (Beyer & Holtzblatt, 1997) to clarify context, develop partnerships, explore its interpretation, and identify the focus towards the wide range of actors working in the area. During 2015 to 2017, researched conducted master-apprenticeship style research to identify both operant and operand resources that influence the people who visit, live, and work in the area but are currently overlooked or unrecognized: towards fishermen, farmers, chefs of trattorias, taxi drivers, Japanese liquor breweries, Hawaiian-shirts tailors, and food processing factories. The team also conducted interviews towards the ryokan workers ranging from *okami* (refer to Sect. 2.1), clerks, chefs, caterers, janitors, and gardeners. The ryokan employees shared their diaries of their work as well. Through this in-depth research, the research team intended to identify valuable resources of the diverse actors and contribute to innovating the tourism strategy.

The analysis process of this qualitative data started with writing down thick description (Geertz, 2008), an effective way to explore the nonverbal behaviors when performing any interaction (Denham & Onwuegbuzie, 2013). This accelerated the research team to identify the unsung thoughts behind the spoken words—the Japanese tend to have indirect, humble, and restraint communication styles (Nishimura et al., 2008)— the local workers have pride in what they are offering, and willing to expose aptly to those that would not be harmful. Most of the actors were generous and responded to most requests from any non-locals.

Our analysis highlighted diverse resources of the town remotely available—both operant and operand—with high potentials of providing visitors an enjoyable stay if integrated sufficiently. Ibusuki possesses a wide variety of natural resources from farmland to the ocean which can support nature activities and food diversity. The problem lied in the physical remoteness; everything was in disparate locations and there was no way to move freely between them.

3.4 Personal Mobility Service

After identifying the resources available within Ibusuki, the researchers decided to pin the visitor's well-being stay as "being able to discover your favorites on your own". In this way, the research attempts to design a new institution that comprehends the core value accordingly towards every actor. The challenge is how to deliver visitors these variety of resources throughout the city of Ibusuki without having the ryokan employees to be the driver-of-the-day. A creative solution to provide the value accordingly was required.

Previous sections revealed the problem of the lack of mobility supporting the visitors to maneuver around. Therefore, the author proposed to provide personal mobility as a service to the actors in the town to encourage longer stays at the ryokan more comfortable. This would allow visitors to go out on their own to the various activities offered by the town and enjoy sightseeing smoothly. This mobility service would be operated on the technology of autonomous driving, where the mobility itself moves on its own without the need of a human driver. Personal mobility users can use a mobile app to call the driverless car to exactly where they are, just like how Uber or Lyft. The driverless car then comes to them on its own and implies to hop on. Sometimes the driverless car can carry just the luggage to its destination on its own.

The research team hacked Honda's electric wheelchair-type vehicle for seniors ML 200[7] and refurnished it with a Jetson TX1 module[8] control board which receives driving commands from a cloud server. The team added various actuators including steering motors, steering encoders, power distribution, wheel encoders, interface circuits (see Fig. 6.3). Supplementary sensors include GNSS,[9] IMU,[10] and LiDAR. With this initial prototype, one could run on its own within Hakusuikan's vast private territory of 165,000 square meters. Due to local regulatory issues, the maximum speed of autonomous vehicles is limited to 6 km per hour and will not be running on public roads for this study.

Fig. 6.3 The prototype personal vehicle customizing Honda's ML200

[7] Honda News Release "Honda Releases the New Monpal ML200 Electric Wheelchair", issued January 23, 2006. Last accessed 2021/08/21. https://global.honda/newsroom/news/2006/p060123-monpal-eng.html

[8] Nvidia Developer "Jetson TX1 Module", Last accessed 2021/08/21. https://developer.nvidia.com/embedded/jetson-tx1

[9] EUSPA article "What is GNSS?", updated May 17, 2021. Last accessed 2021/08/21. https://www.euspa.europa.eu/european-space/eu-space-programme/what-gnss

[10] Microstrain IMU Inertial Measurement Unit, Last accessed 2021/08/21. https://www.microstrain.com/inertial/IMU

Fig. 6.4 Two scenarios of how the mobility service works at the ryokan

Using this mobility prototype, the research team created a service concept video including several short stories about how to enjoy the stay at Hakusuikan with this mobility service.[11] These envisioned various scenes such as moving around the territory, having heavy items carried, taking a walk along the seaside (on the vehicle) and being picked up on the way back. (See Fig. 6.4 for the detailed images) Through the service design, researchers emphasized the criteria for the autonomous vehicle to be fun to ride even at low speeds compared to the current long-distance highway autonomous driving. The maximum of speed of 6 km per hour is not fast—slower than a bicycle but can run longer distance than walking—however the research team challenged the enjoyment of riding rather than the efficiency.

4 Findings and Design Recommendations

The research team conducted the initial user study towards employees of Hakusuikan—CEO and the managers of the Sales Department—asking them to ride the mobility within the ryokan's territory near the oceanside. Some ryokan guests who were strolling along the oceanside happened to come across this test and generously commented the on its use case and usability. The team conducted an additional interview with the CEO regarding the user study feedbacks. This section clarifies three elements highlighted from the collected feedback and discusses its prospects: possible usage scenarios, some technical concerns, the balance of human-touch and technology, and conclude with practical recommendations for service design projects based in the Japanese context.

[11] Service Concept Video link. Last accessed 2022/02/21. https://youtu.be/Vxlf8e6NYaQ

4.1 Possible Usage Scenarios

Autonomous vehicles are expected to contribute to smart-cities to prevent traffic jams or accidents from driver fatigues or alcohol usage (Bagloee et al., 2016), and mobile the combination of humans and goods through a series of pilot studies especially in the northern European area (Ainsalu et al., 2018). Bucchiarone et al. (2021b) have designed autonomous shuttle usage scenarios for last-mile delivery of goods, tourism or geo-marketing, shared and integrated mobility, and surveillance management. This study incorporated everything besides surveillance management, thus designed the scenario videos for each one.

In the interviews with the employees, they first insisted that they wanted to start using this mobility not for guests, but primarily for internal. They envisioned that they would use it inside the building for cleaning guest rooms or carrying luggage for guests. The CEO agreed with the intensity of the physical labor, and the mobility "could run around the backyard of the ryokan carrying the heavy items" helping the employees carry heavy items around. For the employees, there is more emphasis on carrying the luggage for the guests rather than their own transportation.

For the guests, the employees suggested that it would be appropriate to use multiple vehicles at the same time for outdoor nighttime events, such as fireworks or stargazing. This is because the vehicles would follow each other to the same destination, reducing the problem of "having to wait for other guests to arrive or depart at the same time". Another advantage of using personal vehicles rather than shuttle buses is the needless to wait for the seats to be filled; one can transport on their own.

A guest who happened to pass by the employee riding the vehicle, said "I can go fishing with this by myself," with a smile on his face. "Fishing is something you want to be able to move whenever you want. It's too much trouble to call the staff every time to move around," indicated an interesting aspect of the guests. For the guests, it liberates them from having to be together with other groups and enhance their enjoyment in various activities.

4.2 Technical Concerns

As previous research revealed, safety and secureness are always the issue when it comes to autonomous driving (Morando et al., 2018). Since the test routes were only within the ryokan's private territory, dealing with other traffic was not an issue for this study. Since the speed limit for autonomous driving is regulated to 6 km per hour in Japan, people riding in autonomous vehicles did not feel unsecure due to its slowness, while the ryokan managers felt insecure in that they were "too slow" that it might "not be able to make it in time".

There were also technical problems with GPS connection, which sometimes lost connection with the operating server and did not work. There were also problems with battery, especially when remaining power was unidentifiable to calculate "how

long or far I could go" with the remains. These are all similar issues from previous studies, where Soe and Müür (2020) pointed out the problem of environmental factors such as weather affecting the technical operations, and seasonal changes effecting mismatches with pre-mapped routes. In addition to the safety and secureness issues, the technical issues of implementing are also matters that should continue to be considered in future autonomous mobility research.

4.3 Human-Touch and Technology Balance

Digitized economy has brought service process automation in a wide variety of industries in the past decade (Bolton et al., 2014), where the hospitality sector is not an exception replacing the human-touch (e.g., front-desks, concierge services) with technology from both the guests and organizations perspective (Wirtz et al., 2018). However, even though the adoptions of technology contribute to efficiency, there still lies a paradox of meeting the customer expectations of hospitableness, while delivering it with a technology without eliminating or restricting the human-touch (Solnet et al., 2019).

The ryokan employee's emphasis on "not technologize everything but keeping those where human-touch should" builds on this discourse. In exploring the possible usage scenarios of the mobility service, they indicated to keep what "the employees enjoy doing" as the way it is currently, while what they rather not should be supported by technology. The CEO concurred on this point, saying "the hard part is mainly the physical labor, like carrying heavy items up and down, or cleaning up huge area every day." As indicated in the previous section, the mobility can support the employees and reduce their physical burden.

For the guests, on the other hand, it should be used to help expand the limitations caused by the lack of mobility, such as not having their own car or public transportation. The guest who wanted to go fishing mentioned in the previous section, expressed the common Japanese attitude of "*moushiwakenai*" (a Japanese word indicating regret or apologies) when receiving too much service. Allowing the guests to move around freely at any time through this mobility service seems like a sufficient value proposing.

The current mobility service can be beneficial for balancing the technology and the human service if it can help the physical tasks that employees tend not to do. Human-touch interaction shall remain intact. For the guests, it shall provide the freedom to move around without disturbing anyone else or take their time. Too much human-touch service may become excessive at times for the guests. Meeting this balance is equally significant from the guest's perspective. Further investigation on the detailed balance shall lead to service innovation for the ryokans to survive in the future.

4.4 Recommendations for Service Design Projects in Japan

As the customizing to unique cultural contexts have been stated as a significant challenge in service design projects (Ostrom et al., 2015), the Japanese culture requires specific sets of arrangements that projects should take into consideration. While relationship and trust building are essential in other areas of the world, Japan requires a deep investigation into the concepts of duality and paradox (Johnston & Selsky, 2006). The well-known *chrysanthemum and the sword* metaphors (Benedict, 1946) elaborate the paired set of two key modes specifying the Japanese culture magnificently; there is an *omote* (the front, the surface, the furnished appearance) and an *ura* (the back, the true picture, the real state) for most issues (Doi, 1986). Rapport building is crucial to acquire the truth woven deeply into and under contexts as webs of significance (Geertz, 2008). Having patience, referral-based communications, and being on the right moment are key factors to highlight.

1. **Respect local members for cocreation with patience.** Building the rapport with the actors in the field community that the project is facing is the first step. Developing relationships and overcoming personal and institutional barriers are "the work that occurs before the work" (Le Dantec & Fox, 2015) to identify the key actors and their goals. In this study, the author spent the first year listening to what the ryokan management were struggling with and what they wanted to achieve. Patience in this initial stage was essential before rushing into onsite fieldwork which took another two years.

Onsite fieldworks should be conducted respectfully; if the field says no, it is a no. Fieldwork and user studies can only be properly executed if the value is proposed and accepted by the actor. Researchers should not put off prototyping or conducting user studies but invite the locals in from a very early stage to lay the groundwork for cocreation. This research was not intended to address on mobility before it started, and only started when the local environment appealed to it and the researchers sympathized with it. It is significant not only to listen but also to look voice of the voiceless; the nature of the Japanese research context of being modest, indirect, and restraint made it perhaps more important than working in other parts of the world. Some tactics for "the work that occurs before the work" are to speak in smaller groups, one-on-one, or informal settings outside the meeting rooms.

2. **Respect any resources applicable for integration with referrals.** The locals in the field tend not to be aware of what resources they possess. Since "resources are not, they become" (Zimmermann, 1951), the research phase of exposing resources requires identifying the actors in the field and investigate the context and institutions to which they are devoted. If those relationships are not soundly established, then access to resources will become a challenge. In this study, we were able to facilitate the initial relationship-building process with the help of the ryokan CEO; various actors mentioned "oh, if you are a referral from the Hakusuikan owner," and thus eased the initial relationship building.

Actors possess both operant and operand resources. To put service design into action, state-of-the-art technologies alone are not. Researchers need to use technologies that are appropriate for the field, integrate them in the right means, and propose value towards the actors. This study only decided to incorporate autonomous driving technologies because of the voices of the ryokan employees: the lack of human labor and the remoteness of the land. Service designers need to respect any kind of resources, even if they are current customs, to overcome personal and institutional barriers to the field.

3. **Respect the readiness of the field when showing prototypes and findings.** The initial prototypes are not to be practically used from that moment but serves as an apparatus to build bonds and trust with the various actors of the field. Seeing is the easiest way to lead believing, however it must be just when the field requires it, it cannot be too early or too late. The appropriate timings to demonstrating effort and commitment is essential for initial relationship building; you cannot leave the field behind.

It is important to keep in mind about sustainability; the service design is to be used and operated in the long term by the actors in the field, not by the researchers. Identifying the operant resources of the actors in the service ecosystem and formulate institutions to sustain the ecosystem are the significant. In this study, the researchers frequently shared service design ideas with the ryokan, creating scenarios and videos that elaborated on use cases, conducted prototyping activities within their territory, and demonstrated earlier prototypes to see how they respond to each of them. Reading behind the expressions and the hidden thoughts are critical at every stage, to keep a balance of what the actors expect. Reading between the lines of the *omote* and *ura* perspectives (Doi, 1986) are a substantial skill for researchers to nurture.

5 Conclusion and Future Considerations

This chapter revealed the challenge of how service design—in this case, the personal autonomous mobility service for both ryokan workers and guests—can contribute to further business growth together with a traditional Japanese hospitality business. The key contribution of this paper was by pointing out the learnings from the four-year-long cocreation process, by considering what has been analyzed in the previous section.

Due to the nature of this paper as a case study, the results of this study have several limitations. First has to do with the sampling: the size, the region, and cultural aspects. Second, autonomous vehicles still have many technical issues to overcome; some having to deal with law, local regulations, and the existing urban transportation ground. Third, this paper only focused on the maneuverability of remote resort town areas, however there are also other issues for local hospitality to overcome

such as language, dietary restrictions, or understanding any kind of expectations the guests and locals have.

Lastly, this study was conducted before the pandemic, therefore it needs to reconsider hygienic and psychological issues. The hospitality sector in general is struggling worldwide due to the restricted global tourism. The author hopes this service design and recommendations can benefit the hospitality sector better adapt to the current situation and create new business opportunities for the future.

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Chapter 7
Adoption of Service Design in the Banking Industry: A Focus on the Practice of Silent Designers

Alvin Jia Hao Chia and Jung-Joo Lee

Abstract The banking industry is facing unprecedented changes. Banks need to out-innovate their disruptors to remain relevant from the assault launched by various Financial Technology (FinTech) companies coupled with shifting customer needs and expectations. Numerous banks in Singapore (e.g. OCBC, DBS Bank) started to adopt service design as an innovation approach and trained non-designers in the service design methods. While this created a tribe of "silent designers" in organisations with the potential to innovate, their practice and contributions have been sporadic, ephemeral and limited, rather than systematic and sustainable. This chapter presents a literature review of silent design, innovation capability frameworks, and two case studies of Z Bank to illustrate how service design was adopted in Singapore's banking industry. The case studies showcased the evolvement of Z Bank's innovation capability across the dimensions of strategy, resource, process and mindset. Based on the findings, this chapter discusses future implications to enable better adoption of service design in the banking industry with a focus on the practice of silent designers.

Keywords Service design · Silent design · Bank · Business

1 Introduction

The banking industry has always been the cornerstone of Singapore's economy. The sector contributed 15.7% to the country's Gross Domestic Product (GDP) in 2020, coming in third and just behind manufacturing and trade (Singapore Department

A. J. H. Chia
Division of Industrial Design, National University of Singapore, Singapore, Singapore
e-mail: jiahao.chia@u.nus.edu

J. -J. Lee (✉)
Division of Industrial Design, College of Design and Engineering, National University of Singapore, Singapore, Singapore
e-mail: jjlee@nus.edu.sg

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of Statistics, 2022). As of 2020, there are 132 global and domestic banks in Singapore (Müller, 2020), with industry insiders naming it a "hyper-competitive" environment (Lee, 2020). In addition, newly established FinTech (Financial Technology) companies, such as the Grab Financial Group (Shu, 2020) and Endowus (Cua, 2021), brought further challenges to the sector. As the FinTechs did not have the baggage of legacy systems and infrastructure, such as branches, they could focus on providing better digital services. As a result, customers grew increasingly disillusioned with the sub-par services offered by the plethora of banks and formed new expectations (Ang, 2021). So how can banks differentiate themselves from their peers and out-innovate their new challengers?

Given the homogeneity of banking products (Mandhachitara & Poolthong, 2011), service quality and a superior experience became the edge many pursued. For example, two of Singapore's domestic banks, OCBC Bank, started the Service Excellence team in 2001 (OCBC, 2016) to enhance their service standards, while DBS Bank started their improvement program in 2009 to shake the image of being "damn bloody slow" (Bloomberg, 2016). Explicitly or implicitly, those banks began to focus on making services usable, easy and desirable for the user, i.e., service design according to Design Council's (2015) definition. DBS Bank's Raju Nair (2016) shared their approach to service design as being focused on the customer, key events in their life and their current experiences. The investment in service design did lead to some successful case studies. For example, in its attempt to improve the overall customer experience of its mobile banking platform, DBS Bank launched a paperless and signature-less experience on its mobile platform (Egea & Padilla, n.d.).

While successful, the earlier example from DBS Bank was done in collaboration with external designers from Frog Design, who were experts in service design. But due to the high costs associated with outsourcing, hiring external designers will never be the longer-term solution. To achieve sustainable and repeatable innovation, many banks have turned toward developing their internal capability (Carlgren et al., 2014). Non-designers, those without a background in design, were trained and tasked to design in a phenomenon known as silent design (Gorb & Dumas, 1987). This growing tribe of silent designers was perhaps set up to fail. Unfortunately, many of them did fail, as pointed out by design agencies Continuum and Frog Design, due to various reasons ranging from bland insights to being obsessed with processes over the outcome (Pannozzo, 2015; Morey, 2019).

This chapter aims to illustrate how service design was adopted in Singapore's banking industry, with the overall question: How might we enable better adoption of service design from the perspective of the silent designers? We first review the literature on silent design and innovation capability to understand the background and theoretical framework that would help ground this research. Next, through two case studies, we will analyse the thematic areas of service design adoption from the perspective of the silent designers. Finally, based on the findings, we discuss the

opportunities to improve service design adoption for other banks and organisations embarking on a similar transformation journey.

2 Literature Review

2.1 The Evolving Notion of Silent Design

The notion of silent design has been revisited by various scholars over the past four decades (see Table 7.1). Gorb and Dumas (1987) observed that since 1982, there had been increasing interest within the United Kingdom (UK) in the impact design brings to the overall business profitability. The practice of design appears to be "widely dispersed throughout the organisations", and design as a function cuts through many traditional functional areas (p. 152). Design activities were often misclassified, leading to many non-designers designing, a phenomenon known as silent design (Gorb & Dumas, 1987). The three key indicators of silent design include (1) not having design listed in the job description, (2) does not self-identify being a designer and (3) not being perceived by others as a designer. Christensen (1995) added that design could be ignored entirely, internalised, or outsourced in organisations, while Walsh (1996) remarked that a lack of organisational resources and the inability of designers to devote time were the main drivers of silent design.

Table 7.1 Key mentions of silent design in key literature

1980s and 1990s: Establishing the presence of silent design	2000s: Exploring linkages of silent design	2010s: Accepting and appreciating silent design
Gorb and Dumas (1987): Silent design prevalent in aesthetics, marketing, and production process	Gemser and Leenders (2001): Business organisations were not viewing design as important enough to deserve professional or dedicated support	Terrey (2010): Silent designers' attributes complement what trained designers display
Christensen (1995): Design may be completely ignored, internalised as a function, conducted as silent design unconsciously or outsourced	Moultrie et al. (2007): Silent design practised by engineering staff as part of the development process	Shams and Lam (2016): Companies using strategic design were more successful than those who used silent design. However, silent design is better than no design
Walsh (1996): Silent design is most prevalent when (1) designers are unable to devote time and (2) lack resources or fail to see the importance of design	Candi (2009): Silent design was particularly prevalent in internet-dependent businesses	Junginger and Bailey (2017): Act of designing and designers could be separated, allowing the organisation-wide design to spur innovation

Silent design persisted in the 2000s (Moultrie et al., 2007; Candi, 2009), and it was progressively seen as an integral component of an organisation's success. However, many small organisations have failed to note the apparent advantage and marginalised design (Moultrie et al., 2007). The critical reasons for the persistence of silent design include resistance from senior leadership, prejudices, or previous experiences where designers produced inappropriate results. Candi (2009) concluded that silent design is "alive and kicking" (p. 187), and it allows organisations to perform better. However, he also noted that engaging external designers could come with high costs, lowering organisations' profitability (Candi, 2009).

In the 2010s, the discussion on silent design remained active, and the literature reviewed showcased a broader acceptance and appreciation. Terrey (2010) noted that silent designers typically display six attributes, such as prototyping that mirrors the key strengths of designers. Shams and Lam (2016) furthered the discussion by framing strategic design as the ideal end-state for silent design. They defined strategic design as using design to satisfy a longer-term vision, with a clear structure for management and persistent use (Shams & Lam, 2016). Junginger and Bailey (2017) viewed design as an "ongoing, omnipresent activity" (p. 34) in all types of organisations. They highlighted the "pre-text", or historical context of how design has been used as critical to determining the organisation's success. Since silent designers were typically hidden, pre-text has remained "invisible, unacknowledged and unarticulated" (p. 34). The organisation needs to be mobilised beyond silent designers to allow pre-text to be fully explored.

2.2 Assessing the Innovation Capability of Organisations

Innovation is complex but typically defined as developing new products and services to meet the user's needs (Carlgren et al., 2014). To determine the organisation's innovativeness, most of the current literature has taken an output view, such as benchmarking the number of products launched in the market (Crossan & Apaydin, 2010). In addition to the output view, another stream of research argued that some organisations were inherently better at innovating as they had better innovation capability (Lawson & Samson, 2001; O'Connor, 2008). These authors recommend a systemic understanding of innovation that includes organisational and cultural aspects beyond the output generated. For example, Börjesson and Elmquist (2012) defined innovation capability as the organisation's preparedness to innovate or develop its 'innovation muscles'.

Lawson and Samson (2001) suggested that higher innovation capability is key to linking new products and services to their existing offerings. In their research, they highlighted having a clear innovation vision, a community of innovation champions, appropriate funding, rewards for creativity, idea management, tolerance of ambiguity, ability to learn, fail, and empowerment as demonstrations of innovation

Table 7.2 Summary of the innovation capability frameworks

Dimension	Definition	Example
Strategy	Alignment of innovation capability with strategic intent	Innovation vision (Lawson & Samson, 2001); effective matrices (O'Connor, 2008)
Resource	Accessibility of internal and external talents, experts, and ecosystem partners	Community of innovation champions and appropriate funding (Lawson & Samson, 2001); nurturing of skills and effective communications (O'Connor, 2008)
Process	Availability of structures, systems, benefits and process	Rewards for creativity; idea mgmt. (Lawson & Samson, 2001); transparent governance, exploratory processes, clear org. Structure (O'Connor, 2008)
Mindset	Demonstration of an open culture as part of behavioural norms	Tolerance of ambiguity, ability to learn, fail, and empowerment (Lawson & Samson, 2001); culture (O'Connor, 2008)

capability. O'Connor (2008) refined the thinking into seven interdependent elements that included a clear organisational structure, effective communications, exploratory processes, nurturing of skills, transparent governance, effective matrices and culture as critical aspects to developing the organisation's innovation muscles. Finally, Börjesson and Elmquist (2012) summarised that organisations need a systematic view of innovation that includes resources, processes, and mindsets to be competitive. And the three dimensions will have to be aligned to the organisation's strategy. The four dimensions highlighted by Börjesson and Elmquist (2012) provided a practical framework to synthesise the previous research (Table 7.2).

2.3 Reflections on the Literature

The above review highlighted the persistence of silent design across industries for various reasons, such as the inability of trained designers to devote time (Walsh, 1996) and the failure to see design's importance (Walsh, 1996; Gemser & Leenders, 2001). There was also a growing acceptance (Shams & Lam, 2016) and appreciation (Terry 2010, 2012; Junginger & Bailey, 2017) of silent design from the literature review. The topical focus of current literature was mainly on how small organisations (Moultrie et al., 2007) and tech companies (Candi, 2009) applied traditional design disciplines (Gorb & Dumas, 1987; Christensen, 1995; Walsh, 1996) and not from the perspective of service design.

On the other hand, the innovation capability framework summarised above (Börjesson & Elmquist, 2012; Carlgren et al., 2014) provided a valuable lens for understanding the critical dimensions to evaluate an organisation's ability to innovate. In addition, Lawson and Samson's (2001) perspective of having a higher

innovation capability as the key to creating better products and services also helped us establish the linkages between innovation capability and its service design outcome.

When reviewing service design literature, we observed that current case studies on banks were based in Europe, such as the Hungarian banking industry (Feher & Varga, 2017) and Deutsche Bank (Vetterli et al., 2016), with no Asian examples. Furthermore, these cases were also focused on the outcome of service design adoption and not from the perspective of the silent designers.

Based on the literature reviewed, this paper would contribute towards bridging the gap of a lack of empirical case studies of an Asian bank across both silent design and service design literature. Furthermore, the case studies will contribute to the silent design literature that has shown persistency and growing appreciation of the phenomenon, highlighting the value of this piece of research. Finally, utilising two case studies across different innovation capabilities will allow us to compare and generalise silent designers' issues and opportunities at different phases of service design adoption.

3 Case Studies

Two case studies were conducted on Z bank in Singapore to illustrate the adoption of service design in the banking industry. Z Bank is one of the largest banks in Southeast Asia. It has operations in more than 17 markets and over 300 branches. In addition, Z Bank's transformation efforts have helped them win multiple international accolades, including the "best bank in the world" title for four consecutive years (Chern, 2021).

3.1 Selection of Cases

Z Bank started its transformation journey in 2009 by introducing process improvement methodologies into the bank. The program was met with great success in Singapore and launched into other key markets. In 2013, the Lean IT program was launched, mainly targeting its engineering and development team. In 2016, Z Bank launched service design as a problem-solving method to defend against the FinTech challengers and out-innovate its peers. After a two-year exploration, Z Bank regionalised service design in 2018 and launched the program at scale (Fig. 7.1).

In January 2016, Z Bank revealed its approach to service design, the *journey Thinking* framework (Fig. 7.2). The framework was adopted from the Double Diamond framework of "Discover, Define, Develop and Deliver" by UK's Design Council (2019). User research would be conducted to uncover specific needs in the Discover phase. The silent designers will be taught the five-step process of drawing a stakeholder map, writing a discussion guide, conducting fieldwork, capturing data

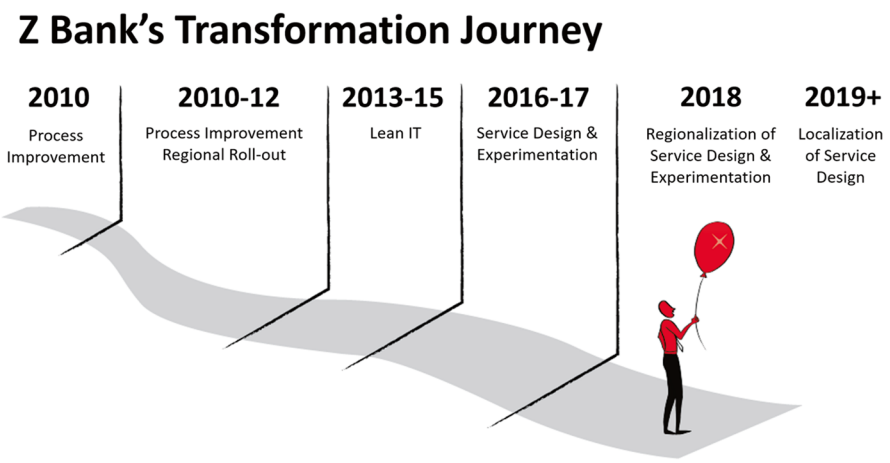

Fig. 7.1 Overview of Z Bank's transformation journey. (Source: Z Bank)

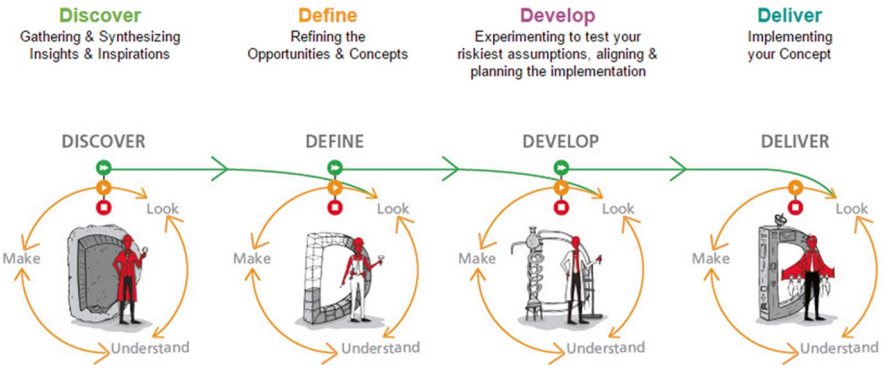

Fig. 7.2 Visual representation of Z Bank's journey thinking framework. (Source: Z Bank)

and affinity clustering. In the Define phase, silent designers will brainstorm and sketch potential solutions to address the insights. The solutions were then prioritised on a two-by-two diagram based on the customer needs and difficulty of implementation. Those ideas that ranked high in customer needs and low in difficulty were prioritised and brought into the Develop phase, where the silent designers will collect feedback from users for iteration and improvement. At the end of Develop, the silent designers would have to share the idea back to the senior management and unlock funding before moving into the final Deliver phase for implementation.

The two case studies were chosen to represent two distinct periods in Z Bank's transformation journey (Fig. 7.1). The first case, Project T, was launched in February 2016 at the early stage of Z Bank's service design application. The second case, SS Program, was initiated in May 2018, after Z Bank achieved substantial learning on

service design and regionalising the program. Comparing the two cases will allow us to discuss the different challenges and opportunities identified by the silent designers across varying levels of Z Bank's innovation capabilities.

3.2 Data Collection and Analysis Method

Data collected for the two case studies consist of interview transcripts for 15 semi-structured interviews and 12 documents collected from the bank's annual reports and meeting minutes. The interviews were voice recorded and transcribed verbatim for analysis (Table 7.3). The themes were identified from the data collected after rigorous open and axial coding processes (Corbin & Strauss, 2008). A fellow researcher was invited to code up to 20% of the transcripts to ensure the fairness and robustness of the codes.

Table 7.3 Overview of the datasets for Z Bank's case studies

Case study: Z Bank				
Case	Dataset	Quantity	Format	Purpose
Case 1: Project T	Transcripts from semi-structured interviews	6 people from Z Bank 2 senior management 4 silent designers	Word document of transcriptions	Primary source of data to understand the background, challenges and opportunities of silent designers
	Documents	5 documents 2 sets of meeting minutes 3 sets of ppt materials by the silent designers	Digital copy of materials in PPT, PDF or word format	Secondary source to triangulate the data captured during the semi-structured interviews
Case 2: SS program	Transcripts from semi-structured interviews	9 people from Z Bank 2 senior management 3 internal designers 4 silent designers	Word document of transcriptions	Primary source of data to understand the background, challenges and opportunities of silent designers
	Documents	7 documents 4 sets of meeting minutes 3 sets of annual reports (2017–2019)	Digital copy of materials in PPT, PDF or word format	Secondary source to triangulate the data captured during the semi-structured interviews

3.3 Overview of Case 1: Project T

Z Bank initiated Project T in Feb 2016 to explore the possibility of combining its portfolio of credit cards into a unified, singular offering. The hypothesis was that such a service would serve the entire lifecycle of customers, promote stickiness, and defend Z Bank against the competition. The concept of "cradle to grave" is commonly used in banking (Pogány, 1989), but the application on credit cards makes it unique. The team was allowed to explore the topic and make data-backed recommendations to the senior management. The project was among the first to utilise service design and the journey thinking framework launched by the bank in late 2015.

3.3.1 Background and Participants of Case 1

Five silent designers were on this project—Three Product Managers (SM, NL and YF) and two from support functions (JH, WH). In addition, two supervisors (SO and DM) supervised their daily work (Table 7.4). The Product Managers were selected as silent designers as they have indicated an interest in innovation and wanted to be involved in such initiatives. Including the two business support function members by SO and DM were more tactical, as they could help navigate the back-end system and retrieve data whenever necessary.

Table 7.4 Roles of various actors involved in project T

Actors involved in the program	Roles in the project	Participants / Academic background
Bank job roles: Business / product managers	Silent designers: Participate in research, upward reporting of outcome	SM (participant name coded), associate, credit card product manager / Marketing NL, analyst, debit card product manager / Business Marketing YF, senior associate, loans product manager / Economics & Management WH, associate, Business analytics / information system management JH, associate, system support / banking and finance (not interviewed)
Bank job roles: Business / team head	Direct supervisor of silent designers, decision-maker and owner of outcome	SO, VP, head of debit cards / economics & political science DM, AVP, cards acquisition / political science
Bank job roles: Innovation management	Internal designer: Training and coaching	AC, senior associate, design practitioner / history

All five of the silent designers have not been trained in service design. SM had some exposure to similar approaches (e.g. Design Thinking) during his previous work experience, but others came in with no prior experience.

3.3.2 Application of Service Design in Case Study 1

The Discover phase started with an hour-long just-in-time (JIT) training conducted by the internal designer, a trained service design practitioner from the central innovation management team on the basics of interviewing and fieldwork (Fig 7.3). Just-in-time (JIT) reflected the bite-sized content required to complete their immediate tasks, silent designer-specific syllabus and learning before the work (Brandenburg & Ellinger, 2003). After understanding the process, the silent designers conducted 29 interviews with target users of the combined credit card product and collected more than 500 verbatim texts as part of the data synthesis process and arrived at five key insights. The insights covered areas from security, acceptance and having personalised services.

In the Define phase, the silent designers and their supervisors gathered for a half-day ideation workshop conducted by the internal designer. The silent designers played the participant's role throughout the process, while the internal designer played the role of a facilitator and guided the team through the process. At the end of the ideation process, close to thirty ideas were generated by the silent designers. They then clustered the ideas into major thematic areas and collapsed similar ideas. After clustering, the silent designers voted on the ideas they felt had the greatest potential for further testing (Fig. 7.4).

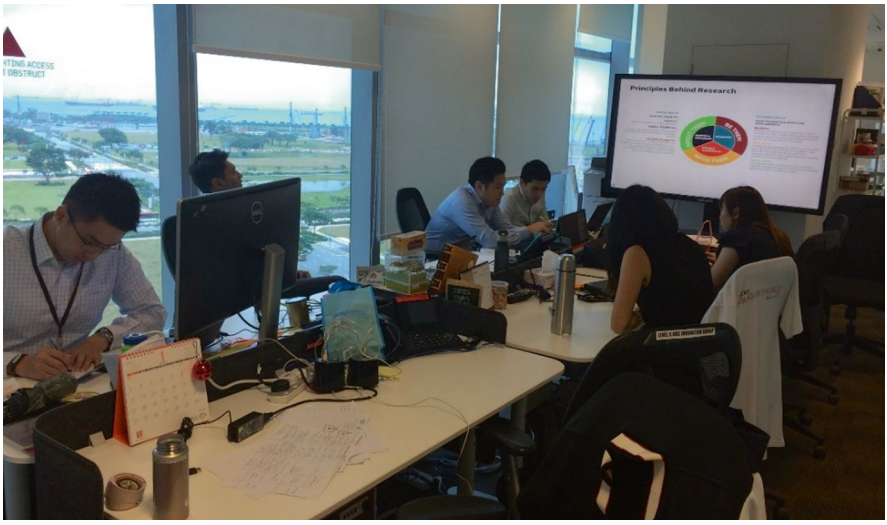

Fig. 7.3 Image from the just-in-time training conducted. (Source: Z Bank)

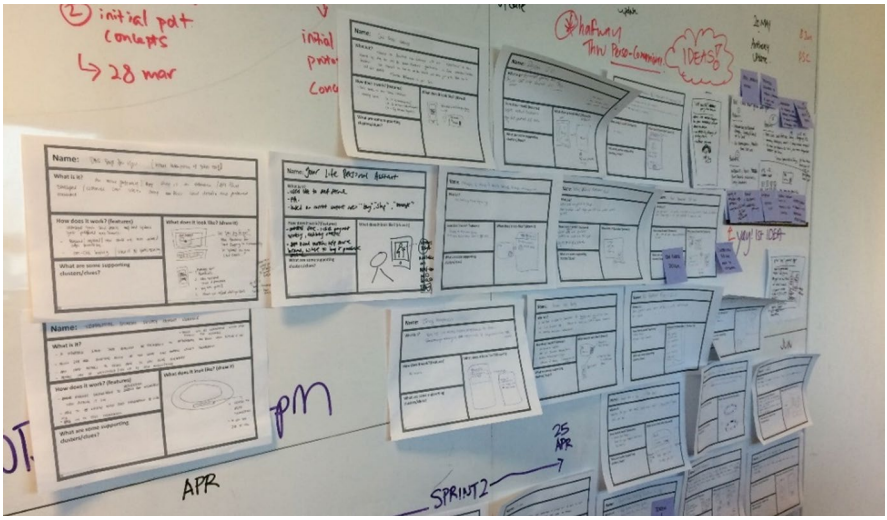

Fig. 7.4 Ideas generated from the ideation workshop. (Source: Z Bank)

Fig. 7.5 Concept testing with target customers. (Source: Z Bank)

In the Develop phase, the internal designer ran another round of just-in-time training and gave the silent designers a week to design the concept for testing. The training covered the topics such as testing methods, drafting of hypotheses and tips for successful testing. Once the materials for testing were ready, the silent designers recruited fifteen target customers for testing. Again, the silent designers facilitated the user tests while the internal designer oversaw the testing process (Fig. 7.5).

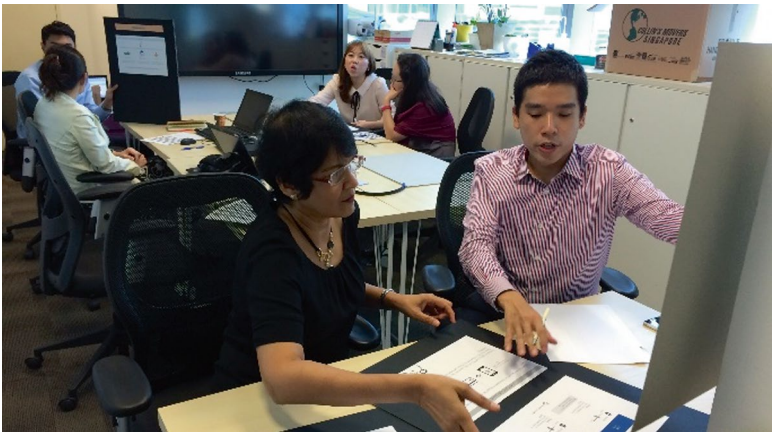

Fig. 7.6 Concept testing with internal Z Bank staff. (Source: Z Bank)

The silent designers only planned to speak to the target customers initially, but the supervisors recommended that the silent designers conduct tests to engage the internal stakeholders within Z Bank. The supervisors saw capturing their inputs as getting broader buy-in, which would also set them up to have a smoother implementation after the project. Based on that recommendation, the silent designers invited ten senior executives across various functions for further testing (Fig. 7.6).

The three-month project concluded with the recommendation that Z Bank should pursue the unified credit card offering based on the various data captured. They also validated a series of accompanying services required to make the unified card successful and presented it to senior management in June 2016. Based on their recommendation, the senior leadership were in favour of rolling out certain parts of their recommendations. Still, they were ultimately not ready to move into Deliver phase due to a lack of resources for implementation.

3.4 Overview of Case 2: SS Program

The SS Program was launched in May 2018. SS Program is an initiative to help senior citizens embrace digitisation and cashless payments. The hypothesis was that the program would improve their financial literacy and promote active usage of banking services, enabling Z Bank to engage them more meaningfully. The program was initiated after two years of experimentation with service design. In 2018, the senior management was aware of the benefits that service design brings, and it is looking to apply that to all areas of their business.

3.4.1 Background and Participants of Case 2

This program had four silent designers: Three Product Managers (AZ, BY, CX) and a Marketing Specialist (DW). The bank also had one of the Resident Committees, a district-based grassroots organisation in Singapore and a pre-university institute in Singapore serving as external collaborators to provide administrative support. In addition, the bank's innovation management team sent three internal designers to support the silent designers. They played a coaching role to the silent designers throughout the program (Table 7.5).

The Lead Product Manager (AZ) joined as a silent designer due to the management mandate to drive the program to success. The two other Product Managers were asked to participate as silent designers to support the Lead Product Manager in data collection and design. In addition, the marketing team seconded the Marketing Specialist to gain exposure and help with the marketing rollout.

All four of them have attended in-person training previously conducted by the innovation management team of the bank and are aware of its benefits. In particular, the silent designers attended the one-day training for user research and half-day training for idea framing and development before taking on this project.

Table 7.5 Roles of various actors involved in the SS program

Actors involved in the program	Roles in the project	Participants / Academic background
Bank job roles: Business / product managers	Silent designers: Participate in research, co-facilitate ideation workshop, decision-maker and owner of outcome	AZ, AVP, Lead product manager / Business management, communications BY, associate, product manager / Business administration, finance CX, associate, product manager / Business administration, accountancy DW, associate, Marketing specialist / banking and finance
Bank job roles: Innovation management	Internal designers: Coaching and supervisory role	EV, AVP, design practitioner / industrial design FT, AVP, design practitioner / design GS, associate, design practitioner / industrial design
Pre-university institute students	External collaborator: Research support, transcribing research	50 x students (not interviewed) / Business major
Resident committee members	External collaborator: Venue booking and appointment booking with participants	5x RC members (not interviewed)

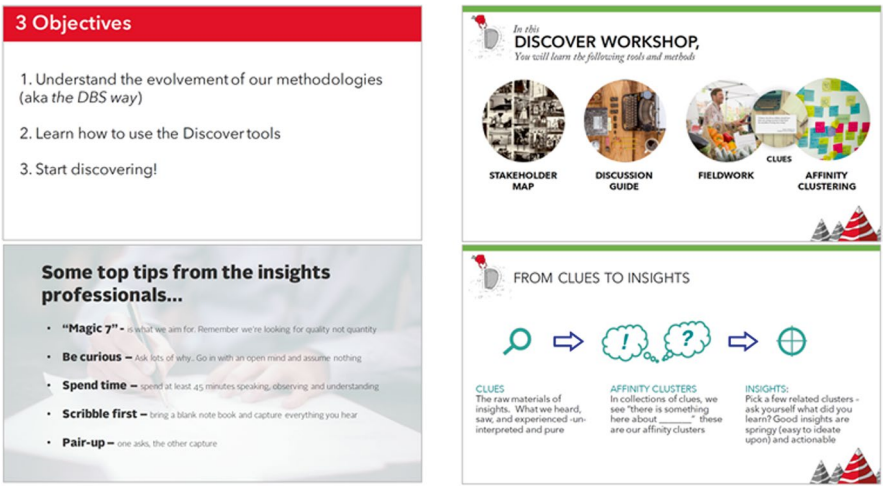

Fig. 7.7 Snapshots of materials from the Discover training. (Source: Z Bank)

Fig. 7.8 CX (circled), Product Manager leading a focus group discussion. (Source: Z Bank)

3.4.2 Application of Service Design in Case Study 2

In the Discover phase, the internal designers conducted the interviews and observed sixty selected senior citizens with research support from the pre-university institute students as external collaborators. There was minimal involvement from the silent designers as they delegated the work to the internal designers on the project. In addition, in-person training was conducted before the sessions to help the pre-university

institute students understand various interviews and observation techniques. The syllabus to train the external collaborators was the same as the silent designers' training before the program. The research focused on critical areas such as social relationships, service needs and financial attitudes of the elderly (Fig. 7.7).

In the Define phase, internal designers, silent designers and external collaborators from the resident committee gathered for a half-day ideation workshop. The internal designers facilitated the workshop and were supported by selected silent designers as co-facilitators. In the end, the four features of smart payments, smart transport, smart communication and smart fitness were identified for further testing.

In the Develop phase, user testing was facilitated by the silent designers, with guidance from the internal designers. As the eventual SS Program owner, the silent designers wanted to hear from the users directly. They found that the elderly wanted a more flexible format that could be worn differently. The elderly also debated the step tracker's effectiveness and provided tips to explore other use cases of cashless payment (Fig. 7.8).

In the Deliver phase, the silent designers led vendor selection to produce all the wearables required for launch. The silent designers were better suited to manage the vendor selection process as they had prior experience with the procurement process and an existing vendor list. The internal designers only provided inputs whenever necessary.

The three-month pilot of the SS Program concluded in August 2018 and provided the bank with a rich opportunity to understand and observe the cashless usage of the elderly. The key outcome of the program includes having more than 40% of the elderly convert to cashless payment services during the pilot test.

Table 7.6 Z Bank's innovation capability across two cases

	Case 1: Project T	Case 2: SS Program
Strategy	Improvement attempts plateauing, experimenting with service design as an alternate method for growth	Successful service design adoption but limited to improving customer experience and feedback
Resource	External resources available; small groups of internal designers in the central team and low capability of silent designers	Expansion of central team; internal designers supported by trained silent designers
Process	Journey thinking framework in place, no known use cases for implementation No formal training, upskilling processes & syllabus No reward systems & benefits No infrastructure in place to support the implementation	Journey thinking framework in place, numerous use cases & examples to follow Compulsory training, upskilling processes & syllabus available No reward systems & benefits Some infrastructure is in place to support the implementation
Mindset	No leadership recognition of service design, no top-down advocacy on culture change	Improved leadership recognition of service, strong top-down advocacy on culture change

3.5 Mapping Z Bank's Innovation Capability

Based on the data captured, it is observed that the two case studies represented varying levels of innovation capability for Z Bank across the four dimensions of strategy, resource, process and mindset. Therefore, the innovation capability framework (Table 7.6) will be used to summarise the similarities and differences across each dimension.

The four senior management interviewed (Table 7.3) provided an overview of the strategic intent of Z Bank from 2016 to 2018. For Project T, the senior management observed that their process improvement efforts were getting to a bottleneck, and they had to seek alternate methods to grow. Therefore, the process improvement team was tasked to review other problem-solving techniques, with service design being one option. At the same time, Design Singapore Council (DSG), a subsidiary of the Economic Development Board (EDB) of Singapore, sought to link professional services firms with local organisations and introduced LUMA institute, a Pittsburgh-based design training company, to Z Bank. Based on DSG's introduction, Z Bank's process improvement team started experimenting with design tools and saw the value of service design. The early interest in service design brought several senior leaders from Z Bank to Stanford's d.School where they attended an innovation boot camp and were further inspired to make service design a success in the organisation. It can be concluded that service design was not part of the broader strategy pursued by the bank and was run as an experiment. On the other hand, SS Program was initiated in May 2018, after several high-profile, successful implementations of service design in Z Bank. The numerous successes meant that the senior management was already aware of the positive impact of service design and has given the green light to scale service design to other regions. Across the two cases, despite a growing acceptance of service design based on its impact, the senior management still lacked long-term commitment. For Project T, service design was in its infancy and not seen as an essential part of its strategy. For SS Program, service design's influence was still limited to improving customer experience and feedback (mainly in the category of 'making banking joyful') and not uniformly applied to other aspects of Z Bank's businesses.

Z Bank has made external experts and ecosystem partners available as part of its resources early in its service design adoption journey. LUMA institute was one such partner, and LUMA's tools and methods were among the first used to help silent designers practice service design. However, the high cost of engagement made hiring external experts repeatedly not viable. Internally, Project T depended on a small group of internal designers from the central team while leveraging silent designers to execute and run the program. The small group of internal designers was deployed on multiple projects simultaneously, which made scaling service design difficult. In addition, the silent designers on Project T had to depend on internal designers' availability, which led to significant inefficiencies. In 2018, when SS Program was

initiated, the central team grew in size and could dedicate several internal designers to the project. The expanded central team allowed the internal designers to be more embedded. They eventually took a more proactive role compared to what was observed in Project T. Across the two cases, despite the increase in silent designers, the way these designers were chosen remained the same, creating a lack of diversity and a shortage of skillsets required.

While Z Bank had the journey thinking framework in place since the start of Project T, several areas of difference were still observed in the process dimension. Notably, the lack of established use cases to implement the framework, structured training, funding and technical infrastructure were other examples leading to Project T being aborted before entering the Deliver phase. Silent designers from Project T attended just-in-time training, which led to complaints of a lack of "bigger picture" view and opportunity to practice before applying. In comparison, silent designers from SS Program attended a structured training program with actual case studies to use the service design tools before starting the program. They also benefited from seeing how service design could work in previous projects, giving them greater confidence than the silent designers on Project T. The bank was also better prepared in 2018, with technical resources waiting to implement the outcome of the SS Program in place and ready to be deployed at any time. Finally, it is worth noting that the lack of rewards systems and tangible benefits persisted throughout the two cases and thus impeded greater uptake of service design within Z Bank.

Another positive change across the two periods was the mindset change observed. The silent designers on Project T had little support from the senior leadership as they experimented with the approach. However, in 2018, the senior leaders were proactively advocating for service design. For example, it was recorded in the meeting minutes that Z Bank's CEO pushed each Managing Director to take up at least one service design project, showcasing the bank's ambition and recognition for service design. The recognition and advocacy of service design projects made it more attractive for silent designers to take up service design.

4 Findings

This section will focus on the field data from the two empirical case studies to illustrate the adoption of service design from the perspective of the silent designers and reveal the challenges and obstacles observed. The thematic areas identified will be structured within the innovation capability framework consisting of strategy, resource, process, and mindset to help us understand how the practice of silent designers ties in with the varying levels of Z Bank's innovation capability observed in Sect. 3.5.

4.1 Strategy: Lack of Long-Term Commitment Impeded Deeper Integration of Service Design

When comparing the two cases, service design got more deeply entrenched in Z Bank's strategy in the latter part of its transformation journey. In the first instance, service design was used as an experiment. But as we progress into the second case, service design was part of the broader strategy of Z Bank, albeit being limited to the category of customer experience. However, if we reflect on the macro-level changes that the senior management and silent designers reflected, service design was only one of the many problem-solving frameworks that the bank pursued. For example, as service design gets regionalised in 2018 (Fig. 7.1), the bank started to pursue business agile and, at a later stage, data analytics. This confluence of problem-solving frameworks led to fatigue by the silent designers as they had to constantly learn new approaches to crack their business challenges. This lack of long-term commitment also gave the silent designers the impression that service design is no longer the "flavour of the year"; thus, they felt little impetus to embed service design into their daily work.

> *The central team is always sending new frameworks and tools to us. This adds to our workload and becomes too much to handle at some point.* – DW, Marketing Associate (SS Program)

All participants reflected that service design became Z bank's problem-solving framework of choice for several years, but they cannot say that it has persisted. Another challenge faced by the silent designers is that the bank-wide attrition rate is approximately 20%. Thus most of the silent designers who learnt service design in the earlier stages (2016–2018) would leave the bank in the next few years. In addition, senior leadership's lack of long-term commitment meant that new joiners would not have the dedicated support to learn and practice service design as their predecessors, further impeding the uptake of service design in the bank.

4.2 Resource: Growing Internal Capability but Room for More Cross-Functional Talents to Improve Service Design Outcome

Across the two cases, it can be observed that there is a decline in dependence on external resources such as LUMA institute as the central team grows. In addition, as seen in SS Program, the silent designers were much better prepared to take on service design projects with structured training and prior exposure. However, the type of talents chosen to take on the silent design role did not evolve in tandem with other areas. On the contrary, the talents remained relatively consistent despite having a cross-functional team with diverse skillsets often considered crucial to improve the outcome of new products or services design (Troy et al., 2008). Product Managers

were often chosen to play the silent design role for two reasons. Firstly, the Product Managers are responsible for the success or failure of the product and reflect on their annual performance goals. Banks are typically organised by the type of customers they serve (e.g. corporate or consumer), the segment (e.g. high net worth or mass market) and function (e.g. technology, risk, operations). The technology team plays a supporting role in helping with the program's rollout but does not influence how the product is designed. Attempts started in 2018 for early engagement, and equal rights are given to technology managers, but ultimately the Product Managers are still accountable.

> *Ultimately, we are also responsible for the product's success or failure as we hold the Profit & Loss (P&L).* AZ, Lead Product Manager (SS Program)

Secondly, Product Managers are often selected as silent designers because their background is deemed more suitable. The interviewed silent designers typically graduated with degrees in business management or marketing.

> *I felt that some part of service design is similar to what we previously learned in school, like marketing or advertising*. SM, Product Manager (Project T)

The perception and preference for a business management background are due to three reasons. Firstly, those from a business background were seen as having some form of relevant training on customer engagement compared to those from a technology background. Modules such as market research, service quality and communication were common in business school while optional or seen as irrelevant in technology or engineering courses. Secondly, those from a business background were also deemed more exposed to public speaking and generally seen as more eloquent. Thirdly, since other senior management members were also from a business background, they could better understand the training business graduates received before joining the bank. Considering these three factors, those from business or marketing were more frequently selected to solve customer-related issues than the technology managers.

4.3 Process: Spontaneous Shift of Design Roles Between Silent and Internal Designers

When reviewing the two cases across the process dimension, three areas of having use cases to demonstrate success, compulsory training and infrastructure, stood out as key areas of positive change. On the other hand, while the journey thinking framework existed since Project T, the silent designers reflected that beyond a framework, there were no guidelines to help foster effective collaboration between the silent and internal designers. As a result, the gap resulted in a spontaneous shift of dynamics between the two groups. Nevertheless, patterns were identified based on both cases' observations to delineate their working relationship (Table 7.7).

Table 7.7 Summary of design roles across each phase

	Pre-program	Discover	Define	Develop	Deliver
Case 1: Protect T					
Case 2: SS program					
Collaboration models	ID from case 1 was asked to provide input into the scoping process, while case 2 was scoped independently	SD led and completed the research in case 1 while the SD in case 2 delegated the work to the ID	In case 1, ID led ideation while SD participated in ideation. SD played the co-facilitator role in case 2	Case 1's ID played a trainer role while case 2's ID played an advisory role	Case 1 did not proceed to deliver. Case 2's SD continued self-guided process as per develop

In Project T, the silent designers roped in the internal designer during the pre-program phase of project scoping. These conversations included the duration of the project, review of silent designers allocated, and type of outcome pursued. As it was the first service design project, there was no robust discussion on funding requirements and revenue expectations. In SS Program, the silent designers helmed the pre-program phase independently, where they had to establish the program's business case and objectives. As there was greater awareness of service design, the silent designers only had to complete a business request document covering their hypothesis of market gaps and revenue projections to secure funding from the senior management.

For the Discover phase, the silent designers played a lead role in completing all the required tasks in Project T, while the internal designer played an ad-hoc trainer role to provide guidance. The involvement of the internal designer was minimal in Project T as only one internal designer was allocated. The lack of internal design resources led to the silent designer leading the phase. For SS Program, the silent designer took a step back and played the observer role as they are less confident with direct user interactions, conducting research and collecting insights. The lack of confidence could be attributed to several factors. Firstly, in the SS Program, the silent designers were aware of the upcoming tasks and the difficulties due to their compulsory training. Based on their understanding, they could negotiate their level of involvement based on their skillsets and competencies. Meanwhile, the silent designers on Project T did not know what to expect and could only passively accept the assigned task. The differing exposure to training and innovation projects allowed internal designers to make a more informed decision of phases which they are comfortable leading. Secondly, the silent designers were the owners of the SS Program, while the internal designers were only invited to participate. The disparity in power dynamics (owner vs invited participant) meant that the silent designers had more bargaining power on activities to delegate. In contrast, the silent designers were obligated to support as they took a supporting role. Based on these considerations, the three allocated internal designers stepped up to lead and be responsible for delivering the work.

For the Define phase, the internal designer in Project T played the sole facilitator role for the ideation workshop, while the silent designers participated in the process. The internal designers led as the silent designers did not have the know-how to facilitate such workshops and had no prior experience doing so. In SS Program, both the silent and internal designers worked together with the external collaborators from the resident committee to frame the opportunities and led the ideation workshops to help generate multiple solutions. The silent designers in SS Program were willing and able to co-facilitate as they had seen similar workshops conducted during their training. Specifically, the silent designers attended one-day discovery, and half-day define & develop training where a mock-up case study was used to help them be acquainted with the process. Both cases benefited from the domain knowledge of silent designers as they could generate practical and applicable ideas. The exploratory ideation process matched the silent designers' applied lens and yielded tangible outcomes. However, it is worth noting that the silent designers from SS Program had better know-how of the implementation process and could identify implementable ideas based on Z Bank's infrastructure and technical limitations. The silent designers in Project T could only provide more generic perspectives.

Due to better training, exposure and processes in place, the two cases saw a different trajectory for the subsequent Develop and Deliver phases. In Project T, the internal designer continued to play a trainer role while the silent designers completed the tasks assigned. The case did not move into Deliver phase. It was aborted prematurely due to a lack of implementation capabilities such as processes to slot new projects into the bank's development team's workflow, funding to engage external developers and access to actual customer data to support the development. In SS Program, the silent designers played the lead role throughout Develop and Deliver, as domain knowledge is essential to ensure the timely launch of the product. They were able to take the lead as they already knew the steps involved to test and iterate from their prior training and had similar experiences in past innovation projects. The silent designers also felt more confident as they had a prototype where users could already see and interact, making the experience more tangible. With the renewed confidence from the silent designers, the internal designers slowly ease themselves out of the process, playing a coaching role whenever necessary and the customer advocate to ensure that the product's insights are applied adequately.

4.4 Mindset: Fear of Failure Impedes Exploration Critical to Service Design

Despite the increasing level of leadership recognition and top-down advocacy seen in the SS Program, Z Bank still failed to provide a safe environment that tolerates failure and promotes explorations, which were fundamentals of an innovative mindset, as pointed out by Lawson & Samson (2001). The silent designers across both

cases reflected that the Discover phase, where they needed to conduct fieldwork and synthesise data for insights, was the most challenging part of their service design experience. The challenge of the Discover phase was due to the fear of failure, and the underlying reason varies across the two cases. In Project T, the just-in-time training model resulted in significant knowledge gaps in the field, which frustrated the silent designers. Given that the internal designer was only coaching them on an ad-hoc basis, the back-and-forth clarification resulted in inefficiencies and made the silent designers unconfident. The silent designers also complained of not knowing what good "Discover" looks like, resulting in greater self-doubt and worries that their outcome might be inferior.

> *The fieldwork and synthesis require more expertise than what a crash course could provide. Was the insight we found insightful? We had a lot of self-doubts throughout the process.* NL, Product Manager (Project T)

Despite being trained prior, the silent designers in SS Program felt inadequate when asked to lead the Discover phase activities. The comments surprised the internal designers as the Discover phase had the most in-depth syllabus compared to other phases but yielded the least confidence from the silent designers. Therefore, whenever possible, the silent designers would rely on the internal designers to lead the Discover activities as they were assured of a good outcome. They would instead take an observing role to shadow the internal designers. Apart from the fear of failure, they were also worried about dealing with multiple unknowns, such as identifying the right persona group, asking the right questions, and acquiring good insights. As compared, the type of activities required for the Define phase, the brainstorming of ideas, and the Develop phase, the validation of ideas, appear more direct and with fewer variables.

5 Discussion

The two cases and the thematic analysis have allowed us to explore how service design was adopted through the lens of the innovation capability framework. In Project T, we highlighted numerous issues Z bank faced, such as a lack of formalised training and infrastructure for implementation while initiating the change. In SS Program, while there was a higher level of innovation capability across all dimensions, notable areas of improvement such as instilling long-term commitment from the senior leadership and onboarding more cross-functional talents to improve outcomes were identified. This section will build on the thematic areas identified earlier to discuss future implications and opportunities to enable better adoption of service design in the banking industry with a focus on the practice of silent designers.

5.1 Creating Viable Pathways for Design Leadership Across all Levels to Drive Long-Term Commitment

The lack of long-term commitments summarised in Sect. 4.1 was based on the observation of both cases. Because of the early stages of service design application, the senior leaders hesitated to commit resources to help Project T move into the Deliver phase. For SS Program, the senior leadership saw the benefits service design brings, but numerous areas still impeded the strategic application of service design.

Having a strong ambition and a clear vision at the board level allows organisations to embrace the strategic application of design (Shams & Lam, 2016). This can be driven in two ways: firstly, promoting designers into board-level roles. However, there is no career progression currently to showcase how design-related job roles could get promoted into senior positions that can impact board-level decisions. For example, referencing DBS Bank in Singapore, despite having a Chief Design Officer (CDO), the CDO is not appointed to the Group Management Committee, the top leadership brass of the bank. However, leaders across the business units and support functions such as human resources, legal, and audit are represented (DBS Bank, n.d.). Given the difficulty for senior design leaders to be promoted into board-level roles, another way was to encourage board-level executives to take up an "executive sponsor" type role to push for more substantial design commitments (Holloway, 2009; van Reine, 2017). The sponsor could provide input into the bank's ambition and vision and influence it to offer a long-term commitment necessary for service design to be further embedded into the organisation.

In addition to the current pool of senior management, more attention should also be given to the middle management as they are the next-level leaders that would step into senior leadership in the next few years. Unfortunately, according to the two case studies, the current selection of silent designers at a middle management level is made haphazardly with little consideration for aptitude. To effectively drive the strategic application of design, middle management with a higher propensity to take up executive sponsorship roles and serve as an advocate for design should be identified as part of leadership succession and be offered opportunities to serve in capacities such as Head of Transformation or Head of Innovation as they progress in their career. These roles would give these future senior leaders the necessary exposure before they are tasked with shaping the vision and ambition of Z Bank's strategy in the future.

Lastly, senior management should also be educated on service design's key tools and processes to ensure more successful case studies emerge from the service design projects. A better appreciation of the project outcome will bring more openness and less anxiety when making strategic decisions based on service design project outcomes. Separately, silent designers should also be trained to leverage quantitative methods to better appeal to the senior leaders when seeking their backing on initiatives.

5.2 *Systematise Good Practices for Silent-Internal Designer's Collaboration*

The spontaneous shifting roles highlighted in Sect. 4.3 can be attributed to three key reasons; disparity in power dynamics between the silent designers and internal designers, differing levels of training and exposure and availability of the internal designer resource. While there were varying pros and cons in the collaboration model across both cases, the findings prompt a rethink of how the silent designers should be involved and if a set of guidelines could be implemented to foster more effective collaboration.

Despite the spontaneous changes, more could be done to systemise the relationships between silent and internal designers. For example, frameworks such as the Design Management Absorption Model (DMAM) by Acklin (2013) could be leveraged to provide structure and aid in how silent designers learn service design. Instead of expecting silent designers to start practising immediately after training, Acklin (2013) recommended a buffer or assimilation process where the socialisation of the newly acquired knowledge and an extended risk-free practice period occurs. The inclusion of an assimilation phase could help alleviate the pain points felt by the silent designer on Project T, where they had to practice immediately after the just-in-time training. In addition, good practices such as those observed in the Define, Develop, and Delivery phases of the SS Program could be recommended to similar programs. At the same time, there are also opportunities to improve the trainer-trainee relationship seen in the just-in-time training model of Project T. The findings across both cases are captured below, organised by the phases of the journey thinking framework used by Z Bank.

In the Pre-program phase, the silent designer should involve the internal designers in an advisory capacity to ensure that the program is set up for success with the appropriate timeline, expectations and approaches. Rightfully, the silent designers should still own the business case and outcome, but they should not run the phase without input from the internal designers. The engagement of the broader organisation beyond the silent designers is aligned with Junginger and Bailey's (2017) perspective of uncovering hidden "pre-text" to explore the capability of service design fully.

In the Discover phase, given that it is commonly the phase where silent designers feel the least confident, more guidance should be given to ensure they feel adequately supported. For example, allow the silent designers to work alongside or shadow the internal designers to help them ramp up and gain confidence instead of being restricted by a lack of resources seen in Project T. An assimilation period could also be introduced here, as recommended by Acklin (2013).

In the Define phase, offer the silent designers a train-the-trainers program to equip them with essential facilitation skillsets to run better ideation workshops. Facilitation training is currently absent in the training program of Z Bank but is a critical aspect that should not be taken for granted. Given that current research on the teaching of facilitation skillsets to non-designers is still in its infancy (Henriksen

et al., 2020), early recommendations from Mosely et al. (2018) to frame and reframe the challenge and guidance to manage the messy, iterative and complex process (Henriksen et al., 2020) could be further explored.

In the Develop phase, the silent designers should work alongside the internal designers to run the experiments. Having the silent designers lead the phase would allow them to maximise their implementation knowledge and subject matter expertise. While the internal designers can take a more supervisory role, as seen in SS Program, they can also jump in and support the design production needs of the team if they need to create mock-ups and visuals to support the experiments.

For Deliver phase, the silent designer should also aim to take the lead. But instead of being hands-on, the silent designers should be focused on unlocking the right resource (such as tech developers, servers, storage and funding) from the senior management. Once the actual development begins, the silent designers could help remove any impediments (typical role of a scrum master) and attend the sprint review with the executive sponsor to offer feedback. Again, the silent designers are best suited to support the resourcing conversation as it would tie in with their work in the pre-program phase to help drive the program to success. The internal designers would play a more hands-off role here and attend the reviews as necessary.

5.3 Community of Practice (CoP) as a Safe-to-Fail Environment to Foster an Open Mindset and Enable Cross-Functional Learning

From the case presented above, it can be observed that the just-in-time and one-off training did not allow novice silent designers to practice service design and accumulate experience in a risk-free environment before taking on high-stakes, revenue-driven projects. These findings are aligned with the limitations of the design training programs in non-design organisations observed by Holmlid and Malmberg (2018).

We can consider forming a Community of Practice (CoP) to help silent designers learn and integrate service design practices into their work. The Community of Practice (CoP) concept was first proposed by Wenger (1998). A CoP is a group of individuals with a similar interest in a topic that comes together to fulfil individual and group goals. They meet regularly to share best practices and to advance their learning. The community participants are expected to make frequent interactions, exchanges and discussions. The CoP is useful for Z Bank's purpose as it would help silent designers learn from each other, share best practices and shortcut the time needed to gain greater mastery of the content. Furthermore, the applied nature of the best practices shared with the banking context is difficult to be acquired outside of Z Bank, making it compelling for the silent designers to attend.

The CoP would help address two main issues identified in the findings. Firstly, the CoP can help accelerate the growth of internal resources and lack of cross-functional talents, as highlighted in Sect. 4.2. By allowing more experienced silent

designers to teach other novice silent designers, teams can reduce their dependency on internal designers. Experienced silent designers can also practice and gain greater mastery of their knowledge. Within the community, the best trainers can be nominated as innovation champions to help push for greater awareness of service design across all levels of the organisation (Coakes & Smith, 2007). Instead of waiting for a top-down mandate by senior leaders to engage other functions, a bottom-up approach could also be possible to speed up the adoption of cross-functional talents into service design teams. Next, to resolve the fear of failure experienced by the silent designers, as mentioned in Sect. 4.4. A supportive community can allow the silent designers to talk through interim ideas and gain confidence before speaking to the senior management. Having an avenue to discuss with their peers could create psychological safety, which cannot be achieved by working with the internal designers or the senior leadership. The exchange would promote a more open mindset within Z Bank and alleviate the fear mentioned by the silent designers.

6 Conclusion

This chapter illustrates how service design was adopted in the banking industry from the perspective of the silent designers. The two case studies highlighted the evolvement of Z Bank's innovation capability across different parts of its transformation journey. We summarised four areas that the silent designers reflected from the empirical research. First, from the strategy dimension, while there was an inkling of weaving service design into the management's scorecard, it was still bounded by areas such as customer experience and not the broader strategic direction of the bank. Implementation of other frameworks has also diluted the bank's attention, impeding further service design integration. Secondly, while the improved training programs have grown internal capability, there is still room to enrich the resource of service design teams with cross-functional talents. Thirdly, while the journey thinking framework has existed since the first case, the lack of guidelines and processes to foster effective collaboration has led to spontaneous and haphazard shifting roles between silent and internal designers. Lastly, the fear of failure mindset has impeded the exploration of silent designers critical to service design.

Singapore's organisations are known to be fast and progressive in adopting best practices globally, and through the case studies, we have observed how Z Bank adopted service design approaches. Based on the finding, we discussed the creation of a viable pathway for design leadership, the systematisation of good practices for silent-internal designer collaboration and the building a Community of Practice (CoP) as a safe-to-fail environment. We hope the identified areas could benefit other banks and organisations embarking on a similar transformation journey.

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Chapter 8
The Present and Future of Service Design in Hong Kong: An Emerging Design Field

Bruce C. K. Wan

Abstract This chapter aims to provide a comprehensive understanding of the current service design landscape in Hong Kong. This study comprises information gathered from official statistics, gray literature, and interviews with government officials, design practitioners, and academics. Interview data is used to probe into the design practice in which the participants reflected on their professional journeys and discussed the capabilities of service designers. This study also examines the barriers and enablers of the current practice as well as the future development of service design. Three main barriers were identified that have impeded the adoption of service design in companies, namely the prevalence of a power hierarchy and silo, client disengagement, and high-risk aversion mindset. Additionally, three enablers were found to be conducive to service design integration: the shift to a human-centered business model, the demand for multiplicity design skills and knowledge, and building partnerships with stakeholders. Digital transformation and sustainability are the future considerations to foster sustained development of service design. Suggestions were made to foster sustained development of service design in Hong Kong.

Keywords Service design · Hong Kong · Design thinking · Human-centered design

1 Introduction

The field of design has evolved drastically over the last few decades with some design disciplines focused on the creation of artifacts and others on the process of value and meaning creation (Sanders & Stappers, 2014). Buchanan (2001) recognized four orders of design that transformed the design professions and education.

B. C. K. Wan (✉)
School of Arts and Social Sciences, Hong Kong Metropolitan University, Hong Kong, SAR, China
e-mail: bckwan@hkmu.edu.hk

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The first order is concerned with visual symbols and the communication of information through texts and images. The second order is concerned with tangible, physical artifacts, such as mass-produced consumer goods. The third order is about the creation of experiences or activities that are integrated into a new understanding of what a product is or could be. The fourth order is concerned with the organization of systems and environments, where interactions take place. As the design discipline continues to evolve, Mortati (2022) further expands on Buchanan's concept by embracing mixed types of agents and data, such as human, non-human, and mathematically engineered models, into a design process. More importantly, design solutions happen not solely from the designer's perspective but become apparent through an iterative process of co-discovery and co-creation between the agents and data, and between the laboratory and in the lives of individuals and society. As an emerging design discipline, this chapter explores how service design is located within an intricate network of knowledge, practice, environments, and agents.

Service design was coined by bank executive Shostack (1984) in an article published in the Harvard Business Review that introduced service blueprint as a practical tool for service developers to identify managerial problems and explore market opportunities before implementation. While expectations and perceptions of customers had been the main concerns for service business providers (Parasuraman et al., 1988), the seminal works experience economy (Pine & Gilmore, 1999) and service-dominant logic (Vargo & Lusch, 2004) broadened the horizon of the service industry by highlighting the importance of value co-creation between customers and service providers. Meanwhile, service design emerged as a new design discipline in the West, notably with the establishment of service design education and research programs in universities, academic and professional service design communities, and conferences (e.g., ServDes, the Service Design Network, Service Design Days) (Mager, 2007) which laid a solid foundation for sustainable growth.

Service design has become an established design discipline in the Western world with more than two decades of research and practice. A report on the future of service design (Mager, 2020) highlighted the need for creating a resilient and sustainable future by building a transformative purpose-driven economy. Several propositions were made to reach the goal, for instance, using advanced technologies, establishing new KPIs, and involving cross-disciplinary experts and C-level decision leaders in the development of ethical, profitable, and sustainable services.

In contrast, the service design scene in Hong Kong (HK) is rather fragmented despite the service industry being the heart of HK's economy, which accounts for more than 93 percent of GDP (HKSAR, 2020) as opposed to around 70 percent in the Western world and 60 percent in China (Majumdar, 2019). The industry covers a wide range of business sectors, which include banking and finance, food and beverage, insurance and healthcare, and tourism and transportation. As much as 98 percent of business establishments are small and medium-sized enterprises (HKSAR, 2020). Surprisingly, service design in HK is still a growing area of design practice largely unexplored by enterprises. To the best of the researcher's knowledge, no academic literature has been published and no systematic archive is available on the current status of service design in HK. Therefore, the goal of this chapter

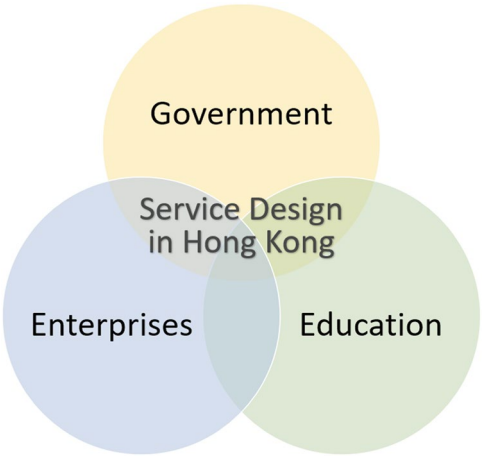

Fig. 8.1 The three spheres of service design domain in HK

is to provide a comprehensive understanding of the current service design scenery in HK from the perspectives of government institutions, entrepreneurs, and education (Fig. 8.1), which are the key stakeholders in establishing the foundation for service design (Mager, 2007, 2020).

The following section introduces the methods used, then identifies the service design culture and its recognition in HK. It provides an overview of how service design was promoted to businesses, designers, and the general public using data and information from official statistics and gray literature. Then, the study probes into the current practice of service design from insider perspectives. The section discusses how service design is being practiced in private and public sectors using data collected from expert interviews. The last section explores the future development of service design based on the reflection from current practice. The section includes information derived from current literature and interviews with practitioners and academics. This article concludes by proposing four recommendations that may contribute to the flourishing of the service design industry in HK.

2 Research Methods

This study comprises information gathered from different sources which include official statistics, gray literature, and interviews with government officials, design practitioners, and academics. The official statistics and gray literature include information provided by the Census and Statistics Department (C&SD HKSAR), and policy papers and reports from public and private institutions. On the other hand, interviews with design practitioners and leaders provide insider perspectives on the scenery of service design in HK. A semi-structured interview was conducted with the goal of understanding the current enablers and barriers of the practice and the future development of service design in HK. Since the post of service design is not

well recognized in private sectors, this study interviewed designers who are also practitioners of design thinking and experience design. Using convenience and snowball sampling, the author invited 10 designers (five males and five females), leaders, and academics who are experts in user experience design and service design (see Table 8.1 for the list of participants). The purposive snowball sampling strategy is an effective way to gather insider knowledge from current design practice (Biernacki & Waldorf, 1981). Participants' experience in service design-related disciplines ranged from 5 to 20 years with around 10 years of practice on average. All participants received tertiary education, with six of them having graduated from design-related disciplines. The design-related disciplines included fashion design, photography, advertising, design strategies, and human-computer interaction, whereas the non-design disciplines included organizational communication, applied physics, chemistry, global health, and food policy.

Interviews were conducted online in English, and each lasted for around 90 min. The interviews were audio recorded, then transcribed into verbatim transcripts for thematic analysis (Guest et al., 2012). The interview questions covered various areas of the service design practices and challenges as listed below:

- the background of the participant and the company,
- their current practice of service design,
- their relationship with other project stakeholders,
- the role of the service designers as opposed to other designers,

Table 8.1 List of participants

ID	Name (Pseudonyms)	Gender	Education	Job title/ Position	Company nature/Industry	Experience (Year)
1	Anson	M	MDes in design strategies	Lead UX	Insurance	9
2	Alison	F	MSc in interaction design	Managing director	Business consultancy	20
3	Hanna	F	MSc in food policy	CEO	Food and beverage	8
4	Karen	F	MSc in global health	Managing director	Service design consultancy	6
5	Martin	M	MDes in advertising	Design director	Digital and design consultancy	7
6	Morrison	M	BSc. in applied physics	Managing director	Advertising	5
7	Peri	F	BA in organizational communication	Managing director	Service design consultancy	20
8	Tony	M	MPhil in design	Design thinking evangelist	Government institution	7
9	Bernice	F	D. Arts in design	Academic	University	10
10	Jimmy	M	PhD in design	Academic	University	18

- the design processes and methods used,
- barriers and enablers encountered in their practices, and
- their views on the future development of service design.

Four participants worked in design consultancies and the other six participants worked for specific service industries including insurance, food and beverage, advertising, and institutions. Four participants were owners of their companies.

3 Locating Service Design in HK among UX Design and Other Design Disciplines

Design, which takes part in the creative industries, has long been recognized as one of the most dynamic economic sectors in HK. The creative industries (CIs) comprise seven other knowledge-based domains which include advertising, architecture, digital entertainment, film, music, printing and publishing, and television (C&SD HKSAR, 2020a). In 2019, CIs accounted for 28,780 establishments with about 136,880 practitioners engaged and contributed to 2.2% of GDP. The design domain, which covers traditional design disciplines such as spatial, games, multimedia, product, communication, fashion design, etc., is considered to be an important driver that is increasing the competitiveness of products, and business value. Recent data shows that the employment in the design industry was 18,590 and contributed $4.5 billion to GDP in 2019 (C&SD HKSAR, 2020a).

On the other hand, the government recognized financial services, tourism, trading and logistics, and professional and producer services, as the four key driving forces leading HK's economic growth (C&SD HKSAR, 2021). These four key service industries generated added value of $1545 billion (56.4% GDP) and employed 1,747,500 persons (88.6% of total employment) in 2019. More importantly, the service industry, as a whole, contributed more than 90% of HK's GDP. Although service design could be the new design discipline that fosters growth and positive transformations to businesses and the economy, it has not yet been officially recognized as an established design practice (i.e., no data on the service design industry is available at the C&SD HKSAR). Also, no dedicated service design program was offered at the undergraduate and post-graduate levels. Only some components of service design, such as a participatory design process, personas, journey map and stakeholders map, were introduced in other design programs such as interactive media and social design.

Service design in public sectors had been sparingly promoted by the government. For example, service design had been introduced to envision public service of 2020 at the Public Sector Reform Conference 2010 (Mager, 2010) and the Efficiency Unit (https://www.effo.gov.hk/) is the government office that is responsible to promote service design in government bodies. The government of the Hong Kong Special Administrative Region (HKSAR) encourages the development of CIs, and set up a publicly funded organization, Create Hong Kong (CreateHK), in 2009 to

provide dedicated services with the goal of nurturing creative talents, facilitating startups, exploring markets, and promoting HK as Asia's creative capital (C&SD HKSAR, 2020b). CreateHK is responsible for the administration and management of various funding schemes including the CreateSmart Initiative, Design Incubation Programme, and Hong Kong Design Centre. The CreateSmart Initiative is a funding office that provides financial support to projects conducive to the development of local creative industries. The design incubation program, on the other hand, is a two-year program that supports startups to develop innovations by providing financial support, mentorship, and network opportunities. The Hong Kong Design Centre supports flagship design events such as Business of Design Week (BODW; http://bodw.org) and Knowledge of Design Week (KODW; http://kodw.org). BODW is an annual week-long design event that includes design conferences, forums, seminars, competitions, and exhibitions, whereas KODW is another week-long annual event that gathers business leaders and experts across design, business, and academia to explore how design can solve complex challenges and create value for society.

Meanwhile, technology has become one of the core vehicles for positive changes and innovations. The HKSAR established the Innovation and Technology Commission in 2014 to foster innovation by nurturing technology talent and supporting technology-centric research and development. The bureau is responsible for establishing policy, providing funding, and facilitating the integration of technology into the industrial and commercial sectors. Although designers could contribute to these technology initiatives, realizing it may require specific skills and knowledge.

The order of design knowledge, introduced in the beginning of the article, reflects the current landscape of the design field in HK. For example, the BODW has a program related to Buchanan's orders of design knowledge (graphic, industrial, interaction, and environmental design). On the other hand, the KODW aims to equip designers, industry leaders, and other stakeholders with design thinking, participatory practices, and user-centered methodologies, which are practical applications of the principles outlined in Mortati's fifth order of design. Service design, promoted alongside other similar design fields such as experience design and social innovation, necessitates collaboration and learning from diverse project stakeholders (Lee, 2020; Roto et al., 2021). Having emerged from operations management and marketing (Pine & Gilmore, 1999; Vargo & Lusch, 2004), service design now addresses data (both input and output), intelligent systems, relationships, and perceptions. The process often involves multiple stakeholders and necessitates an iterative process of continuous learning and improvement.

The government officially endorses it as an approach for innovative problem-solving to enhance the experience of public services (Soo, 2018). In addition to the HKSAR support, a few private companies and associations also contributed to the advocation and promotion of service design. There are several events such as design jams (https://www.jamhk.design/), and professional conferences (https://www.makestudios.com.au/case-studies/service-design-hong-kong), and workshops (https://dtinaction.org/). Despite the effort contributed to the promotion of service design, the interviews with design practitioners in this study revealed that service design is still not well recognized by the service industry, especially small and

medium-sized enterprises (SMEs). Also, the interview participants, especially design consultants, often referred to themselves as both service designers and UX designers because their projects often involve both tangible and digital touchpoints. In addition, the lack of a dedicated education program and public promotion may contribute to the low awareness of the profession. The next section discusses the hurdles and opportunities in adopting service design practice as perceived by practitioners.

4 Service Design from Practitioners' Perspectives

This section reports the current practice of service design from an insider perspective. The responses about participants' years of experience in practice, their role in service design, and design methods adopted, shed some light on the service design practices across different sectors. It is important to note that their practices emphasize building a sustained business ecosystem, adopting a user-centered and participatory design process, and delivering customer experiences via touchpoints which are fundamental to service design (Mager, 2007).

It is noted that some of the respondents had little or no academic background in design but have had to take on roles that require them to perform in the capacity of a service designer or supervise service design projects. They attribute their move to the service design field to company demand or personal interest. The data shows that the duty of the service designer across different industries is not well defined, and this may be because the field is relatively new, and the role is not distinguishable from others like user experience and user interface design. Also, many participants found that their job required them to work as both service and user experience designers, for instance, addressing complex service systems, taking perspectives from different stakeholders, and conceptualizing digital touchpoints with user experience in mind with the use of design thinking methods. This may be the reason why the participants used service design, design thinking and user experience design interchangeably in their interviews.

Moreover, the expectations for the service designer vary depending on whether they work in consultancies or as in-house designers. As designers working with consultancies, they are expected to be knowledgeable about other fields and be able to act as a generalist and strategist in a design project. As in-house designers, in contrast, being knowledgeable about service design is not enough as they need to be well-versed in the industry. They are expected to develop and implement the user journeys and touchpoints. This distinction also has implications for the type of relationship maintained with clients and the way projects are executed. Consultancies may have more control over a project once the expectation of a client is defined, but an in-house designer will be more inclined to follow the bureaucratic demands of corporate organizations which may affect the speed of delivery. Consequently, major barriers and enablers to service design in Hong Kong are highlighted and discussed.

4.1 Barriers and Challenges to Service Design in Current Practice

Responses from the participants show that there are three major barriers to service design in Hong Kong. While barriers refer to more concrete obstacles, challenges are related to more abstract limitations that impede the development and practice of service design in companies.

4.1.1 Power Hierarchy and Silo

Being a notoriously fast-paced city, HK is portrayed as a global innovation and technology hub in Asia. However, the participants expressed that service design is lagging far behind other places. For instance, Martin found that the potential of service design is seriously undervalued by industries in HK compared to other Asian countries. Many local companies still understand design as a traditional "making" discipline and maintain the vendor-client relationship. In contrast, service design and design thinking are highly valued in Western countries, and value co-creation (Vargo & Lusch, 2004) has become a new norm for foreign companies (e.g., Sun & Runcie, 2016). "The client-vendor relationship is the biggest hurdle that local companies need to get through; many companies are working in silos with little interest in finding synergy using co-creation," explained Martin (designer director at a digital and design consultancy).

One important barrier is the power hierarchy and silos within a company which can be detrimental to service design. Anson (lead UX in an international insurance company) pointed out that implementing service design would allow synergistic collaboration among different functional teams in his company.

> *I believe service design could help my company to create synergy among different functional teams because insurance services are very complex and therefore involve many touchpoints. It is a big challenge for my company to ensure consistency among different touchpoints. Moreover, these touchpoints fall under different functional units and there are tensions between them. Currently, a vendor-client relationship exists within the company, and designers' voices are not being heard. For instance, a functional unit may impose unrealistic goals and provide only limited time and resources, which leaves no room for design exploration.*

4.1.2 Client Disengagement

Interview data showed that many clients still have limited involvement in the project process. Tony, a design thinking evangelist at a government institution, found that many SMEs under-estimate the power of design thinking as a user/customer-centric approach in their business. He found that many SMEs were challenged to

incorporate the design thinking process into their business. Likewise, Morrison (managing director in a digital advertising consultancy) expressed difficulties in engaging local clients: "*Compared with the C-suite for multinationals, it is difficult to get local SME owners to be physically involved in projects; therefore, we dispatch teams of designers to work in clients' offices.*"

Peri (managing director in a service design consultancy) also found a collaborative partnership with clients very important for business:

> *We were considered as a service vendor, but now we only work with clients who are proactive in establishing a collaborative partnership; however, not many companies are ready for it. Also, tedious effort is needed to develop a trustful relationship with our partners.*

To overcome this barrier, Alison (managing director in a business consultancy) will engage in a collaborative partnership by holding shares of startup companies: "*It happens that we will invest in some startup companies if we see potentials in them.*"

4.1.3 High Risk Aversion Mindset

Both Martin and Peri found that high risk aversion is the challenge that impedes local companies from incorporating service design into their business: *"Although service design can lead to positive transformations, the process may reveal pain points that the company is not ready to face."*

Nevertheless, service design consultancies embrace risk aversion with flexible infrastructures and strategies. For instance, Peri will first work with a general design strategist who is capable of identifying design opportunities before introducing a suitable design specialist for a project. Alison and Hanna (food service consultant) prefer a small design team so that they can provide highly customized and agile services to their partners. Also, implementing service design entails a change of mindset of all stakeholders (Stickdorn et al., 2018) which may trigger risk aversion. The participants recognized some characteristics of a design thinking mindset which include having empathy, curiosity, and spontaneity, being welcoming to growth and uncertainty, believing in collective problem solving, being able to analyze problems from different perspectives and granularities, and being critical and reflective. Indeed, cultivating such a mindset was considered as the most important challenge for adopting and advancing service design.

> *Not only the designer but also clients and all stakeholders need to have such mindset to embrace service design,"* asserted Alison. *"Also, resistance to change may be fatal to a business! With the digital transformation, competitors can come from very different industries. For example, Uber expanded its ride-sharing business to food and package delivery, and Foodpanda established virtual grocery malls in addition to its food delivery service.*

4.2 Drivers and Enablers of Service Design in Current Practices

Responses from the participants show that there are three major factors that drive and enable the growth and development of service design in Hong Kong. While the drivers inspire and lead positive changes, the enablers support the advancement of service design in companies.

4.2.1 Change of Job Requirement

The participants entered their career mostly from two streams. Those who received formal design training expressed that they gained awareness and knowledge in service design only during their postgraduate studies. Some of them practiced traditional/classical design (e.g., advertising and product design) before moving to service design. For instance, Martin expressed that he found that his prospects as a creative director became limited after eight years of practice before launching himself into experience and service design. Some of the participants found themselves involved in service design when their work called for the need for a sustained human-centered business and ecosystem. The change of job requirement and project nature had led them to become service designers. For instance, Morrison turned his advertising agency into an experience and service design consultancy when a new investor observed the need to adopt design thinking methodology in their services. Peri, who found the need for advocating human values when she was a business analyst, eventually turned her company into a service design agency. The participants mentioned that many of their projects now involve co-design sessions with their clients and have observed a significant shift from classical design practice to design thinking.

4.2.2 Multiplicity of Skills and Knowledge

One key finding is that designers play different roles in a service design project, especially in design consultancies. Martin referred to his colleagues as experienced design consultants who complement their design skills with a broader mindset such as participatory and agile thinking.

> *In our company, we encourage everyone, including the client, to work together to solve complex business challenges. It feels like working in a highly agile and creative startup with the support of large enterprise capabilities. Our designers need to be more than just conventional designers.*

Karen, who works as the managing director in a small-sized design consultancy, also recognized her colleagues as strategic and service designers. *"All my colleagues are flexible enough to work together with clients to address abstract*

business problems, then refer the clients to a domain expert when applicable." Designers with such capabilities can be known as "(π) pi-shaped" people who have disciplinary depth in two areas and the ability to work outside of their core area (Connor et al., 2017). Connor and his colleagues (2017) argued that having a dual depth of knowledge would allow a person to transcend traditional disciplinary know-how to disruptive and innovative applications. Interviews with the participants showed that having multi-disciplinary knowledge within and beyond design is advantageous to be a service design consultant because the position requires the designer to work on projects with diverse design challenges. In contrast, a "T-shaped" profile may suffice for an in-house service designer, especially when the job nature is highly specified. For instance, Anson mentioned that each designer has a clear role in his unit.

> *User interface designers are responsible for the front-end development, whereas our user experience designer focuses on designing the user journeys and touchpoints. Our user experience designer needs to work closely with other units such as business analysts.*

Hiring an external design consultancy can bring value to the companies even if they have an internal design team: "Our 'pi-shaped' designers can contribute to these companies by organizing participatory and co-design workshops with all concerned departments and provide them with specific know-how not available in their company," mentioned Morrison. In sum, a competent service designer needs to play multiple roles in a project: a stimulating facilitator who supports and guides participants in meetings and workshops, a dependable consultant who builds trustful relationships among multidisciplinary team members, and a skillful designer who can create desirable, feasible, and viable solutions.

4.2.3 Building Partnership

The participants, especially those in consulting firms, believed that the client-vendor relationship needs to change to a partner relationship for an effective service design project to take place. Karen shared how she works with her clients: *"I think that the important thing here is the way we challenge. It's not confrontational. It's like partners. That's important, because it's not always going to happen our way and understanding that is where we can have an effect"*.

In the same vein, Peri felt glad that there was a strong sense of trust established between the designers and the clients:

> *Our role has changed over the years that we've been in Hong Kong. Initially, we were engaged very much as a vendor, but we've managed to change the nature of our engagements to a collaborative partnership. We no longer provide design solutions but elicitation, facilitation, and empowerment to enable our clients to find answers for themselves. This has helped us in a lot of ways.*

The partner relationship is beneficial to build loyalties and encourages positive word-of-mouth recommendations.

5 Future Considerations for Service Design in Hong Kong

This section reports the participants' views on the future considerations of service design. First, what are the emerging considerations regarding service design? And second, are there any new design methods that are necessary to address the emerging considerations? In addition to the design practitioners, this section draws particular attention to the interview data provided by Tony, Bernice, and Jimmy who work in government institutions and universities because they are policymakers, academic researchers, and tutors who are involved in training service designers and contribute to local service design development. The participants raised two considerations which service designers should be aware of to advance the practice: digital transformation and sustainability. Indeed, these considerations are gaining traction in service design communities (see Anderson & Rainie, 2018; Mager, 2020; Patrício et al., 2018).

5.1 Digital Transformation and Sustainability as Emerging Considerations

The participants considered digital transformation and sustainability to be the two important aspects that guide future service design. Design practitioners are more concerned with the current imperatives of digital transformation. Here, advanced technologies can be considered as a means for the sustainable end. The use of smart technologies, such as artificial intelligence, machine learning, big data analytics, blockchain, and cloud computing, will become one of the key driving forces that lead service innovation and thereby transform user experiences and societies. Many interviewees considered the COVID-19 pandemic to be the accelerator of such changes, for instance, the increased use of service robots and touchless services, and digitalization of service system. The use of smart technologies can increase effectiveness and efficiency, provide highly personalized services, and support well-being of customers and service employees.

However, using these technologies may also prompt negative experiences, such as social isolation and addiction (Anderson & Rainie, 2018; Turkle, 2011). Designers need to be more cognizant of both opportunities and possible harm that may be caused by these technologies. For instance, academics are more concerned about the vulnerability of society and the environment, and thus discussed how the smart technology-enabled services should address potential global and societal crises such as extreme climate, pollution, aging society, and social inequality. Bernice was more skeptical about the digital hype: "*I am more concerned about the side-effects of the digital transformation hype. For example, many jobs will be replaced by machines with AI, and social media creates social isolation. It is the people who*

need to be smarter, not technology!" In addition to addressing potential crises, Jimmy, another design researcher, argued that future service design should foster the flourishing of individuals, communities, and societies. "*Happiness is not equated to the absence of pain; service design needs to make a positive impact and transform people, animals, and the world! We need to focus more on well-being rather than solely on economic growth,*" stated Jimmy. In the same vein, Peri urged service designers to aim for a higher purpose and sustainable societal transformation rather than solely contribute to capital growth.

5.2 Design Methods and Approaches to Cope with Future Considerations

The participants had divergent opinions on the design methods and approach to address the emerging considerations. Some of the participants deprecated the need for any new design method, for instance, Bernice, Karen, and Martin, who believed that current design thinking tools are enough to serve the purpose, but designers need to strengthen their mindset. They found that empathy is the most lacking mindset among designers. "*To me, designers are too obsessed with design methods; they need to learn how to gain insights by immersing themselves in a situation,*" Bernice opined. Karen argued that designers need to assimilate themselves with existing design methods so that these methods become their inherent skills. In contrast, Jimmy, Tony, and Morrison shared a different view because the emerging considerations inevitably entail new knowledge and design methods. For instance, digital transformation requires designers to be familiar with data science and data visualization; probing into societal and environmental vulnerability and design for human flourishing also requires designers to apprehend related domain-specific knowledge such as, ethics and behavioral economics.

As service design is gaining depth and complexity, Jimmy posited that future service designers need to be equipped with design bridging tools to fill the knowledge-design-development gaps. The purpose of the bridging tools is to facilitate interdisciplinary collaborations, for instance, incorporate knowledge and conceptual frameworks from other disciplines (e.g., bringing cognitive, behavioral, and positive psychology into design practice), and enable designers to work with data scientists (e.g., envision machine learning and artificial intelligence-centered innovation). Additionally, some service designers may need to become experts in a particular industry or take a specific role within a service design process (e.g., expertise in exploratory research, generative research, or evaluative research). For instance, Morrison referred to the need for a service designer specific to a particular domain such as fintech, healthcare, government services, food and beverage, hospitality, and tourism because each domain has its code, norm, and practice.

6 Discussion

This is the one of the first academic articles probing into the service design scene of HK, if any. Despite the service industry accounting for more than 93 percent of local GDP, service design is still an emerging field of practice when compared to other fields that share human-centered design methodology and approaches. Service design is promoted by the HKSAR alongside design thinking, experience design, and social innovation. However, information related to these design practices is fragmented and a dedicated service design program is yet to be offered in higher education, so this study reports a comprehensive view on the present and future development of service design in HK. This article is composed of information gathered from government reports, official statistics, and interviews with government officials, design practitioners, and academics. This section synthesizes and reflects on the issues discussed and then proposes directions that can strengthen the development of service design.

Despite the HKSAR having put significant resources and effort into promoting human-centered design, service design still receives insufficient attention from the service industry. There is little doubt that building a healthy service design ecosystem requires dynamism and equilibrium across different functional units (i.e., key stakeholders). Therefore, measures need to be taken to strengthen the foundations that are favorable for service design. From a macro perspective, such an ecosystem involves close connections between government institutions, professional communities, and organizations, private companies, social enterprises, and educational institutes. More connections between these stakeholders can foster a synergistic effect. In the education sector, efforts are being made to advance the field. The first undergraduate and post-graduate programs dedicated to service design have just kicked off at the Hong Kong Polytechnic University in 2022. The curriculum aims to cultivate both social and service designers who are equipped with advanced technological skills and aspire to cultivate positive transformations around the world (see https://www.polyu.edu.hk/sd/study/study-at-polyu-design/). More than adapting to the change, service design should be able to create sustainable and desirable futures.

The results in this study resonate with recent findings from other parts of the world (e.g., Anderson & Rainie, 2018; Mager, 2020). The first is to build a culture that welcomes organizational change by reducing silo practice and power hierarchy within and among different functional units in organizations and communities, to promote and fully benefit from service design. The executive level should embrace the value of service design and thereby create a culture that is favorable to exploration and innovation. The pro-innovation culture consists of client participation and experience co-creation with project stakeholders to ensure a quality service (Forlizzi, 2010).

Second, in addition to the four key service industries (i.e., financial service, trading and logistics, tourism, and producer and professional services), service design can also contribute significantly to public services (e.g., healthcare, social welfare, transportation, and housing) and social innovation (Lee et al., 2013; Lievens & Blažević, 2021; Pfannstiel & Rasche, 2019; Stickdorn & Schwarzenberger, 2016).

HK has some of the most active FinTech product/service users in the world (Ernst & Young Global Limited, 2019), and was ranked number one for international arrivals globally in 2019 (Yasmeen, 2019). However, there are a few deep-seated economic, societal, and political problems particular to HK, for instance, wealth and income inequality, low housing affordability, lack of upward mobility, an aging population, and poor psychological and mental wellness (Shek, 2020). Service design may open up new avenues to resolve these problems with cross-sector partnerships between industry, nonprofit, and government for mutually beneficial outcomes. To this end, more research is needed to ensure that ethics, equality, transparency, resilience and sustainability can be incorporated into the local cultural environment so that service design can contribute to the creation of a new social service economy (KODW, 2021).

Third, service design needs to incorporate digital transformation (Thomson, 2020). HK is ranked in penultimate position among other Asian countries regarding AI preparedness although its contribution to scientific research is much more significant (Pau et al., 2017). Computing literacy on emerging technologies can be a valuable skill for service designers so that more service innovations can be driven by these technologies. Given that HK is only a small city, one opportunity is to strengthen the connection with Greater China and other ASEAN countries through the Greater Bay Area (GBA). The GBA initiative (https://www.bayarea.gov.hk/) is a collaborative scheme established by the Chinese government to link the nine cities in Guangdong's Pearl River Delta, Macau, and HK into an integrated economy and world-class business hub. In 2018, the GBA accounted for 12 percent of GDP for all of China and ranked the 12th biggest economy in the world. It is envisioned as an integrated economic area aimed at taking a leading role globally by 2035. As the most internationalized city in China and the world's freest economy (Gwartney et al., 2021), HK will be the international innovation and technology hub and serve as a gateway for multinational companies wishing to access the Mainland. Beyond economic growth, youth innovation and entrepreneurship can use this opportunity to combine the strengths of advanced technology with service design methodologies to build a more healthy and sustainable future.

7 Conclusion

To conclude, this chapter provides an overview of the service design scene in HK stemming from the lack of previous research on and data specific to this area. Although the service industry represents the largest economic sector, service design is still in its infancy. This study showed there has been a persistent interest from industries, and as a response to this, developing new educational programs and bootcamps which focus on the service design will probably provide a healthier development of the service design industry and thereby, offer various opportunities for both academic and professional research to take place.

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Chapter 9
Four Levels of Service Design, "Interaction, Function, Organization, and Social Transition": Cases of the Agrifood System in China

Fang Zhong

Abstract With the development of China's service economy, service design has attracted increasing attention, and professional design institutions regard it as the direction of innovation. However, there is an obvious gap between the application of service design in industry and the academic research of service design. In this paper, service design is analyzed on four different levels: (1) the micro-level, or the interaction/user experience design; (2) the meso-level, or the inward functional design; (3) outward organizational design; and (4) the macro-level social transition design, aimed at changing the environment in which service organizations are located. This paper describes the present situation of service design in China's agrifood system and discusses both the current opportunities and challenges of service design at these four levels.

Keywords Service design · Agrifood system · Interaction design · User experience design · Organizational design · Transition design · Social innovation design

Different from product, spatial, and graphic design, the term "service design" was not first put forward by designers (Shostack, 1982). Rather, it entered the professional design field nearly 10 years after the term was coined (Hu & Li, 2019). This means that service design has been an interdisciplinary topic from the beginning. With the transformation of industrial structures in developed western countries (Haksever & Render, 2013), economics, business management, service science and other disciplines all regard "service" as an important research field (Hu & Li, 2019). In turn, this affects both design research and education. However, recently, research on service has begun to go beyond the economic field, and the importance of public and community services has garnered greater attention. In this way, public

F. Zhong (✉)
The Academy of Arts and Design, Tsinghua University, Beijing, China
e-mail: zhongfang@mail.tsinghua.edu.cn

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management and sociology have become difficult to bypass when studying service design. Meanwhile, the popularization of digital technology has made the traditional primary industry and secondary industry "servitization" rapidly, which makes service design even more complicated. This chapter will take the agrifood system as its specific subject and analyze both the opportunities and challenges of service design on four different levels: interaction, function, organization and social transition.

1 The Agrifood System: A Complex System

Agriculture and the food system are related, but they are not necessarily equal subjects. Agriculture refers to the industry of raising animals and cultivating plants. Some of its final products become food for people; these include grains, vegetables, meat, tea, and more. Other products, however, become raw materials used in manufacturing, such as cotton and linen for textiles and corn for bioethanol.[1] Therefore, agriculture is much larger than simply producing food. The food system obviously involves all the many elements related to food, including production, processing (manufacturing), distribution, consumption (service industry), and waste disposal (as a part of public service).[2] However, food production includes not only traditional food production with agriculture as its source, but also non-agricultural food production, such as synthetic foods, which are gaining increasing attention at present. The term "agrifood system" is a combination of the two words, and the relationship between them is shown in Fig. 9.1, below.

In the past two decades, the popularization of information technology in China has also fundamentally changed China's agrifood system. On the one hand, agricultural production and food processing are gradually realizing industrial digitalization; on the other hand, digital consumption has become the key driving force

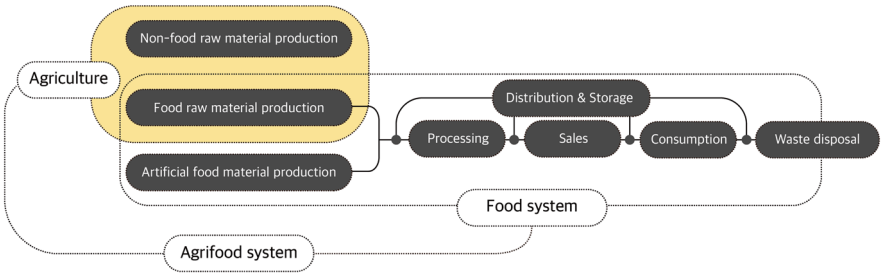

Fig. 9.1 Agriculture, the food system and the agrifood system

[1] See https://en.wikipedia.org/wiki/Agriculture

[2] See https://en.wikipedia.org/wiki/Food_system

behind promoting the digital economy.[3] Moreover, the transformation of food-related consumer services has led to a quite prosperous industrial innovation, especially in terms of food retail and the catering industry. Because of the characteristics of food itself and its significance to the daily lives of Chinese people, food sales and consumption based on the internet have comprised the main challenge of e-commerce in China. Looking at this from the perspective of the agrifood system, there has indeed been a rapid innovation in both business and service models, mainly in retail and catering, in the past 10 years. Driven largely by market competition, digital technology has completely changed China's agrifood system, promoted industrial innovation, and created a substantial demand for designers, including service designers.

2 The Agrifood System Within Service Design in China

Service design originated in the early 1980s within the field of commercial services, and then it gradually gained recognition worldwide and entered various fields. In China, service design was integrated into design education and practice relatively late, and its influence on the public at present is relatively small.

In 2011, the Academy of Arts & Design at Tsinghua University began to cooperate with the Service Design Network (SDN) and launched an international course "Service Design", which was the first time that service design officially appeared in China's higher education system. By 2019, a total of 31 universities in mainland China had launched service design courses (Wang, 2020). However, neither a well-defined undergraduate nor postgraduate education framework for service design has yet to appear.

From a research point of view, service design related to agriculture and food has recently become a hot topic in design research. In the China National Knowledge Infrastructure (CNKI), the largest Chinese academic retrieval platform, 275 documents were obtained by cross-searching with the keywords "service design" and "agriculture", and the growth trend was obvious after 2012 (Fig. 9.2). Next, cross-searching with "service design" and "food" as the key terms, 114 documents were obtained, and the growth trend here was also clear (Fig. 9.3).

Even more noteworthy, of the 389 papers on "service design * agriculture" and "service design * food", 65% are dissertations. Taking "service design" as the only keyword, a total of 6061 documents were obtained, of which 2309 were dissertations, thus accounting for 38%. Comparing these different results, one can conclude that, within the emerging service design research field, agriculture and food have received more attention than average.

After conducting an in-depth analysis of these papers' keywords, it was found that among the 389 articles on "service design * agriculture" and "service design *

[3] See http://www.gov.cn/xinwen/2022-01/18/content_5669004.htm

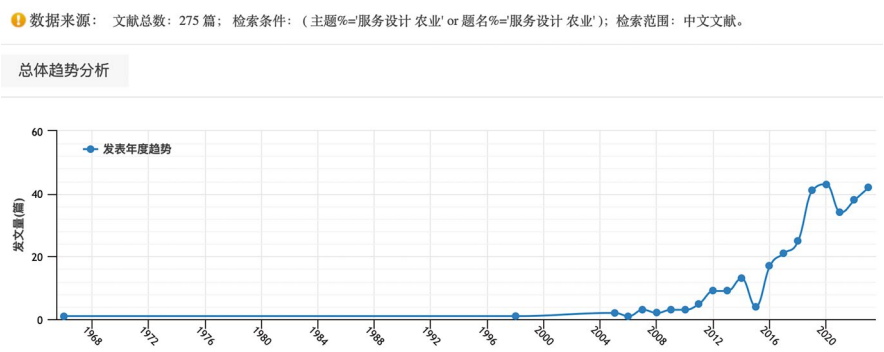

Fig. 9.2 Distribution of the documents with the keyword "service design * agriculture" in CNKI. (Screenshot taken on January 31, 2023)

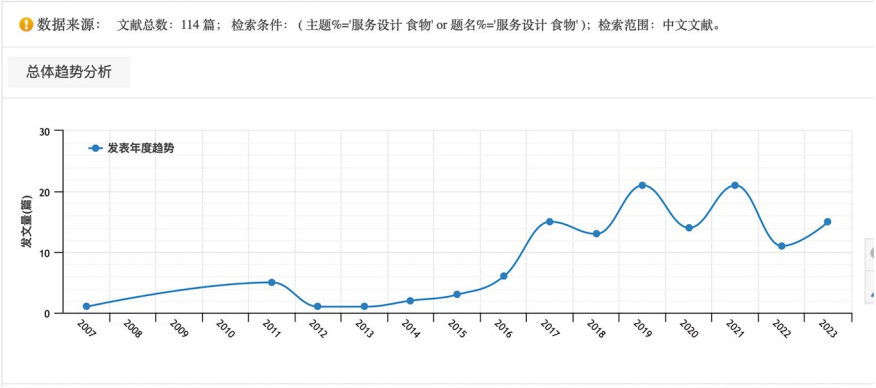

Fig. 9.3 Distribution of the documents with the keyword "service design * food" in CNKI. (Screenshot taken on January 31, 2023, 21.52.54)

food" in CNKI, about 30% had the keywords "sustainable design" and "social innovative design"; other related keywords included collaborative service, transition design, and more.

3 A Model of Four-Level Service Design: Interaction, Function, Organization and Social Transition

To understand service design's future development path in China, we first need a deeper understanding of the terms "service design" and "service". Evolving from an activity, service has developed into a tertiary industry and has now become the pillar of economic activities in developed countries; however, the definition of "service"

is complex (Hu & Li, 2019). Correspondingly, researchers from different disciplines or perspectives have been assigning different definitions to "service design" since the end of the twentieth century (Stickdorn et.al, 2016). In "Service Design Capacities", Morelli et al. (2021) put forward an analytical framework comprised of the "three levels of service" and argued that service design could therefore be studied on three different levels, ranging from micro to macro: (1) service as interaction, (2) service as infrastructure, and (3) service as system institution.

Corresponding with each of the three levels is the following: (1) service design interactions that focus on the micro level, that is, on interactions with customers; (2) the design of processes and spaces that support such interactions (the meso-level); and (3) the design of elements comprising the cultural, social and political structure that can lead to change, which are related to the macro level of the social system and are referred to as the "systemic institution" by Morelli et al. (2021).

There is little controversy about the micro-level of interaction as a service, but the words used to define the second and third levels by Morelli et al. (2021) tend to bring more chaos than clarification. For instance, the word "infrastructure" is often related to materiality[4], but the organization of service depends not only on hardware, but also on intangible factors like knowledge, organizational ability and culture, as the authors clearly mentioned. "The service designed at this level consists of material and immaterial components aggregated in a way that creates potential value." (Morelli et al., 2021). The word "infrastructure" is difficult to explain the functional system comprised of many different elements on which interaction relies. Even if the infrastructure is understood metaphorically, the material and non-material elements cannot guarantee the realization of specific functions. Systems rely not only the elements, but also on the elements' interrelationships.

This paper holds that infrastructure-level service design is consistent with the design 3.0 proposed by Buchanan (1992), that is, the "organized service" design is to "combine physical resources, tools and people in an effective order and schedule to achieve specific goals". When looking at service systematically, physical resources, tools and people are all concrete elements. Different elements are connected in some way, and a certain specific function is realized in the form of a whole. The integration of these elements can be called "functional" design, and the service function system is provided by a specific organization, which includes the physical infrastructure, knowledge, technology, and culture needed to form the organization (see Fig. 9.4). In actuality, although all service function systems are dynamic and open, they have limits due to the service providers' organizational boundaries. Therefore, a specific service function system is a relatively controlled and small system. As such, it is more appropriate to call the work of constructing a service system "functional design" than "design on the infrastructure level". This speaks to the mesoscopic level of service design.

[4] See https://en.wikipedia.org/wiki/Infrastructure#cite_note-3

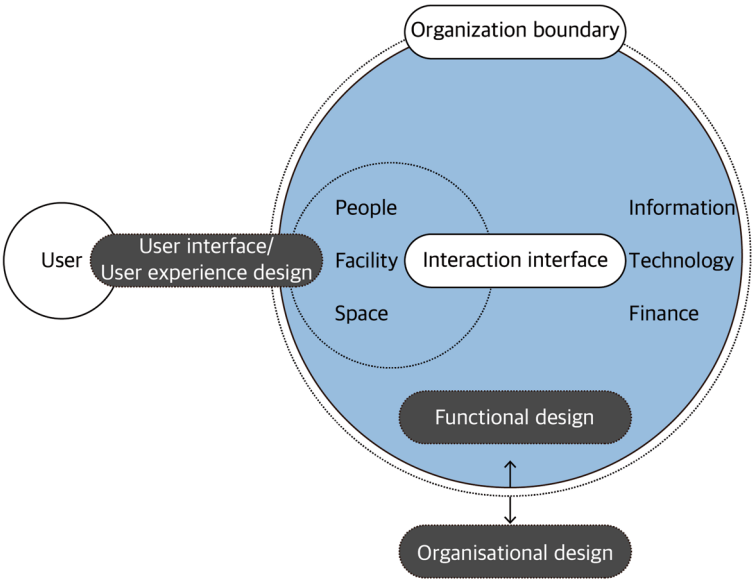

Fig. 9.4 UI/UX design, function design and organization design

However, service design at the mesoscopic level is not limited to the design used for realizing a service function. Viewing this from the system theory perspective, all functions can be categorized as either internal or external (Wu, 2013). The former refers to "the function, ability, behavior and efficacy of the system as a whole with respect to its elements". External function means "the function, ability, behavior and efficacy of adapting to and changing the environment when the whole system interacts with the external environment" (Wu, 2013). When confronting the constant changes of the external environment, the system itself needs to adapt and adjust. Taking commercial organizations as an example, it is impossible to achieve a sustainable operation when adapting to changing times is difficult (e.g., video rental enterprises). System adjustments to adapt to (or even predict) a change of environment can be defined as "organizational design". After implementing top-down organizational design, it is possible to redefine the functional system's elements and structure according to changed strategy and goals. Therefore, organizational design, which also belongs to the middle level, is the system's behavior when interacting with the environment.

Buchanan (2008) contends that this kind of design, which promotes organizational change, belongs to Design 4.0. Furthermore, it is driven by the organization's strategic objectives. To achieve these objectives, it will either increase or decrease the organization's system elements, as well as change the structural relationship among the elements. Strategic design provides goals and directions for organizational design and solves the problem of "what". Organizational design is differentiated as an action plan for organizations to achieve their strategic goals and focus on the "how".

All systems exist within the environment, and the environment and the system are always interacting; they constantly exchange materials, energy and information (Miao, 2016). If organizational design is the self-adjustment of an organization confronting environmental changes, then intervening on the environment itself is an attempt to create conditions more conducive to the organization. This level of service is described by Morelli et al. (2021) as the "institutional landscape", which is "the system of values, rules, and social, cultural, economic and political premises that frame the change and facilitate the changes that are consistent with this framework, while hindering those that are not". Morelli et al. argue that this design level approximates the 4.0 design mentioned by Buchanan, that is, "complex systems or environments [designed] for life, work, games and learning" (Buchanan, 1992). Golsby-Smith (1996) also contends that Design 4.0 is related to "values, insight and world view", and that human behavior takes place in a background composed of "tangible factors". Moreover, it may be that Buchanan is confused when defining Design 4.0. Although both related to the relationship between "organization and environment", the subject of organization design is, naturally, organization, while the subject of "environment" design is environment, and the difference between them is evident. In the early stages Buchanan described the design 4.0 as an "area [that] is more and more concerned with exploring the role of design in sustaining, developing, and integrating human beings into broader ecological and cultural environments, shaping these environments when desirable and possible or adapting to them when necessary" (Buchanan, 1992).

However, in the later period, Design 4.0 was mentioned as organizational design (Buchanan, 2008). Furthermore, this reflects a confusion when using the word "system". In fact, both society and organizations, and even specific departments within organizations, can be called "systems". The elements of a higher-level system would be a system of lower-level elements (Miao, 2016). A large-scale organization under the modern social and economic system must itself be a system, and its internal elements are diverse; therefore, it would be called a complex system (Miao, 2016). However, compared with the larger society, the heterogeneity, nonlinearity and uncertainty of any organization are all still much lower. Society is thus an open, complex and giant system (Miao, 2016); furthermore, it is the environment in which all organizational systems exist. As such, to avoid confusion, the term "system design" is also used cautiously in this paper. It is precisely because of Buchanan's inconsistency in the discussion of Design 4.0 that Morelli et al. (2021) quoted Banerjee's viewpoint, agreeing that "design for macro-transformation" should be added to Design 4.0 (Banerjee, 2014). If we want to use a term to define the design of the contextual environment in which the organization is deployed, it is better to call it "social transition design", which is clearer than "design at the level of system institution" and more specific than Buchanan's "complex system or environmental design" (Buchanan, 1992).

Therefore, this paper holds that service includes four levels, from the micro to the macro, namely, service as interaction, function, organization, and social transition (see Fig. 9.5). At the micro level, service denotes the interaction with customers. At the meso-level, within the organization, service is a functional system on

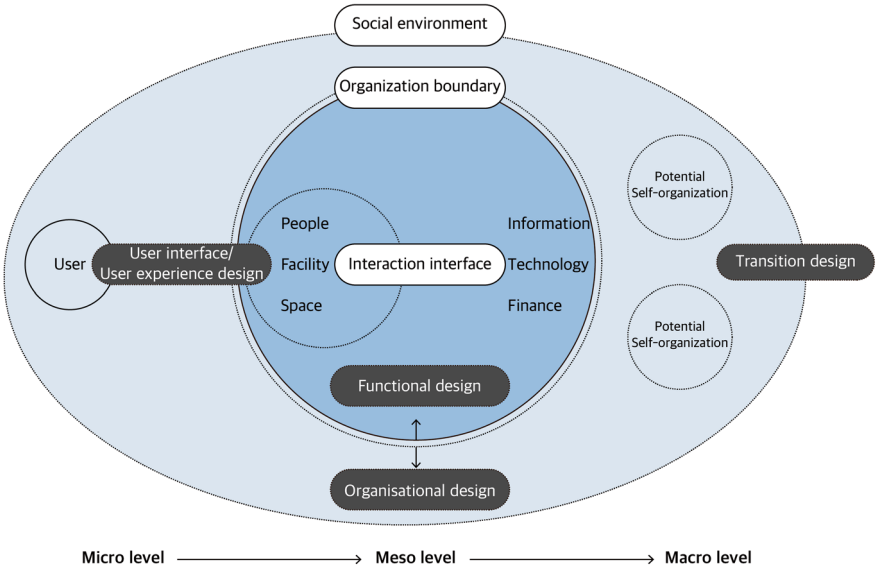

Fig. 9.5 UI/UX design, functional design, organizational design and transition design

which specific behaviors depend, including material elements (e.g., space and facilities) and non-material elements (e.g., professional knowledge, cultural context, finance or information technology). It also covers both the front and the back stages of the service. Moreover, from the cognitive point of view, the system's starting and ending points can be defined according to its organizational boundaries. In real life, however, the service organization must be dynamic and open. Simultaneously, when the organization interacts with the external environment, it needs to adjust and change. These will inevitably generate the adjustment of internal elements and structure; this is what is meant by "organizational design". The design with the system's boundaries, and the design of the system boundary itself are closely related. However, both the perspective and method are completely different.

On the macro level, designers can express their visions in terms of their values and worldviews in a variety of ways. These include their presentations of conceptual services, changing the context of specific behaviors and organizations by stimulating social dialogue, and promoting social transition.

Among these four levels, the design that provides micro-level interaction can be regarded as UI and UX design. The function design within the meso-level organization approximates the definition of complete service design, that is, denoting the planning and organizing of people, things, information and other elements needed for service, and constructing the service system.[5] As for organizational design, this focuses on the organization itself, analyzing and even predicting changes in the

[5] "Introduction to Service Design: What It Is and How It Works". careerfoundry.com. Retrieved Aug. 31, 2022.

external environment, and redefining the internal system's functions on this basis. Functional design may not necessarily change the organization as a whole, but organizational design will definitely bring about a reconstruction of internal functions. The macro-level social transformation design is often presented alongside the design for social innovation.

4 Service Design in China's Agrifood System

Although service design has been introduced into Chinese education and practice for nearly 20 years, it is still far from being widely accepted by industry and the public. When analyzing the four levels of service design, it is easy to find that there are a lot of opportunities and challenges at different levels. With the spread of information technology and rapid socio-economic changes, service designers with different perspectives and approaches will have more opportunities to practice. In the following section, we will illustrate the design practices of the four different levels in the context of China's agrifood network, mainly with design examples drawn from the DESIS (Design for Social Innovation and Sustainability) Lab at Tsinghua University's Academy of Arts & Design.

4.1 Micro-level Service Design: The Instrumental Dilemma of Interaction Design/User Experience Design

As mentioned above, service design has not been regarded as an independent design discipline in China, but with the greater development of information technology (IT), the growth of IT industries and the digitalization of traditional industries, there is a substantial demand for user experience/interaction design. This phenomenon manifests itself similarly in novel services in the agri-food system in China. Famous platform companies in China, such as Alibaba, Tencent, Meituan and Pinduoduo, all have sizeable agricultural e-commerce or fresh e-commerce service departments. Additionally, they are all major employers of UI/UX designers. Despite the absence of well-defined design management research results, a substantial number of cases demonstrate that the importance of user experience has indeed been recognized by Internet companies. Nonetheless, user experience design within organizations is often in an awkward position.

On the one hand, user experience is one of the constituent elements of customer satisfaction, but the relationship between customer satisfaction and the success of business models is complex, nor is it often a decisive factor. In fact, research shows that platform trust and usability, product quality, distribution service and after-sales service together comprise the influencing factors of user experience (Wen & Shi, 2017), among which UI/UX design only supports platform usability. On the other

hand, to achieve higher strategic goals, such as market share, user experience can sometimes be compromised. An example of this includes the disputes and customer complaints caused by Alibaba's new retail platform, Freshippo's exclusive payment tool (Zhang et al., 2022). When compared with "unicorns" that have abundant capital and substantial market scale, some small innovative institutions that adopt differentiated competition business models pay more attention to the importance of user experience. However, customer satisfaction is directly related to service expectation (Fitzsimmons et al., 2014), even though service expectation is often shaped by the conventional experience. As a result, improving customer satisfaction brought by optimizing individual user experience through design is limited.

4.1.1 Case 1: Yikouliangshi (Different Tastes with Good Food): The Design Challenge of User Experience in Innovative Services

Yikouliangshi is the first take-away service company providing reusable tableware. It was established in 2014, and by March 2019 five restaurants had been opened in Beijing. The restaurant only provides take-away service, mainly serving customers within a radius of three kilometers. Yikouliangshi is positioned as a "community kitchen", targeting young people who have a fast-paced life and lack cooking time or skills (or both). Household ceramic tableware is used as the take-away package, but customers are not required to pay a deposit or return the containers themselves. Instead, after peak hours, the restaurant comes to the customers' doors to collect the tableware, and they are then re-used after being cleaned and disinfected.

The original intention behind providing ceramic tableware is to offer consumers a "family" atmosphere. Yikouliangshi's founder regards this as the core of the company's brand positioning, while also objectively reducing the use of plastic take-away containers. This meant that, at the beginning of 2019, 5000 plastic packages could be saved every day, and the restaurant could also achieve profitability through smart data management. However, because Yikouliangshi differs from the conventional take-out service, it has faced great challenges in terms of user experience. One such difficulty includes customers having to contact the delivery people two times, once when receiving their meals and again to return the tableware. In contrast, interacting with more traditional delivery services only required contact at the delivery stage. The environment of the customers is diverse and limited by property management regulations, so when collecting containers and plates, both the delivery staff and the customers alike may encounter various and uncertain situations. Moreover, because the ceramic tableware is household standard and the restaurant does not charge a deposit, some customers may intentionally keep the tableware.

In June 2019, the DESIS (Design for Social Innovation and Sustainability) Lab at Tsinghua University was invited to participate in this project, with the goal of improving customers' acceptance of the tableware collecting service. The ultimate aim was to optimize the user experience and the recycling process through redesign. The design brief includes visual design for communication, product redesign for re-usable tableware and service design for the collecting process. However,

Fig. 9.6 Yikouliangshi's food delivery service with reusable tableware

during the project implementation, the COVID-19 pandemic broke out. For the sake of health and safety, offering reusable plates was suspended, and Yikouliangshi's main service had to shift to community canteens (see Fig. 9.6). The restaurants distributed food to the canteens in a unified way, and residents either ate in the canteens or packed their meals to take home. Afterward, the tableware was returned to the canteen, where it was then and cleaned. As such, it was not necessary to order food online, thus eliminating the need to collect the tableware. Whether service design with user experience at the core can improve both service quality and user satisfaction still need to be tested, and for a considerable duration in the future.

4.2 Service Design at the Meso Level: Functional Design Within the Organization

Morelli et al. (2021) argue that service design at the second level (the meso level) includes designing both physical and virtual spaces for interaction, coordinating the stakeholders' time, and providing visual opportunities for customers to integrate resources and create value. Accordingly, Buchanan's (1992) design 3.0 includes traditional logistics management, which combines physical resources, tools and people into an effective order and schedule to achieve specific goals. Buchannan did not demonstrate how designers could conduct design 3.0, but Morelli et al. (2021) defined designers at this level as "orchestrators", and their skills must include the ability to connect with knowledge in different fields. Specifically, the skillset would also include professional abilities like open problem solving, establishing logical architecture, visualization and context setting. Moreover, apart from one's visualization ability, other capabilities would not be the training objectives of traditional design education, and what is more, they are rarely provided in China's current service design education. In service organizations, it is more common that the corresponding work is divided into different design professional fields. For instance, service space design is performed by spatial designers and user participation co-creation is done by product developers.

It is easier to understand design's role in an organization by interpreting the service organization from a systematic perspective. In such an organization, people, technology, hardware facilities, equipment, processes and other subsystems comprise the service providing system (Goldstein et al., 2002). Even in the same large system, each subsystem has its own goal because of its specific function. For example, the user department aims at achieving the highest level of user satisfaction, the financial department aspires to generate the lowest costs and the highest profits, while the technical department expects to develop and adopt the most advanced technology. These varying goals often restrict each other and even conflict; as such, they often need to be coordinated and balanced by the system organizer. Therefore, if a service designer is defined as an "organizer", as someone who organizes people, spaces and facilities, then this role should also be the system organizer, regardless of his or her professional background. Additionally, the professional service designer is more likely to be the visual assistant of the service system's organizer. Only when service designers recognize this, will there be no serious split between their realistic role and their ideal expectations. However, this does not mean that service designers cannot become system organizers. For example, the Foundazione Housing Sociale is a typical designer-led service organization (Zhong, 2021).

Sun and Renice's research (2016) can provide even stronger evidence. Among the Royal College of Arts (RCA) service design graduates interviewed for this study, 33% are named either "service designers" or "designers", and 20% are engaged in multimedia, interactive design and user experience design. Ten percent are engaged in user research or design research, and 37% are responsible for project or strategic management; their positions are team leader, founder and manager.

Respondents reported that they believe, in terms of their practical work, that project management and leadership are their primary abilities. These skills include contacting customers, training teams with service design methodology, coordinating, project management, budget management, auditing, empowering others, administration, team building, business development and strategy. Whether in the agrifood system or in other fields, whether in traditional industries or Internet-based industries, if designers wish to contribute to the overall system, the above capabilities are indispensable. If service design is expected to gain more industry or social recognition, it must also develop corresponding acumen in system collaboration and take on an active systemic role. This skill, which Buchanan (1992) described as the ability “placement”, is the ability to “fill out the microscope to give it efficacy”. This definition has connotations close to “设计 (shèjì)” in Chinese. Although there has been little discussion about placement in the field of design research, evidently “placement” has gone beyond both a single-user perspective and a single- “human” perspective, which can be described as “the ability to design functions through system construction”. How to acquire this capability and how to assume an active role rather than be a passive executor in the system will be a challenge that service design education and practice need to face directly.

4.2.1 Case 2: The Delivery Rider: Stuck in the Algorithm

When the food delivery platform achieved great commercial success, the plight of delivery riders began to gain social attention. In evaluating food delivery service, the main indicator of customer satisfaction is delivery service, and timeliness is the key to delivery service quality. Driven by the goal of improving customer satisfaction, the food delivery platform optimizes itself via algorithms, shortens each order’s delivery time and pushes delivery riders to improve their efficiency continuously with the dual methods of reward and punishment. The algorithm’s optimal route is often obtained by tracking the shortest riders’ fastest course. However, the shortest path rarely follows traffic laws, therefore deliverers are increasingly victims in traffic accidents. When news reports have fomented on social media, all major takeaway platforms have claimed that they will improve their algorithms, extend delivery times and improve deliverers’ welfare guarantees (Fig. 9.7).

Initially, the functional goal of a takeaway platform is for technology to bring efficiency; in turn, efficiency begets user satisfaction and user satisfaction generates profit. Under such immense social pressure, delivery platforms have to then restrict technology’s use, and this reduces both efficiency and user satisfaction to a certain extent. It does, however, account for another important stakeholder in the system: the delivery riders. Service organizations cannot completely avoid taking social responsibility while pursuing business goals. In this way, in addition to the single profit-making function, organizations are forced to undertake the functions of protecting employees’ well-being and taking on social responsibility. Multiple functions mean that the system objectives have been adjusted, and this is driven from top down. Importantly, executives, including service designers, interaction designers and programmers, cannot achieve this independently.

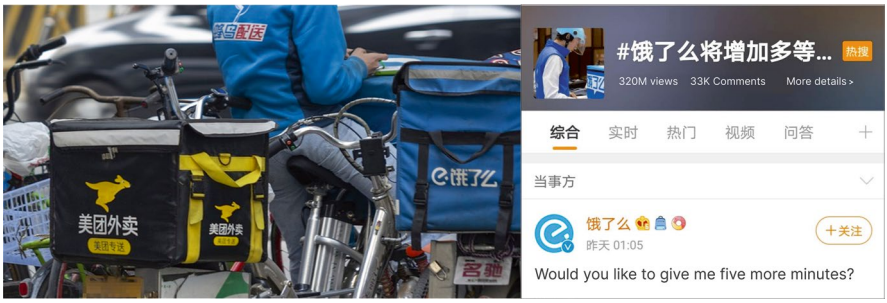

Fig. 9.7 The food delivery platform requests that customers agree to extend the delivery time

4.3 Service Design at the Meso Level: Organizational Design to Adapt to the External Environment

As mentioned earlier, in the past 10 years, mobile Internet services have profoundly changed urban residents' lifestyles in China. In the agrifood sector, fresh e-commerce, delivery platforms, community group buying, and other modes have emerged, almost in an endless stream. Driven by acquiring capital, tech unicorns have grown rapidly, and at the same time, the iteration speed is extremely fast. The most well-known innovator of a certain service model is likely to become a loser in such fierce market competition, but its model is nonetheless widely imitated. One such example is Missfresh, which is famous for its community fresh e-commerce site and has reportedly shut down recently.

Organizational design is not the typical "design" of the twentieth century. Buchanan (1992) also argues that applying "design thinking" has great potential in creating organizational change. Therefore, it is better to say that myriad creative techniques and methods, including visualization, games (Nixon, 2016) and interpretation (Verganti, 2009), are widely used in strategic and organizational design than specifying to which specific design discipline the organizational design belongs. However, there is no doubt that if it is a service-oriented organization, then the concept and method of service design (in the process of organizational design) will inevitably be widely used, whether it is design-led or non-design-led, whether systematic or relatively random.

4.3.1 Case 3: TikTok: Entering the Field of Agricultural Products E-Commerce Sites from First Being a Video-Based Social Platform

TikTok, as the most popular social media software in the world today, has achieved great success in China and worldwide. When it was launched in 2016, TikTok was purely a music video sharing platform. Then, in 2018, TikTok Store was launched

and began its trial period of e-commerce. A few years later, in 2020, TikTok vigorously expanded its e-commerce livestreaming offerings and regarded it as a strategic business opportunity. In August of the same year, the "New Farmer Plan" was launched to support the generation of content related to agriculture, rural areas and farmers, as a practical action for the company to take in support of the national strategy of poverty alleviation.

TikTok's agricultural e-commerce organizes its service system around farmers. To this end, farmers show their rural lifestyles and their production and processing of agricultural products through short videos or live broadcasts, thereby gaining audiences' attention and trust. On this basis, they can then sell their agricultural goods via e-commerce livestreaming, and many farmers with unique personalities have become online influencers. In the end, they have achieved high commercial value. To improve farmers' skills, TikTok also invited agricultural experts to popularize agricultural science in the form of live broadcasts or videos. In 2020, because of the COVID-19 pandemic, a substantial number of agricultural products were unsellable. In response, TikTok launched its "Live Broadcasting by County Mayor" project, inviting county mayors from all over China to speak directly about local agricultural products, therefore promoting poverty alleviation through consumption (see Fig. 9.8). The platform even provides e-commerce training for farmers and traffic support for local agricultural products sales. It has indeed played an important role in agricultural products e-commerce, achieving model innovation in addition to traditional fresh e-commerce and community fresh e-commerce platforms.

Fig. 9.8 Live broadcasting by county mayor

Regardless of whether it is motivated by idealism or realism, the "three rural" channel has won great social influence for the company.[6]

Evolving from a music video sharing platform to a video-based social platform, and then to an e-commerce platform, TikTok has undergone a clear strategic transformation process. Without sufficient internal decision-making information, one cannot evaluate its process and method of strategic construction and organizational transformation, but there is enough information at hand to understand clearly its goals in retrospect. From a service design perspective, music video production, short video socialization and e-commerce are completely different service products. Even if they are not produced by professional service designers, the design of new service products itself is a kind of service design. Unfortunately, due to the enterprise's confidential strategy development, it is impossible to know whether design experts were involved. Buchanan (2008) also contends that the "academic discussion [has] neglected the significance of design and the rich variety of design practices that could affect organizational life and lead to new organizational structures and processes". To rectify this, he classified organizational design as Design 4.0, which is "the design of organizations, environments, and systems that serve the diverse purposes of human beings" (Buchanan, 2008). Similarly, Martin (2009), who has a business background, agreed that design thinking is an important tool for organizational innovation. Knowing whether this concept and method can be equally applied and how to apply it in China still needs case evidence and time for proving it.

4.4 Service Design on the Macro Level: Transition Design for Creating a Favorable Social Environment

Services are provided by service organizations, and all service organizations can be regarded as a system; however, the system is always affected by the system environment (Miao, 2016; Selznick, 1949). When the solutions provided by the existing organizations cannot solve problems and, therefore, face market failure and government failure simultaneously, it is difficult to achieve fundamental innovation based on the existing system. In this case, we must think about how to change the system's environment. These dilemmas are very common in the agrifood system, and they include the environment's negative externalities brought on by food delivery service and the resilience of a complex agricultural product supply chain within a risk society (Beck, 1992). These problems cannot be improved by an organization or a specific policy. This type of problem, usually defined as a "wicked problem" (Rittel & Webber, 1973; Buchanan, 1992), per Morelli et al. (2021) belongs to the "system institution" problem; this paper defines it as a "social transition" challenge.

[6] See http://news.cn/tech/20221027/9c41607401e74bff83dd3309aad9fa5a/c.html

The design for a future with high uncertainty can be called "future design". If the core of "sustainability" is emphasized, it can be called "sustainable design". Additionally, if we emphasize the sociality of its design methods and solutions, it can be called "design for social innovation" (Zhong & Liu, 2018). If we focus on the goal of "social transition", it can be called "transition design". The similarity among them all is that they emerge from existing systems and services and explore the possible scenarios and solutions within a given set of prospects. With the breakthrough of advanced technologies, such as artificial intelligence, future design is increasingly integrated with new technologies, while design aimed at social innovation (with its goal of sustainability and focus on social structure innovation) has gradually formed a design-based methodology. Currently, in the design research field, there are two main approaches.

The first is to create a spatial environment for social communication, so as to promote interactions among members of society and to catalyze self-organization based on long-term interaction. After self-growth and self-adaptation, self-organization may form a new social structure, which itself may bring about new service systems and provide alternative solutions. In this process, self-organization cannot be designed per se; rather, the spatial environment is simply the object that can be designed. Design thus enters the field of "spatial sociology". As Lefebvre (2000) has said: "Social space allows some new activities to happen, which not only supports some activities, but also prohibits others. In these activities, some serve production, while others serve consumption (that is, the enjoyment of production results). Social space contains varied knowledge." Designing space for diverse and potential social interactions and social relationships breaks through the traditional architectural design methodology, and it can be regarded as service design from the perspective of "interaction" and "service". In this way, the word "environment" means, per Buchanan, that implementing "Design 4.0 is to design a complex system or environment for life, work, play and learn" (1992); moreover, it has both metaphorical and practical significance. In system science, complexity will emerge in the process of adapting to the environment, but the complexity generated is unpredictable and uncertain. Therefore, the relationship between improving interactive public space and social structure transformation is nonlinear. As such, more interdisciplinary research is needed to obtain more sufficient proof of the space-social dynamic. In China, given people's universal passion for farming and food production, community-oriented planting space has become a hot topic in social transition design.

4.4.1 Case 4: Fangxingyuan Community Garden

In the winter of 2019, in an old residential area in the center of Beijing, residents invited designers from the DESIS Lab at Tsinghua University to help them transform the abandoned land in front of the apartment building. Participatory design method was adopted in the whole design process (Fig. 9.9). In the early stage of demand investigation and space and function definition, the designer organized

Fig. 9.9 Participatory design of the community garden

Fig. 9.10 Self-organizing for constructing and maintaining the community garden

workshops to encourage residents to discuss and negotiate spontaneously and to seek common ground while retaining differences. During the early period of the COVID-19 pandemic, designers helped residents choose and determine the final design scheme through online group discussion, no-contact voting and feedback. The garden's construction was also completed by gardeners, designers and residents. Afterward, the resident volunteer group maintained and managed the garden (Fig. 9.10).

The second approach is to propose directly a feasible solution in the future, which Manzini calls "design-oriented scenarios" (DOS) (Willis & Manzini, 2005). Its starting point is to reset the problem, define the "what", and then discuss how to solve the problem, that is, to understand the "how" (Meroni, 2008). Compared with

providing a medium (space) for social interaction and relationships, this approach directly faces the problem, puts forward a solution, and designs for the interactive difficulties. Manzini's design-oriented scenarios is the concretization of vision design. It includes vision, motivation and practicability (Willis & Manzini, 2005). The root of practicality does not come from the designer's imagination, but from the spontaneous innovation of real life. For example, in the European Union, the Emerging User Needs in Sustainable Solutions (EMUDE) project, launched in 2005, began with case collection and analysis (Meroni, 2007). The second step was then conceptual design based on real cases (Jegou & Manzini, 2008). Although it is future-oriented, it is rooted in reality.

4.4.2 Case 5: Design Harvest: From Scenario to Reality

In 2008, the School of Design and Innovation at Tongji University implemented the transition design of a sustainable village in Chongming Island, Shanghai. This project replicated the concept and methodology of the "Southern Milan Agricultural Park" project of Politecnico di Milano (Lou et al., 2013), and it created a series of scenarios to describe possible solutions to revitalize the less developed rural area, including a producing and consuming network between farmers and citizens, children's education about nature and eco-tourism (Figs. 9.11 and 9.12). At the time, these alternative solutions were not necessarily brand new; indeed, there were already some of these sporadic small-scale practices in China. However, designers needed to change the perspectives and behaviors of local villagers, government officers and consumers. In the absence of immediate and visible proof of the solutions, intuitive scenes were needed to help them all imagine and evaluate. Therefore, feasibility rather than futurity is the keyword in this kind of scenario design, and its goal is a "shared vision" (Willis & Manzini, 2005), as well as vision-based action.

"Design Harvest" is not just a design project. After being noticed by myriad designers and gaining social influence, villagers were encouraged, and they participated in creating a "sustainable community" according to their own resources. For example, villagers' cooperatives introduced the eco-agriculture model of crab and rice farming, and villagers with surplus housing began to operate homestays and restaurants. Additionally, designers involved in the project joined villagers in setting up small eco-tourism company. In this "acupuncture" design case, the "design-oriented scenario" achieved the expected goal.

As Buchanan (1992) has mentioned, without objectivity in which ground the possibilities discovered in design, design thinking becomes design sophistry, that is, the practice in "daily life", is a bigger challenge than the vision itself in the design of "service as social transition". Regarding the service design and research projects of Chinese researchers of the agrifood system, not only opportunity is required but also courage to take the first step.

Fig. 9.11 Storyboard of eco-tourism by design harvest

Fig. 9.12 Storyboard of pick-up point by design harvest

5 The Practice of Integrating Tools and Values: The Only Way for Service Design Becoming a Discipline

Buchanan (1992) quoted Dewey and considered that design is both an "intentional operation" and a key element in shaping human experience. Therefore, design is defined as a plan, project, or working hypothesis that constitutes "intention" in taking intentional action. Regardless of whether there should be Design 5.0 after

Design 4.0, it is nonetheless a fundamental leap to go from designing symbols and objects to designing services and systems, since the advent of modernism. Even though Buchanan explored this trend 30 years ago, in considering the case as it presents itself in real life, designers are still exploring a feasible path to achieve this aspiration.

As mentioned above, service design has different goals at the micro, meso and macro levels, and different methods are adopted to achieve each of these goals. However, if service design is to become a new branch of the discipline, and if it is to be widely recognized, then it is bound to break through these three challenges:

First, in the "design" process, the intention is displayed; therefore, the design is put into practice instead of as making (Aristotle, 2000). "Intention" expresses the subject's goal; judging from this as the standard, design should belong to "practice" (praxis) (Aristotle, 2000) rather than "making" subject to conform to external goals. The true aim of design is the process of realizing "intention" through practice. In a complete design practice, the intention is the starting point, and the concept is then developed and tested through experimentation (Buchanan, 1992). Moreover, the complex systems of modern society cannot be a presentation of a single intention of a single subject. Instead, the final service is the result of multiple interactions (or games), whether in the agrifood system, the transportation system or the healthcare system. These services present the intention (or value orientation) of one or more agencies. For example, at least in China, the intention to gain greater efficiency reflects investors' intentions, while inclusivity but less user satisfaction reflects public service providers' intentions. Whether service designers (including UI/UX designers with micro level interaction as the object) can embody their own (partial) intentions through design can be defined either as pure tools serving others' goals or as agencies creating value. Accordingly, designers' actions can also be defined as design practice or "making" according to whether it demonstrates (even part of) the main intention. Only design practice can be the active agency within a system, and then drive organizational service system innovation. With the rapid development of AI, the substitutability of design tools has become obvious. The intention of design, that is, its purpose, is worthy of designers' greater efforts to present and (at least partially) realize.

The second challenge is to implement design practice in what Habermas (1981) called the "life world". Design, especially service design, because of its close relationship to people and its similarity to other social sciences, needs to develop concepts through objectivity and stimulate practice through experiments. It has been the active choice of an increasing number of design researchers to guide social transformation through macro-level vision design. However, simply showing the vision (i.e., intention) cannot automatically link to social transformation; no do multiple roles in complex systems spontaneously manifest visions similar to those of designers. Realizing the new system's vision and production is what Buchanan called "the actual agreement reached through discussion" (Golsby-Smith, 1996). According to Golsby-Smith (1996), this experiment is the art of dialogue. This theory was borne from Habermas' communication theory. Habermas (1981) argues that society is both a living world and a system. The ideal society, according to him, is to achieve a consistency between the life world

and system by establishing communicative rationality, rather than alienating the life world by the systems we build. Although his communication theory is controversial, the coordination between system and the life world may also be a feasible way of designing and promoting social transformation.

The service design research that focuses on the macro level in agricultural food system or the design research that focuses on "vision" in other fields should enter the life world, build the system through the smallest unit practice, and enlarge or modify the system in the dialogue. Only in this way can design show its intention, embody its subjectivity, and then become a complete practice. It is exactly what William McNeill (2018) describes in the form of a trilogy: "The practical syllogism is what happens in and as praxis. it is praxis in its very accomplishment. in the movement of its unfolding and actualization. A practical syllogism consists of the following steps: (1) The particular action or immediate end desired. that is, held in advance in a prohairesis (for the sake of some further end or good …) is such and such (major premise); (2) The concrete situation is this (minor premise); (3) Therefore. I shall act in the following way (conclusion)". And, action!

The third, and final, challenge of design practice in the "life world" is based on the "middle range theory". Merton (1957), the founder of the sociology of science, developed this theory, which is "between the general theory of social system and the detailed description of details", and "in principle, it is applied to the guidance of empirical research in sociology". When Merton put forward this view, sociology was still in the stage of "pre-science", and there was a lack of connection between the Chicago School's "descriptive study" of social phenomena and the "grand theory" advocated by Parsons. Compared with sociology in the 1940s, the design disciplines, including service design, are in a more difficult situation. On the one hand, the shift from Design 1.0 and 2.0 to Design 3.0 is essential, and how should the modernism design theories and methods established by the Bauhaus be inherited when the object of design goes beyond the material? On the other hand, even though "service design" has been around for almost forty years, service design itself is still in the process of being recognized, especially in China, and the lack of practice-based micro-experience makes a theoretical approach to summarizing experience premature.

Due to its interdisciplinary nature, service design, whether focusing on profit-making commercial services or public services for community interests, goes beyond simple visual and product design and occurs in real economic activities and social contexts. Therefore, sociology, economics and even management form its important theoretical basis. Meanwhile, macro-level value propositions need to be validated by more practice. For example, a "sustainable agricultural food system" in China can be deconstructed and re-designed to address several middle-level problems, such as "service design can promote the resilience of a system" and "service design for improving awareness". Although these problems cannot be compared to highly generalized and interrelated sociological core concepts, such as social roles and social stratification, design bridges the gap between concrete design behaviors and complex social systems through the bridge of "service", which in turn connects to values at an abstract level. The concrete design behaviors after being decomposed

are fed back to the abstract theory in practice, so that "design theory" can be formed, rather than making design become a new tool for anthropology, sociology, and management: a mindset, a toolkit (Leitch et al., 2022), and gradually grow into an independent discipline.

Advancing service design practice requires the engagement of design research. At the end of the twentieth century, Roth (1999) argued, "while other professional disciplines have a tradition of advanced research in academia, design research is a more recent phenomenology. It has yet to establish universal standards related to process, presentation and evaluation". Nearly twenty years later, Margolin (2016) also contended thus: "What is hampering this potential role for designers is the lack of clarity in design research, which inadvertently supports inconsequential investigations, while at the same time not recognizing new areas where investigations of what design can do are much needed. A central focus of research should be on the social, technological, and cultural transitions that are occurring in society and how design might be reconfigured and reconceptualized to be part of them. This means identifying and analyzing new opportunities for practice." In both the present and future, technology, society and the economy are changing rapidly; therefore, design research must take responsibility for finding a broader and more solid practical space for new ideas and methods, in the context of service design in China.

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Chapter 10
Service Design for ThaiHealth Food Program: Exploring Participatory Policy Development

Wallapa van Willenswaard and Integration Project 2020 Team

Abstract Without claiming to belong to any formal design school, Innovation Network International (INI), by means of its *Integration Project,* is creatively contributing to collaborative Food Policy Design in the framework of the ThaiHealth Food Program 2022–2032. This ten-year Food Program policy is developed by the Thai Health Promotion Foundation (ThaiHealth). Thanks to expert consultations, the services that various partners deliver within the Program can be articulated with more precision and aspiration. This is an ongoing process gradually shaping the *Integration Project* as a service to make the Food Policy Design process more participatory, more integrated and collaborative, and more system and long-term oriented. The purpose of undertaking case studies was gradually understood as identifying prototypes for scaling. The case studies or flagship projects represent examples of how three 'design for social innovation'—issues shape scalable models for transformation toward sustainable food systems, targeting "accessible, affordable and healthy food for all". 'Social innovation issues' or 'principles' here imply impulses that provide social innovation processes with direction, and purposeful relationships of mutual care. The three inter-active designs for social innovation principles tentatively identified are *Food Literacy, Food Citizenship,* and *Food Community.* Together they constitute creative social dynamics driving the Food Program policy design and implementation. The chapter introduces Public Food Procurement Policy Design to create conditions for an envisaged scaling process.

This chapter was written during the ThaiHealth Integration Project 2020–2 and is the collective work of local teams with Dr. Jinda Phromtha and Mr. Suchan Silamnuay, academic advisor Prof. Dr. Ezio Manzini and the INI Integration Project Team led by the author. The contribution from all partners of the Food Program to this article is especially invaluable. The opportunity and trust given by Dr. Pairoj Saonuam and Mr. Vuttipong Predapattarapong, ThaiHealth Food Program in collaboration with the Food Program Steering Committee chaired by Dr. Chantana Ungchusak, made this Integration Project possible.

W. van Willenswaard (✉) · Integration Project 2020 Team
INI-Innovation Network International, Nonthaburi, Thailand

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Keywords Service design for food policy · Prototypes for scaling · Food literacy · Food citizenship · Food community · Public food procurement

1 Introduction

In 2001, the Thai Health Promotion Foundation (ThaiHealth) was established by law, opening a new chapter of *government—civil society* collaboration in Thailand. ThaiHealth is "the first organization of its kind in Asia and serves as an innovative enabler to enhance health promotion and a healthy society and environment for all people in Thailand" (Sopitarchasak et al., 2015)**.** Subsequently, in 2006, the Healthy Food Promotion Plan (Food Program) was established as one of 15 programs of ThaiHealth.

Innovation Network International (INI) and its predecessors in healthy food promotion have played a modest role in the growth of the Food Program since the very beginning, with direct and indirect support from ThaiHealth. The *Green Market Network* (Willenswaard, 2012) initially participated as a small-scale implementing project partner and social enterprise, until this partnership evolved into the role of supporting project. In line with the key issues of the ThaiHealth Food Program—Nutrition, Food Safety, Food Security—INI contributes at present through the *Integration Project* to the strategic design and implementation of the 10-Year Food Plan 2022–2032. This chapter describes how this novel, intermediate, role of supporting project gradually gained clarity by an orientation toward service design.

For more than 18 years, since the first *Community Supported Agriculture* (CSA) project in Thailand has emerged, every week in the early morning 3 kg of organic vegetables packed in banana leaves have been dropped at the doorstep of the members. The *mutual care* principle of what is called CSA has been inspirational for a step-by-step engagement with *food system governance* over the past 2 decades, resulting in the *Integration Project.* An important approach to the improvement of the food system is shortening or "localizing" the supply chain. This is not just a technical challenge, but arguably, in order to be successful, should evoke "the spirit of CSA".

The *Integration Project* focuses on three major objectives: (1) To provide an overall 'service design for food policy' including systems analysis, multi-stakeholder dialogue, communication strategy, and knowledge management; (2) To conduct a number of empowering case studies of Food Program partners and evoke prototypes with the aim to strengthen the participatory characteristics of food policy design and prepare a process of scaling; (3) To introduce Public Food Procurement Policy Design as a major advocacy campaign to co-creating an enabling framework for scaling.

This chapter describes the process of gradual articulation of service design as a potentially effective approach to achieving the complex objectives of the *Integration Project*. The chapter will conclude with questions for discussion on how case studies can be identified as prototypes for scaling, and how a policy framework can be

constructed enabling the scaling process. The prototypes were articulated and tested by means of communication in multiple platforms for exchanges among Food Program partners, organized by the *Integration Project.* The *Integration Project* faced enormous challenges as it had to—due to the Covid-19 crisis—conduct partners' platforms and reflections on case study outcomes online, instead of the human-to-human interaction of previous years. The high degree of challenge implied in a gradual introduction of service design for effective food policy development in a context of extreme complexity and emergency can be illustrated as follows.

The Thailand Development Research Institute (TDRI), a leading think tank, advised ThaiHealth on a range of megatrends for the post-pandemic era. The megatrends were also reported in the English daily Bangkok Post. TDRI predicted the inevitable adaptation of the business sector to climate emergency through investment in "environmental, social, and governance-conscious business practices". However, TDRI warned, "the economic disparity between the rich and the poor (…) will continue to increase (…) as low-income people have less access to funding and digital technology causing rising political tensions" (Polkuamdee, 2021). Obviously, this observation also applies to the accessibility and affordability of healthy food.

Moreover, the increasing incidence of non-communicable diseases (NCDs) causes rising public health expenditures. Non-communicable diseases are a major health problem not only in Thailand but the world over. According to the World Health Organization (WHO), NCDs kill 41 million people globally each year, or 71% of all deaths. Cardiovascular diseases account for most NCD deaths (17.9 million annually), followed by cancer (9.3 million), respiratory diseases (4.1 million), and diabetes (1.5 million) (World Health Organization, n.d.,).

> Unhealthy diets are responsible for millions of deaths and lost years of good health annually. Urgent action is needed to stop the growing consumption of foods and beverages that lead to unhealthy diets. (World Health Organization, 2021)

Policymakers, facing a climate emergency, including both environmental problems as well as related economic insecurity and educational challenges, seek new insights, knowledge, and governance principles to enable humanity to induce genuine "transformation". Transformation is identified as an unavoidable fundamental change required to achieve sustainability. Sustainable food systems are vital for overall sustainability (FAO, 2020). In *Public Food Procurement: A Transformative Instrument for Sustainable Food Systems* (Stein et al., 2022) state:

> Public food procurement policies can be used to promote healthy diets, based on sustainable food systems, in workplaces, schools, universities, hospitals, aged care facilities, and other venues at which public meals are provided. A key characteristic of *public food procurement* is that it offers the opportunity to determine the way food is procured in addition to what type of food is purchased (local, diverse, nutritious, healthy, culturally appropriate, etc.), from whom (smallholder farmers, small and medium food enterprises, women, youth, and/or other vulnerable groups), and from which type of production (from agroecology or organic or other modes of agricultural production that ensure environmental sustainability as well as biodiversity).

This chapter on Service Design for ThaiHealth Food Program, written from the perspective of the *Integration Project Team* for an international audience, advocates

for active consultation and participation of stakeholders, especially the Food Program partners. Consultation could be shaped through local, regional, and international exchanges and result in broader collaboration. In this context, the bold aim of the Food Program 2022–2032 to contribute to the provision of sustainable, healthy food for all in Thailand, must be appreciated as an extraordinarily complex but extremely urgent endeavour.

This complexity and emergency implied in the socio-political and cultural contexts require a new sense of responsibility among all stakeholders in the food system, increasingly conceptualized as *Food Citizenship.* Wilkins (2005) defines food citizenship as:

> … the practice of engaging in food-related behaviors that support, rather than threaten, the development of a democratic, socially and economically just, and environmentally sustainable food system.

The second part of this chapter focuses on two case studies selected for a detailed description of their initial steps at the grassroots level in the process toward participatory food citizenship. An important question is: how far can the interface between social capital embedded in tradition and the social innovation of contemporary purpose-driven communities, strengthen scaling of "healthy-food-for-all" prototypes? A dynamic balance between tradition and social innovation may be needed for long-term, lasting, scaling impact and social transformation. The balance between tradition and modernity can be fruitful in various ways, depending on local conditions.

In summary, this chapter aims to illustrate the complexity surrounding the ThaiHealth Food Program in terms of local and international challenges as well as multiple stakeholder dynamics. The chapter tries to formulate questions and initiatives on how service design could inform the overall analysis, stakeholder collaboration, and impact management of the *Integration Project*, by prototyping new food communities and related collaborative services.

2 Context of the Study

2.1 Food Program Partnerships and Services

The partners in the Food Program—both implementing projects and various supporting projects—are classified, in general, over three partially overlapping categories: *Government agencies and universities*; *NGOs and civil society organizations*; and *social enterprises.* Government agencies have been invested in the nodes of schools and hospitals. 'Node' is a setting unit for implementing projects engaging with local partners and is also the unit of analysis. The *Integration Project* uses the term 'node' in the communication with project partners for the articulation of the *area-based approach* of the Food Program (Fig. 10.1).

The *content* of the area-based service delivered to the four nodes as above is formulated in terms of three interactive "pillars" of the Food Program, including nutrition, food safety and food security. The "three pillars" are basic elements of food policy, included from the inception of the Food Program (see for the pillars in Fig. 10.2).

Projects supported by the Food Program are mainly locally based and deliver concrete services at grassroots levels. In addition to a range of farmers' markets for individual and family consumers, Food Program partners ensure that schools provide healthy lunches for children. Food Program-enabled "Green Hospitals" provide healthy daily meals for patients. Green Hospitals also facilitate farmers' markets on their premises for visiting relatives and communities. The two target groups, school children and hospital patients, should be considered the highest priority for improving access to healthy food and diets and are characterized as institutional consumers.

An important approach to the improvement of food systems is shortening or localizing the distance between producers and consumers. In a recent interview, design-for-social-innovation pioneer Ezio Manzini phrased such approach as "rebuilding proximity" (Manzini, 2022). Already in an early stage it was envisioned that the future of sustainable food systems would depend on *localization* (Norberg-Hodge et al., 2002).[1]

2.2 *Three Pillars of the Food Program*

The 'Nutrition' pillar, mainly represented by nutritionists serving in government hospitals and at universities, targets the content of meals, the ingredients, and health impact—with increasing calls to take local food characteristics and "local wisdom"

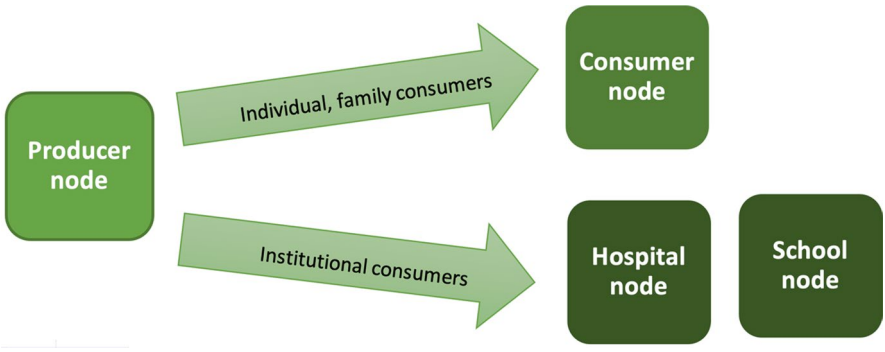

Fig. 10.1 Mapping the food program partnership: The four nodes of the food program partnership

[1] *Bringing the Food Economy Home,* 2004, was one of the first books published in Thai language by Suan Nguen Mee Ma publishers (Willenswaard, 2015).

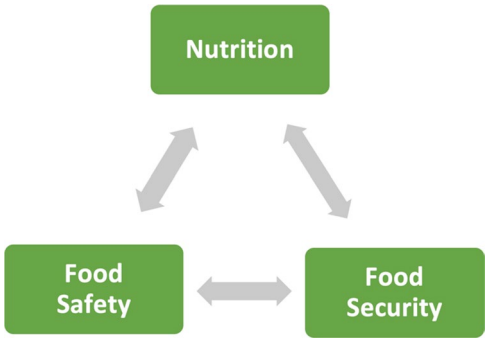

Fig. 10.2 The three pillars of the food program

into account in academic assessment. 'Food Safety' concerns the accessibility to safe food and the protection from hazardous substances in food, by means of government regulations and self-organization of producer-consumer coalitions, as well as civil society *Food Watch*. Finally, 'Food Security' considers the socio-political and economic conditions determining the food supply chain. These are the primary concerns of NGOs[2] and social enterprises. However, these concerns—like all pillars—are increasing challenges for multi-stakeholder and transversal collaboration. One of the 'services' of the *Integration Project* is therefore to shape and organize transversal platforms for collaboration and policy development, beyond "single issue" practices and their defining worldviews.

2.3 A Framework for Sustainable Food System Innovation

Through intensive interaction—by means of multiple forums—between the Food Program Committee and management, Food Program partners (implementing and supporting projects), as well as numerous dialogues with policymakers, academics, and local wisdom leaders, the *Integration Project* has carefully conceived a framework with three driving social innovation principles for sustainable food system development. The three social innovation principles are *Food citizenship—Food literacy—Food community* ("three foods") (Fig. 10.3).

The essence of food citizenship is that the human factor in food systems is broadened from 'producers' and 'consumers' within a narrow economic framework, to *food citizens* in a perspective of multi-stakeholder civil responsibility for local as well as global wellbeing and mutual care. This repositioning enabled by *food literacy* co-creates 'self-organized' *food communities.*

Coincidentally, these three principles of social innovation within the food sector resonate strongly with the *tri-power strategy* of ThaiHealth. The architect of ThaiHealth, well-respected Dr. Prawase Wasi conceived the tri-power concept of

[2] Non-Governmental Organizations

Fig. 10.3 The three social innovation principles or key issues: food citizenship—food literacy—food community ('three foods')

social mobilization, creation of knowledge, and *participatory policy advocacy*. The tri-power concept has guided ThaiHealth policy development since its inception (Sopitarchasak et al., 2015). One step further, advocacy may lead to the scaling of flagship projects and thus imply social entrepreneurship towards co-creating a local food economy, not only by the policy development but by Food Program partners delivering concrete sustainable food economy services.

Figure 10.3 shows the circular dynamics of the three social innovation principles, or key issues. Conceptualization emerged from interaction with the diversity of Food Program partners. The principles' dynamics are hypothesized as the "heart" of an inspired multiple scaling process contributing to grounding the ten-year Food Program policy development in service delivery practice.

The circular dynamics can be understood in this way. People's emerging awareness (the innovation "spark") is strengthened by insights as well as accurate knowledge—or *food literacy*—embracing multiple aspects of food systems. This leads to the growth of a social movement of *food citizens* who assume responsibility, individually or collectively, as stakeholders in the food system. A growing sense of responsibility results in preparedness for collaboration towards initiation and growth of *food communities,* ultimately constituting networks of local food economies within a wider food system. Experiences and "lessons learned" feed into the continuous sharing and accumulation of *food literacy*; deepening and broader consolidation of *food citizens'* responsibilities and strengthening of the *food communities*. The circular dynamics, once incited, manifest a process of co-creation.

The notion of food citizenship is determined by a concrete sense of responsibility for mutually supportive, well-being co-creation. And increasingly by a growing ecological awareness of "One Earth" (Shiva & Shiva, 2018), and the recognition of *global*—or universal—*citizenship.* Thus, service design for food policy is embedded in cultural innovation. Pozzo et al. (2020) argue that cultural innovation can, among many factors, "be understood as the outcome of complex co-creation

processes". Hence, the service design for food policy aims to ultimately provide an appropriate focus on service delivery by means of prototype building, scaling, advocacy, and enabling the policy development in a broader context of cultural innovation.

2.4 Requirements for Food System Transformation

In summary, food system transformation requires the integration of four dimensions of the Food Program policy. First, more interaction among partners, in order to learn, get motivated and exchange operational skills. There should be a framework of knowledge management with interdisciplinary academic support based on inclusive overarching worldviews, paired with 'traditional knowledge' (*'local wisdom'* in Thai culture). According to Matallo Junior (2021):

> More recently, many scientists have begun to understand that such traditional knowledge extends far beyond what in western science would be called science in its different branches such as soils, water, botanic, entomology etc. The knowledge possessed by such tradition-based, non-industrial societies is essentially of an "ecological" nature, since it seeks to understand and explain the functions and workings of ecosystems, their biological communities, the interacting species of animals and plants and the entire functioning of the physical systems.

Second, support for a transformation process in a truly long-term perspective with a clear direction based on the qualities of flagship projects, described in case studies, evolving into prototypes and scaling. Third, stronger alignment of the Food Program's communication strategy with collective media campaigns on specific issues and trends in society. And lastly, advocacy towards a Service Design for Food Policy and more concretely, as decided recently, Public Food Procurement Policy Design.

The four-dimensional integration generates valid knowledge, based on learning by doing, and co-creates collaborative capacities enabling Design for Food Policy to be steered towards *meso-level scaling*, ultimately bridging micro and macro dimensions of policy development.

Micro-level policy development is project- or single-organization-based, while *macro policies* unfold at provincial, national, and global levels. Processes of *meso-level scaling* address opportunities for local food economy collaboration at district and sub-district levels. The meso-level has been hypothesized to provide the best options for scaling, with beneficial impacts at micro- and macro-levels.

3 Service Design for Food Policy

3.1 Challenges and Solutions

The purpose of service design for *Integration Project*- enabled food policy is to co-create collaborative and long-term approaches to improve the availability and affordability of healthy diets. Solutions require in-depth reflection, social innovations, and multi-stakeholder advocacy processes.

A striking example illustrates the complexity. A survey, reported in the Thai language to ThaiHealth, in line with joint research on Pesticide Use in Southeast Asia (Thai Education Foundation, 2018) revealed that school children are at high risk of exposure to unsafe vegetables and fruits. Thai Education Foundation, a Food Program implementing partner, conducted a survey in 2018–2019 on blood contamination of primary school students aged 6–11 in 4 provinces representing 4 regions of Thailand: Chiang Mai, Sakon Nakhon, Pathum Thani, and Phang Nga. About 350 samples were taken from students in each province. The chemical contamination ranged from 50% in Sakon Nakhon to 70% in Pathum Thani (located about one and a half hours drive from Bangkok). Shaping solutions for this extremely alarming situation[3] requires long-term collaboration from the nutrition, food safety as well as food security perspectives. Problem-solving is beyond the capacity of single partners only. It requires an adequate long-term food policy to be co-created collectively.

The Food Program and its project partners at all levels increasingly realize that integration is needed as a fundamental requirement for an adequate food systems approach. Food systems are not segregated but include the whole food supply chain: production, distribution, consumption, all the issues which the Food Program addresses (i.e., nutrition, food safety, and food security); as well as socio-political contextual factors and global trends. The complexity of food systems was gradually analyzed through several forums organized in the framework of the *Integration Project*, during 2020 and 2021.

Manzini, globally known for his 'design when everybody designs' approach and founder of the DESIS network,[4] contributed significantly, in particular through *Integration Project* facilitation, to steering the policy design process toward a "design for social innovation" trajectory.

Manzini made partners, through the *Integration Project Team*, aware of opportunities for transversal collaboration and its benefits for policy development. This included the organization of diverse forums to facilitate project partners' communication, exchanges, and exploratory experiments across various silos or sectors. The subject of transversal collaboration was: (a) knowledge exchange across the three pillars of nutrition, food safety, and food security; (b) best practices

[3] On situations elsewhere, The Guardian, U.K., reports, 24 March 2022, *European fruit with traces of most toxic pesticides "up 53% in nine years"*. (Neslan, 2022).

[4] DESIS = Design for Social Innovation and Sustainability.

exchange presented at different forums, related to the "school node" and "hospital node" and (c) knowledge packages such as how to share operational tools among partners like the computer program of Thai School Lunch; how to conduct participatory guarantee systems (PGS); and much more. Ultimately, ThaiHealth also realized it would be conducive to food policy development if all 15 programs that deal with a "food component" would work together with the Food Program.

Thus, localization of the food economy does not only mean shortening the physical distance between production and consumption to reduce costs, which certainly makes a significant impact. It includes also strengthening a sense of place and, above all, intensifying relationships in terms of "direct link" between people. As well as understanding and recognizing 'food as a commons'[5] (Vivero-Pol et al., 2019), rather than as a commodity, implying innovation of transversal (cutting-cross) peer governance. Chang (2019) captures the essence of the notion of 'food as a commons' as below:

> (…) we would like to assert that growing a care-based commons food regime is like entering a new epoch in history: the pattern is not written, but we make history by living, experiencing, generating, reproducing and protecting the commons.

Local food economies, inspired by Community Supported Agriculture (CSA), are not limited to traditional communities, although these represent vital cultural capital. *Sense of place*, according to Manzini while referring to the German scholar Wolfgang Sachs, evolves over time into "*cosmopolitan localism"* (Manzini, 2015, p. 202). Places are not considered isolated entities, but nodes in short-distance and long-distance networks. The development of interconnected nodes toward a distributed local food economy constitutes a pathway to a future scenario described by Manzini as a "SLOC scenario":

> We will refer to it as the SLOC Scenario, where SLOC stands for small, local, open, connected. These four adjectives, in fact, synthesize very well the socio-technical system on which this scenario is based: a distributed production and consumption system where the global is a "network of locals".

In determining the direction of—as phrased by Manzini—our "*social innovation journey",* we tend to emphasize, rather than scenario design, service design as our priority orientation. There are three reasons for this. In the first place, service-mindedness keeps us close to the Food Program partners who by and large deliver very concrete services (while asserting that food is not in the first place a commodity but a service connecting people). In the second place, it helps us clarify the position of the *Integration Project* as a supporting project: *Integration Project* is a project partner equally delivering services, rather than being associated with a position within the Food Program administration. That role, in the third place, enables us to clarify that the purpose of the *Integration Project*, together with other Food Program partners, is to deliver food policy through co-creation as a service. Even though this service targets the policy level and is, to a considerable extent,

[5] 'Commons' are characterized by self-organization, co-ownership, and sharing, as well as trust building and care for the quality of relationships, including with the environment.

exploratory. From this perspective, in the most recent episode of the collective social innovation journey, it was decided, in order to enable a broad scaling campaign, to focus on Public Food Procurement Policy Design both for Schools and Hospitals.

3.2 Scope of Design

The particular service design approach explored by *Integration Project* is initially derived from two sources: interactions with and expert guidance by Ezio Manzini in 2020–2021 based on his publications *Design, When Everybody Designs* (Manzini, 2015) and *Politics of the Everyday* (Manzini, 2019); and the introductory *Design methods for developing services* of the Technology Strategy Board of the UK's Design Council (Design Council, 2015). Collaboration with Thai Service Design professionals and the Creative Economy Agency-CEA (formerly known as the Thailand Creative and Design Centre (TCDC)) was initiated and is envisaged to intensify in the next phase of the project.

Two cases or 'prototypes' have been synthesized—mainly based on communications among the Food Program partners in forum meetings—toward the articulation of service design to be included in the 10-year Healthy Food Program Strategy. The cases, representing the "school" and "hospital" nodes, are described in the second half of this chapter.

In addition to case study development, and in the perspective of previous experiences in 2021–2022, the *Integration Project* made a tentative overview of existing projects and models in Thailand and elsewhere for initial guidance toward articulating case studies, prototyping, scaling and policy development. Only some can be mentioned here: the *Amsterdam Healthy Weight Program* is a successful approach to youth obesity prevention and reduction (Hawkes et al. 2017), seen as a possible model for a broader "integration" approach to be adjusted to the Thai context. The British Obesity Policy Research Unit (OPRU) evaluated the Dutch program and formulated seven "transferable active elements that underpin the program". Also, the frame of reference of *The No-Nonsense Guide to World Food* (Roberts, 2013) was studied, and, subsequently, the Food Policy Council movement in Canada and USA. Attention was given to the municipal governance perspective of the *Milan Urban Food Policy Pact* (MUFPP, 2022) and the activities and policy advocacy of *URGENCI, the global Community Supported Agriculture (CSA) network* and their online course on food citizenship (URGENCI, 2021).

Lastly, but most importantly, in 2020–21, the *Integration Project* has had, as mentioned, the great opportunity to work closely with Manzini. The significance of the *Integration Project* will rely to a high extent on how the Project forums/platforms can generate participatory Public Food Procurement Policy Design.

4 Case Studies

Taking the three social innovation principles or 'three foods' as a hypothesis, the *Integration Project* is in the process (unfortunately for two years seriously disturbed by the Covid-19 pandemic) of describing and articulating a number of prototypes, or flagship projects for consideration as models within the future Food Program Ten Years Plan. The prototypes or case studies are embedded within a broader program: (1) Healthy School Meals; (2) Green District Hospitals; (3) Community enterprises of local producers; (4) Urban consumer initiatives; (5) Indigenous people's transition to localized sustainable food production; and (6) Young Food. Out from this broad spectrum two case studies have been prioritized: the "Healthy School Meals" example as well as a "Green District Hospital" model. In brief:

Ban Chom Phra Schools Network, Chom Phra District, Surin Province This case involves food communities emerging within the national Primary School Network[6] with local community farmer groups providing school lunch ingredients [vegetables, fruit, and rice] services.

Chiang Saen District Hospital, Chiang Rai Province Chiang Saen Hospital is a district hospital[7] facilitating diverse local initiatives promoting healthy food. Farmers' leaders and a new type of "health extension worker" solve problems throughout the food supply chain. The Food Program Implementing Partner is *Mokichi Okada Association* (MOA) Thailand, led by Suchan Silamnuay.

4.1 Case Study 1: Ban Chom Phra School Network, Surin

4.1.1 Description

Chom Phra District consists of 9 subdistricts with a total of 105 villages, most of which are farming communities with paddy fields, orchards, and livestock. Conventional industrial agriculture covers most of the area. However, pioneering organic extension services have made the villages in Chom Phra into important sites of organic agriculture practice. Most farmers in this region are more familiar with growing rice than vegetables. Dr. Jinda Phromtha, a health officer and dentist, pioneer of the local *Thai Children Don't Eat Sweet Things* network, mediates not only with 40 schools but also with diverse actors, university lecturers, local government officers, and farmers.

A service design ideation and development platform have been being set-up. It facilitated community farmers and teachers to participate in workshops to design

[6] Thailand has about 30,000 primary schools under the Office of the Basic Education Commission, Ministry of Education.

[7] Thailand has about 700 district hospitals each with between 20 to not more than 100 beds.

and plan the first tryout and implementation service. The objective of the workshop was 'how can organic vegetables be made available for school lunches?'. The major three key implementing steps were: (1) Schools set a central menu over one semester and come out with a list of vegetable items to be used over the period; (2) organic farming groups in all 9 subdistricts start growing organic vegetables collectively based on the vegetable list; (3) logistics and transport from farms to schools are planned collectively.

However, the groups explained that they still face many challenges. A major constraint is that the Government Procurement system makes not more than 20 Baht (0.57 US dollars) available per lunch per child. At this low available budget cost, and without the schools being able to provide advance payments, growing sufficient quantity and variety of organic vegetables to meet the constant demand is very difficult. Problems arise from climate change: drought and water shortages; plant protection from disease and pests; lack of knowledge and skills in post-harvest management. Also, the communication between farmers and schools, including negotiating delivery conditions, is very challenging. Moreover, organic products are only in the beginning stages of being certified in the framework of a Participatory Guarantee System (PGS). This is a regulatory measure often required by government schools and hospitals.

Various Food Program supporting partners over time have contributed to the process of mapping the complexity of partners' challenges as well as opportunities for scaling in diverse situations. A more systematic service design approach offered a breakthrough in making mapping and subsequent prototyping more effective. Participatory project mapping is a step-by-step process of interweaving territorial, livelihood, organizational, human factor, and timeline coordinates. It provides the background information for problem analysis and enables the identification of opportunities for growth. Participatory project mapping as an element of conducting case studies starts with exploratory human interaction as well as territorial and livelihood orientation (Fig. 10.4).

Identifying core actors in networks and organizations is crucial and it requires social engagement beyond self-interest. The limitations and rigidity of the Government Procurement system were identified as a major challenge. More reflective project mapping in the future will be needed in order to adequately match the complexity and human dedication demonstrated in this and other cases.

4.1.2 Organization and Service

Surin provincial mobilization program toward organic agriculture was extended to Chom Phra District. The key binding element emerging from the two sides—the schools and the local communities—is a shared goal: "to promote safe food consumption in local communities and particularly healthy food services to schools."

At District Level, the *District Health Board* serves as the mechanism to promote quality of life and integration (Fig. 10.5). The board members developed "Safe food for schools" as one of their five main integrated topics. The board believes that

Fig. 10.4 Local farmers and school teachers during the participatory mapping workshop to plan the service design process

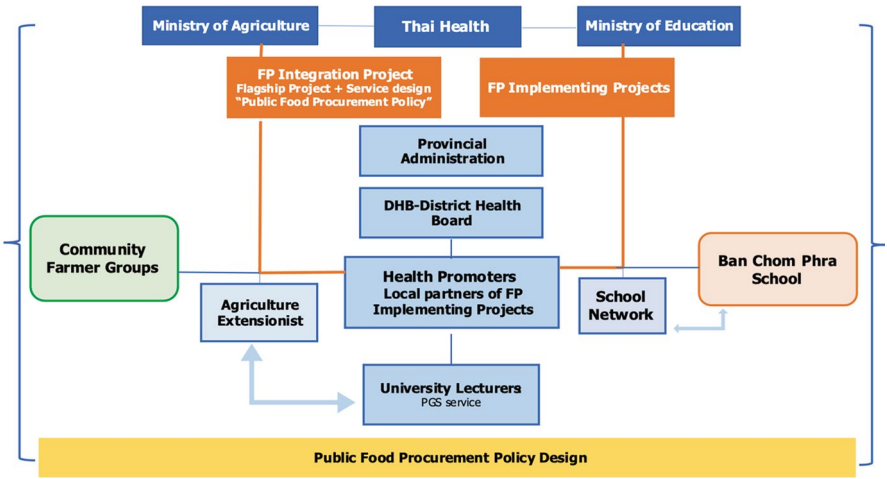

Fig. 10.5 The Food Program organizational framework for public food procurement policy design, with District Health Board (DHB) at a central role

"food can change the community, Thailand, and the world". Food determines the health of the environment (including climate) as well as of the people.

As a result, product management mechanisms at the community level were set up. The actors include schools, farmers, and organic agriculture working groups. The committee consists of teachers, knowledgeable locals, subdistrict volunteers, non-formal education teachers, and agricultural extensionists.

Collective leadership is an important success factor for healthy food service design. The initiative began at Ban Chom Phra School. Its director followed the District Chief's vision to expand the school-community safe food service program

to all subdistricts. The Ban Chom Phra School led in sourcing safe products from local farmers for a trial period of one semester. The program gained cooperation from the school board, teacher team, student leaders, and school cooks/caterers. Furthermore, the school connected to other schools through the "subdistrict common menu" scheme and with farmers in many communities. The goal is to have sufficient supply to serve healthy school lunches and expand the network to other schools to build an extended food community.

4.1.3 Prototypes

The prototyping of "healthy food service for school lunch" in Ban Chom Phra is part of a larger effort involving food-related programs and is envisaged to play an important role in Public Food Procurement Policy Design. Its aim is to conceptualize the prototype and make sure that it can replicate, generate, and then advocate. The prototype shapes a model for collaboration between farmers' groups and schools in providing healthy school meals. The methodology tested consists of two components. First, a school issues purchase orders which allows farmers to plan their production. The Participatory Guarantee System (PGS)—a peer-driven organic certification scheme—generates confidence among farmers that they can provide sufficient quantity and quality vegetables to meet school demand.

Second, the *"common menu"* gives farmers a better understanding of how much they need to produce to meet demand. Discussions among school teachers and cooks allow farmers to understand how to use the Thai School Lunch program to create nutritious school lunches which are at the same time compatible with the farmer's production capacity. Each subdistrict prepared with their farmers to start with a common menu for one lunch per week, ultimately scaling up to five lunches per week.

4.1.4 New Food Community Model

The actors in the Ban Chom Phra School's effort seek alignment with provincial and national strategies. The services delivered in this emerging new food community manifest at multiple levels as seen in Fig. 10.5.

School Level School director, teachers, and school cooks or caterers. This level uses the school network to introduce the plan to the community.

District Level District chief, hospital staff, nutritionists, district public health officials, district agriculture extension officials, district non-formal education officials, and provincial development network coordinators. The *District Health Board* is the central unit to connect to their plans.

Provincial Level The provincial governor, provincial administrative officials, provincial primary education officials, provincial agricultural extension officials, local

health assembly members, civic organization members, community entrepreneurs, and partners of ThaiHealth. Their target is to mobilize a strategic policy at the provincial level.

Academic Level Academic institutes of various disciplines provide innovation support and scientific methodology. They strengthen advocacy with evidence.

National Level Almost all Ministries are represented in the Board of ThaiHealth. They can be mobilized in a workable model, specific for this project in the framework of the Public Food Procurement Policy Design.

From the perspective of possible scaling of this local initiative based on a *food community* approach, policymakers at all levels start considering potential directions for future development. This can include setting up a Chom Phra Flagship Model as a "*Food Community System* to promote healthy living". It is strategically important to initially scale the local "school-community-based healthy food program" to the level of a provincial strategy. To support farmers' initiatives, a community fund for farmers would be helpful. Previously, the group was funded mainly by the subdistrict administration. For long-term development, national scale development of professional social innovation support would be essential. Combined skills in safe food management, community enterprise, as well as nutrition for schoolchildren, should be prioritized. Ultimately this may require a social innovation and service design *curriculum* and professional food career development program. If the Government Procurement system would agree with an experiment allowing appropriate conditions—in line with sustainable development indicators and the Human Right to healthy food—for District-level School Lunch Programs, this would create a platform of scaling for the Chom Phra Flagship Model. In general terms, it would constitute a long-term "Food Community to promote healthy living" program.

4.2 Case Study 2: Chiang Saen District Hospital, Chiang Rai

4.2.1 Description

In recent years, a considerable number of cancer cases among villagers in the Chiang Saen district were diagnosed, at a very alarming rate. The trend was hypothesized as due to contaminants from agricultural chemical inputs. A hospital-initiated safe food community is to be considered not a dream, but a pragmatic response as the hospital has the duty to provide healthcare to the people.

Chiang Saen District Hospital developed a close collaboration with *Mokichi Okada Association* (MOA) Thailand. MOA Thailand is an Implementing Project partner of the Food Program. MOA Thailand is an independent organization inspired by practices in Japan. Its major area of work is promoting safe food at district hospitals in several provinces (Chiang Rai, Lop Buri, Sa Kaew, Lampang, etc.). The

nature farming system of MOA emphasizes avoidance of the use of chemical fertilizers and pesticides; utilization of natural systems and biological cycles to ensure healthy productive soils; utilization of on-farm resources.

Local farmers and the hospital team work closely together to ensure the quality of food supplied to the hospital. Patients are included in farm work as a therapeutic activity (Fig. 10.6). Maintaining a healthy population does not only mean providing good medical and nursing treatments as a *therapeutic* response, but proactively addressing the root causes of sickness in a *preventive* approach. The hospital management team recognizes that food production and consumption are key factors that affect the population's health and well-being. The hospital has therefore designed and implemented policies to create a safe food community.

Chiang Saen District Hospital is a concrete example to illustrate the rationale for social innovation and the role of a service design approach. The hospital is positioned in the production role as well as the consumption and distribution roles of the food supply chain. This allows the hospital to formulate guidelines for a safe food community throughout the whole food supply chain. The guidelines also require the hospital to work in "all directions" to link with multiple stakeholders in order to solve long-term health problems. Participation from multiple sectors can create a food service design process from the community level to hospital policy, local administrative policy, and policy development at the District Health Board.

On the community side, farmers receive training to become natural farming extension workers. MOA Thailand promotes food safety and food security in the community by encouraging production on farmers' land, urban gardens, school

Fig. 10.6 Farming as a therapeutic activity

gardens, temple gardens, and the Chiang Saen Hospital—a garden for therapeutic purposes. The gradual integration of collaborative networks of extension workers strengthens the push for safe food in hospitals and for all consumers. This is achieved by delivering agricultural products and safe food not only to the hospital kitchens but also by creating weekly green markets.

4.2.2 Organization and Service

Within the Chiang Saen Hospital, several agencies and people are involved in a network of relations that enables the formation of a contemporary food community. In 2018, the Ministry of Public Health announced the nationwide *Green and Clean Hospital Policy*. The Director of Chiang Saen Hospital welcomed the policy and immediately moved to implementation. A major reason was, as mentioned above, the increasingly high number of non-communicable (NCD) cases, notably cancer, in Chiang Saen. In 2018, there were approximately 250 cases[8] of cancer per year. This led the hospital to take a proactive approach.

At the leadership level of the initiative is the Director of the hospital who collaborates with the Food Program and MOA Thailand. MOA Thailand collaborates with farmers and local agencies: the municipality, the Non-Formal, and Informal Education Centre, the District Health Board, and the farmer groups/community enterprises. MOA Thailand enabled people to practice natural farming and to form a collective of 36 persons from 16 households, now expanded to 25 households.

As a result, the hospital implements health promotion efforts in all directions within and beyond the hospital boundary. More importantly, the capacity-building process aims to transform the food actors into *food citizens* by extending individual and family actions to the community level and co-creating a safe food system. The key food actors involved include:

- **The Director** plays a very important role in initiating a safe food community in and around the hospital. The hospital reached out to the Informal Education Centre where many producers are already being trained by MOA Thailand. The hospital signed a memorandum of understanding (MOU) with MOA Thailand. This resulted from a series of discussions and sharing between farmers' leaders and the hospital team. All these activities were managed systematically with a dedicated working committee.
- **The working committee** operates the Green and Clean Hospital program in and around the hospital. This includes various health promotion activities, such as health check-ups and contaminant testing at food processing factories, shops, and rice mills. The hospital's Management Team oversees standards and tools.
- **In-patients/drug addiction rehab residents** are the experimental target group for the safe food program. Their food is prepared directly by the hospital kitchen.

[8] Source: Chiang Saen Hospital Annual Report. The population in Chiang Saen District, bordering both Myanmar and Laos, is about 55,000 people.

Out-patients have access to the weekly green market. Drug addiction rehab residents do gardening at the hospital to help improve their self-esteem.

- **The hospital cooks** improved their knowledge and understanding of nutrition and healthy ingredients for patients.
- **Farmer groups and community enterprises** are connected to the green markets at the hospital. These farmers have taken up and gained expertise in natural farming practices.
- **Temples** are the faith centers of communities. The abbot plays an important role in calming people's minds and guiding their livelihoods. For example, the abbot uses "Nature + Buddhist meditation" as a guiding principle for community development.
- **Schools and public day-care** centers are also spaces related to the whole food supply chain in the *Chiang Saen Model*. Collaboration with schools in the district has begun.

Quite a number of food actors in the local community start identifying themselves as *food citizens*. They play important roles in building farmer groups and connecting with health extension officers as well as other stakeholders. Members of the village near Chiang Saen Hospital became very supportive of the hospital model.

4.3 Impacts and Opportunities for Scaling

The learning-by-doing approach to building a model has proven to be effective. In the period of collaboration, the number of cancer cases in the district was reduced within one year by 10%, according to the hospital records. The model also enabled stronger bonds and a team spirit between hospital staff and local networks.

Chiang Saen Hospital has been presented in the Hospital Node organized by *Integration Project*, as a potential prototype for evidence-based Public Food Procurement Policy Design. Ongoing information transfer from MOA Thailand—natural farming (cultivation and consumption), food education, holistic health mindset, and green market management—regenerated local communities and their interest in health promotion collaboration. Chemical contamination in food decreased, evidenced by blood testing in the district. The strengthened community spirit can serve as a model of a newly founded *food community.*

The *Green and Clean Hospital policy* provides some space for food procurement management beyond the standard procurement system. It is an important element of the *Chiang Saen Hospital prototype.* Public Food Procurement Design can advocate conditions for scaling healthy food distribution at both schools and District Hospitals. Food Policy Councils (Roberts, 2013) at all levels are envisaged to contribute to this process.

5 Discussion and Conclusions

5.1 ThaiHealth Food Program Flagship Projects as Food Service Prototypes

Having two cases as prototypes, the network of 40 schools in Chom Phra District in Surin Province and the Hospital in Chiang Saen District, Chiang Rai Province, both in Thailand—reached out to organic or natural agricultural producers for food acquisition, partnering with local farming groups in their territory.

Despite the serious limits and constraints of the Government Procurement system, the schools and hospitals agreed and guaranteed a certain purchase quantity and fair price to farmers while the farmer groups guaranteed healthy vegetables and rice to their institutional clients. This collaboration is, in general, based on the partnership principles of Community Supported Agriculture (CSA) (URGENCI, 2021),

CSA is an alternative food system that demonstrates the shortest possible link between producers' nodes and consumers' nodes (Fig. 10.1). However, CSA in general has been mainly focused on collaboration between farmers and individual consumers. As a matter of "innovation action," the *Integration Project* and its partners initiated experimentation with institutional consumers represented by two Food Program nodes: schools and hospitals. Among a broader specter of case studies, these nodes have demonstrated potentiality for scaling. Tentative interaction in forums indicated growing interest among the 30,000 primary schools and 700 district hospitals. However, advocacy toward enabling food policies, in particular Public Food Procurement Policy—by definition requiring multi-stakeholder collaboration—is considered an inevitable condition for scaling by significant numbers and in a long term. This is the most important conclusion at the point of transition of the Integration Project to a new project phase, mid 2022. The rationale leading to this decision can be found in WHO (2021) *Action Framework for Developing and Implementing Public Food Procurement and Service Policies for a Healthy Diet:*

> Every day, foods and beverages, including meals and snacks, are served and sold in public settings, such as government offices, schools, childcare centers, nursing homes, hospitals, health centers, community centers, seniors centers, military bases and prisons, as well as in shops or stalls surrounding these settings. In addition, many governments purchase food for government-funded programs, such as school meal programs and social protection programs. Collectively, these settings and programs have a large population reach, including vulnerable groups such as children and older people.

Our experimentation with design for social innovation and service design has demonstrated a pathway to a decision to focus primarily on advocacy addressing Public Food Procurement Policy. These design approaches have helped shape an ongoing "innovation journey" towards the improvement of accessibility and affordability of healthy, sustainable, food for all in Thailand. *Service design* was instrumental in articulating the methodological path from the small-scale initiative to place-based mapping, to prototyping, to scaling and advocacy which addresses Food Policy Design.

Whereas the organization structure for this endeavor has been laid out with initial clarity in the case of the school node, with a likely pattern expected to be applicable to the hospital node, an important question remains: how, with the help of the three social innovation principles or key issues, i.e., *food literacy, food citizenship,* and *food community*, a self-organizing, multi-stakeholder, social innovation movement can be generated that takes care of food systems with fairness, sense for human and environmental quality, in a perspective of responsibility for the vulnerable as well as for future generations. Public Food Procurement Policy Design is not more than an enabling policy toward this aim.

5.2 Food Community Building

The two flagship projects have shown that healthy food and services are interdependent with healthy communities. Food systems rooted in community, innovated by schools and hospitals, demonstrate that new actors have been included. Participants at various levels identify themselves as *food citizens*. Both the schools and the hospitals have been capable of creating new food services. Community building is based not only on food as an economic activity, but on "direct-link" relations, truly human-to-human relationships that naturally lead to healthy food services and mutual care as in food as a commons.

The hospital has demonstrated the power of social innovation that can transform traditional hospitals by offering more services than hospitals normally provide. In this sense, a hospital not only takes care of patients but also co-organizes vegetable gardens, green markets and working partnerships with local farmers. These place-based innovative activities and services enhance relationships between farmers and people who share interest in healthy food. The schools and hospitals are building food communities, thus improving health services within their communities at large.

5.3 Community Regeneration: Reviving Traditional Community Relations with New Purpose

Traditional communities are based on what people are doing within traditional patterns. A doctor takes care of patients. Teachers teach students. A *new community*, like food community driven by food citizens with critical awareness, is based on projects for change. There are actors with vision who actively promote and collectively carry out something that has not been done before. A new food community puts people together with new motivations and new relationships. A key to future development is to find the interaction and new relationships between the traditional and the new communities. In the framework of *food literacy,* a modern scientific nutritionist approach may have to integrate with "local wisdom" rooted in

place-based traditional knowledge and food-as-medicine. And a modern awareness of *food citizenship* may have to turn to the traditional wisdom of consensus building in order to make multi-stakeholder collaboration workable beyond majority-power-driven prioritization of single interests.

5.4 The Food Citizens and Their Active Role in Food Service Design Development

Food citizens have rights and duties. A good food citizen is informed about what is good to eat and insists on the right to good food. Her/his duty is to ask the government to co-create a participatory infrastructure to enable healthy food services and promote healthy food for all. Food citizenship is essential for participatory Public Food Procurement Design.

Moreover, food citizens, maybe in the first place, constitute *civil society*. They can determine themselves equally as *global citizens* or *Earth citizens.* People more and more live beyond national citizenship. They become part of healthy food services as a challenge to humanity. In essence, they not only ask for change, but they *make* a change through these new small-scale, distributed, initiatives and networks. Mainstream modernization implies a process of "atomization" (Liu & Kim, 2021) and it disempowers people. This necessitates a reorganization to regain power and to take part in a new form of civil society community. The aim of a participatory service design approach in which "everybody designs" (Manzini, 2015) may be defined as the empowerment of people to define themselves collectively as change makers.

5.5 Scaling and Future Challenges

A community of food has to maintain a relatively small scale in order to keep up with the spirit of the commons and mutual care as practiced in Community Supported Agriculture. From the lessons learned so far, food communities must connect to other local, small-scale entities, whether schools, hospitals, farms, or local markets. Centralized food systems and distributive food systems currently run in parallel. The two cases discussed in this chapter have clearly shown that distributive approaches are greener by means of localization and avoidance of fossil-fuel based applications in agriculture and healthier as evidenced by hospital records. Not only because ingredients are not contaminated but because community collaboration creates meaning, mutual care, and a sense of well-being. The tentative new food community model is a huge experiment. It arguably can demonstrate how the distributive food system constitutes *sustainable development* if given time and appropriate policy support for an experiment of scale.

In a recent interview (Deni & Watkin, n.d.), Manzini mentions that he "arrived to rediscover or discover for the first time the central role of the concept of care". Later he elaborates: "sustainability asks for care, and care asks for proximity" and "this is the link between them".

The great challenge the *Integration Project* may face in the next step of its social innovation journey is to find the link between Public Food Procurement Policy Design and the quality of care implicit in the social innovation dynamics of *Food Literacy—Food Citizenship—*and *Food Community.*

Manzini, in his latest book *Livable Proximity. Ideas for the City that Cares* (Manzini, 2022)[9] compares the innovation journey with the navigation of a sailboat, more than a motorboat.

> Sailing is a continuous recognition of complexity. (…) Sailing does not mean going adrift: rather it means having a destination, having imagined a route taking into account the foreseeable currents and winds, and then knowing how to adapt from time to time, based on what actually happens, locally. Every project, at every scale, is like this today (…). (Manzini, 2022, p. 131).

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Chapter 11
Design for Service with Robots in Elderly Care Facilities in Japan Focusing on Human-to-Human Interaction

Satoru Tokuhisa and Tetsuro Morimoto

Abstract In 2010, seven per cent of the population in Asia was elderly, and this proportion is expected to reach 14 per cent by 2035. Japan was one of the first countries in the world to experience a declining birth rate and ageing population; with its extensive experience in this field, Japan needs to strengthen its cooperation with other countries in the region to deal with the problems of an ageing society and social security systems. In particular, the demand for medical care, elder care and health-related industries is expected to be high in Asian countries with ageing societies. This chapter focuses on elder care services in Japan and discusses service design and business transformation. The use of service robots to address the shortage of workers to assist the increasing number of elderly people is attracting attention. However, there is resistance to technology and robots among the elderly. Through fieldwork at an elder care facility and the implementation of prototypes for service with robots focusing on human-to-human interaction (HHI), we discuss what needs to be considered when designing service robots in the context of elderly care in Japan and and what's the role of service design for that.

Keywords HRI (Human to Robot Interaction) · HHI (Human to Human Interaction) · Service with robots · Elderly care · CPS (Cyber Physical System) · Business transformation

S. Tokuhisa (✉)
Faculty of Design, Kyushu University, Fukuoka, Japan
e-mail: dangkang@design.kyushu-u.ac.jp

T. Morimoto
TOPPAN Holdings Inc., Tokyo, Japan

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1 Introduction

Japan has a rapidly ageing population. In 2015, the percentage of people over 65 years old had reached 26.6%, compared to 21.1% in Germany, the country with the second largest proportion of elderly people (Cabinet Office, 2018). In 2018, the number of people aged over 65 years in Japan had reached 35.57 million, or 28.1% of the total population (Ministry of Internal Affairs and Communications, 2018); it is expected to reach 35.3% in 2040.

The higher the ageing rate, the greater the budget needed for long-term care. The Ministry of Health, Labour and Welfare (MHLW) has divided those in need of long-term care into seven stages and has established the available services and frequency of use for each stage (Foundation for Ageing and Health, 2018). For example, an "Intensive Care Home for the Elderly" can only be used by those who require long-term care at level three or higher. In 2018, the number of people requiring long-term care had reached 6.56 million, and the cost of long-term care had ballooned to 9.9319 trillion yen per a year (MHLW, 2018a, b).

While Japan's long-term care industry has become huge, it suffers from a chronic shortage of manpower. It is estimated that 2.53 million workers will be needed in 2025, but only 2.152 million will be available, leaving a shortage of 377,000 (MHLW, 2015). The turnover rate among care workers, with an average length of service of 5.3 years, is higher than for all industries combined (11.8 years; Tian & Wang, 2019). The high turnover rate has been attributed to low wages relative to the hard work involved (Shusuke, 2011). Unless measures are taken to increase the workforce and to improve production efficiency, it will become increasingly difficult to provide the same standard of care as at present. At the same time, political innovation is needed, as compensation for care is fixed by long-term care insurance.

In this situation, it is expected that introducing technologies and robots into long-term care will not only solve these problems but also transform the business. However, in Japan, according to Broekens et al.'s (2009) classification of service robots, mainly the companion type of assistive social robots has been introduced (Groove X Inc., 2018; National Institute of Advanced Industrial Science and Technology, 2004; Sony, 2018; Yukai Engineering Inc., 2017). Although services using existing telepresence robots have been commercialised, they are limited to guardianship and communication services (Asratec Corp, 2016; IPresence, 2021; Mira Robotics Inc., 2018) and do not contribute much to solving the expected labour shortage. Therefore, the authors decided to design a service that can contribute to the labour shortage in the long-term care industry.

This paper will clarify the following two research questions:

- Firstly, what needs to be considered when designing service robots in the context of elderly care in Japan?
- Secondly, what's the role of service design for that?

We will first investigate the characteristics of service design unique to Japan through a review of previous works. Using the characteristics identified and a prototype of a

service for elderly care facilities with service robots, we will clarify the findings for the research questions.

2 Prior Research

2.1 Healthcare Robots

2.1.1 Classification

To solve issues related to elder care facilities, various healthcare robots have been developed. Broekens et al. (2009) divided robots for the elderly into two categories: rehabilitation/assistive robotic devices (e.g. smart wheelchairs, artificial limbs, exoskeletons) and assistive social robots. The latter category is further divided into two types: the service type, used to support basic human activities such as eating, bathing, going to the toilet, and getting dressed; and the companion type, which is more like a pet (Broekens et al., 2009). Robinson et al. (2014) built on this categorisation and organised it not only according to the physical, cognitive and psychological issues of the elderly, but also according to the technological and robotic solutions available.

Although the effectiveness of healthcare robots in elder care facilities has been proved in meta-analyses (Abdi et al., 2018; Bemelmans et al., 2012; Kachouie et al., 2014; Pu et al., 2019), these analyses raise further issues. For example, the elderly feel resistance towards accepting new technologies (Smith, 2014), and it has been reported that caregivers as well as the elderly feel reluctant to accept a robot service (Broadbent et al., 2009; International Federation of Robotics, 2015). Čaić et al. (2018) point out that installing robots in elder care facilities generates not only co-value creation but also co-value destruction. Indeed, Ray et al. (2008) report unexpected results such as loss of privacy, disability stigma, fear of even greater dependence and reduced human contact.

2.1.2 Case Studies Outside Japan

To present examples of service robots, we use the classification of service robots from Broekens et al. (2009). Typical examples classified as rehabilitation devices include smart wheelchairs (Gomi & Griffith, 1998) and exoskeletons (Kazerooni, 2005). Typical examples of service-type assistive social robots include robots that provide assistance with transportation (Krishnan & Pugazhenthi, 2014), medication intake (Prakash et al., 2013), cognitive exercises (Carros et al., 2020; Fujie et al., 2009) and physical exercises (Fasola & Mataric, 2010). Among assistive social robots, typical examples of companion types include the bear-shaped Huggable (Stiehl et al., 2006), the dog-shaped Homie (Kriglstein & Wallner, 2005), and the cat-shaped ICat (van Breemen et al., 2005).

2.1.3 Case Studies in Japan

Typical examples of rehabilitation robots include Whill (2014) for personal mobility and HAL (Cyberdyne Inc., 2012) for exoskeletons. Among service-type social robots, typical examples are HOSPI (Panasonic, 2013) for medicine transportation, MySpoon (Ishii, 2003) for meal support, Lucia (Terashima & Saegusa, 2019) for patrolling and vital motion measurement, HSR (Toyota, 2016) for independent assistance, and Papelo (NEC, 2001) for human care. Among assistive social robots, typical examples of companion types are the dog-type AIBO (Sony, 2018), the seal-type Paro (National Institute of Advanced Industrial Science and Technology, 2004), the Qoobo (Yukai Engineering Inc., 2017) and LOVOT (Groove X Inc., 2018). In a meta-analysis of assistive social robots, Abdi et al. (2018) have shown that Paro is the most used robot.

2.1.4 Comparison

In the field of robot design, several theoretical proposals have been developed. For example, the concept of a 'weak robot' (Okada, 2016) has been proposed as a mutually constitutive relationship in which the user supports the robot but is also supported by the robot. Several robots based on this concept have been implemented, and it can be said that value co-creation is also established in these relationships. Mori et al. (2012) have also predicted that humans' emotional response to robots will become more favourable and sympathetic as robots become more human-like in their appearance and behaviour, but at some point the robots will suddenly provoke uncanny or strangely familiar feelings.

Haring et al. (2014) conducted a comparative study of perceptions and attitudes towards robots in Japan and Europe. The results of the study showed that although Japanese and Europeans do not differ in terms of positive attitudes and assumptions, the Japanese prefer more human-like robots compared to Europeans. In line with the uncanny valley theory, human-like robots, although not too similar to humans, would be preferred by the Japanese. Pepper and LOVOT, which are not too similar to humans but are human-like, are considered to be designs preferred by Japanese people, rather than android-like robots that more closely resemble humans.

2.2 Elderly Care Service with Service Robots

2.2.1 Case Studies Outside Japan

An overview of overseas examples of service robots for elder care shows that existing commercial telepresence robots are often used. Examples include Vita (InTouch, 2016), VGo (2013), Giraff (Camanio, 2016), Kompai (KOMPAÏ Robotics, 2019) and Beam Pro (Blue Ocean Robotics, 2016). These are mainly intended to support

communication with residents (Ozaki, 2014). Slibot also has cognitive training functions in addition to communication support (Law et al., 2019).

Several studies within the field of service with robots have made use of telepresence robots. Pereyda et al. (2019) proposed a smart home system, RAS, to support residents with memory impairment. Do et al. (2018) proposed a smart home care system, CPS RiSH, which consists of service robots, sensor networks, tablets, cloud servers and remote caregivers. In these systems, one operator directly controls one telepresence robot. Mast (2014) proposed a system for elder care facilities to control a telepresence robot indirectly in a 3D virtual space to move objects. In all of these cases, the correspondence between the operator and the robot was 1:1. Semwal et al. (2015), however, proposed a multi-agent platform, Tartarus, which can control multiple robots of different types.

2.2.2 Case Studies in Japan

Commercial telepresence robots are also being developed in Japan. For example, Model-T (Telexistence Inc., 2018) belongs in this category (Tachi, 2009), which focuses on realistic sensations including haptics in addition to sense of presence. Although there is no service for nursing care using Model-T, as a service to display products remotely and automatically in convenience stores—which requires a large number of man-hours and places a heavy burden on humans—is already available on a trial basis (Lewis, 2020).

There are several commercial cases that use existing telepresence robots: ugo is a service that aims to watch over elderly people at home and support their household chores (Mira Robotics Inc., 2018). In addition, iPresence LLC provides an online visitation service using telepresence robots for elder care facilities and hospitals (IPresence, 2021). Asratec and M-SOLUTIONS provide a service in which a human operates Pepper (SoftBank Corp., 2014) from a remote location to communicate and watch over an elder care facility (Asratec Corp, 2016). In all of these cases, the correspondence between the operator and the robot is 1:1.

2.2.3 Comparison

In the context of long-term care, services in other countries using commercial telepresence robots are limited to research cases, while in Japan there are already several commercial cases using commercial telepresence robots. As explained in the background, this may be due to the worsening labour shortage in long-term care in Japan compared to other countries.

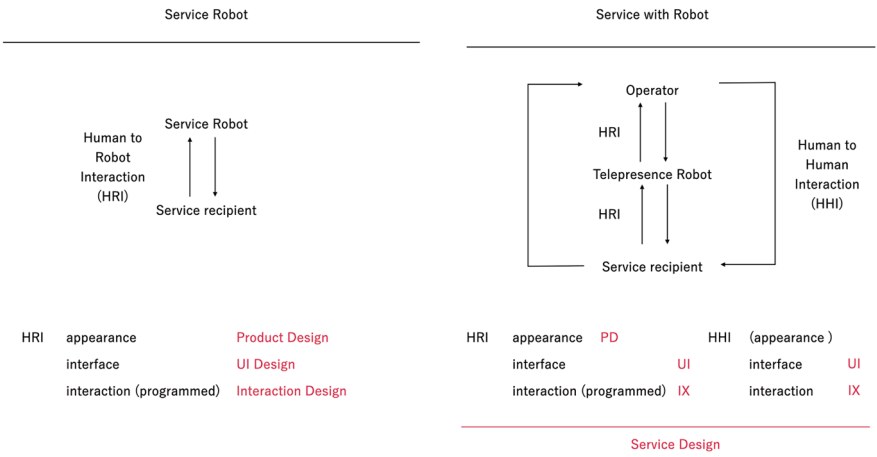


Fig. 11.1 A new design scope for robotic services

2.3 Service Design Framework Used to Develop Services with Robots

2.3.1 A New Design Scope for Services with Robots

When considering the design of services with robots, one must first consider the design of the service robots themselves. Interaction occurs between service robots and service beneficiaries, so it is necessary to consider the design of the human-to-robot interaction (HRI), as well as the product design for the robot's appearance and user interface (UI).

In the context of services with robots, telepresence robots, service beneficiaries and an actor called the operator are added, and the interaction between these three parties needs to be considered (Fig. 11.1). An HRI exists between the operator and the telepresence robot, and between the service beneficiary and the telepresence robot, but service robots also involve a human-to-human interaction (HHI) between the operator and the service beneficiaries, so it is necessary to design not only the HRI but also the HHI.

2.3.2 Case Studies Outside Japan

Research concerning UI design for the elderly has already accumulated. Dodd et al. (2017) conducted a meta-review of 17 papers on UI design for the elderly and organised the solutions into two categories: (1) interface and control design, and (2) input control. They found four solutions for each category: for interface and control design, these were text and object standard, intuitive control elements,

confirmations and errors, and context help; for input control, they were touch input, voice input, eye-gaze input, and TV interface.

Even at the theoretical level, where a clear methodology has not yet been established, it would be useful to incorporate service dominant logic (SDL) (Lusch & Vargo, 2014) into service design for the elderly based on how services can be integrated within organizations and society. Palthe (2014) identified regulative elements related to law, such as policies and work rules within the organization; normative elements related to morals and ethics, such as work norms and habits; and cultural-cognitive elements related to individual cognition, such as beliefs and values, as inhibiting factors in organizational change. Based on these factors, Vink (2019) clarifies that in elderly care facilities, there are invisible institutionalized social structures—i.e. regulative, normative, culturally-cognitive elements—behind visible physical enactments—i.e. elements that people can see, hear, and feel in the field—and that service design based on these elements is required.

2.3.3 Case Studies in Japan

In contexts other than long-term care, the perspective of improving the backstage efficiency to enhance the front of house experience is distinctive. For example, Kagaya (2021), a long-established Japanese inn famous for its hospitable service, uses robots to serve food. The robots carry food to the front of rooms, and the humans deliver the food directly to the customers. In the front stage of Lawson convenience stores, a variety of services are offered, such as home delivery, tickets, coffee and food, while in the back stage, a semi-automatic ordering system is used to manage inventory (Lawson, 2020). In the past, store clerks manually placed orders, but based on machine learning and seasonal factors, the system provides recommendations and the person in charge of ordering makes only minor adjustments.

In examining Japan‘s unique service design, it is necessary to explain a concept called *omotenashi*, which is different from hospitality. Hospitality is characterised by compassion for the receiver and high loyalty. *Omotenashi*, on the other hand, is deeply connected to the unique aesthetic sense of the tea ceremony called wabi-sabi (Yamauchi, 2020). In the tea ceremony, a master has a proposition, and guests are expected to understand and respond to it. The master does not treat the guests unilaterally, and the guests must respond to the master's understanding with words, manners and behaviours. This subject-object unity can be said to be the very essence of value co-creation in SDL. This kind of service based on *omotenashi* in its original sense can be found today only in some sushi restaurants, *ryotei* (traditional Japanese restaurants) and *ryokan* (traditional Japanese inns) (Yamauchi & Hiramoto, 2014).

2.3.4 Comparison

In addition to UI design for the elderly, there is ongoing research on frameworks for incorporating service dominant logic into service design for the elderly in Europe and the U.S. On the other hand, a service design framework unique to Japan doesn't exist currently. However, the traditional Japanese concept of *Omotenashi*, which strongly seeks the participation of service beneficiaries in value co-creation process, has a high affinity with SDL, and can be useful as an approach for developing a unique Japanese service framework in the future. For example, when considering rehabilitation services in a nursing home with a low care level, an approach that provides residents with knowledge about rehabilitation and involves them in the value co-creation of rehabilitation could be expected to improve the effectiveness of such services.

2.4 Design Implications

Based on the literature review, when considering service design for the elderly with a Japanese socio-cultural background, a service design based on HHI is required in addition to HRI. Product design for HRI has unique implications in Japan. Based on a comparison of Japanese and Westerners' attitudes towards robots, as well as the theory of the uncanny valley, human-like (but not too similar to human) robots are considered desirable among the Japanese. In the context of service with robots, it is therefore desirable to apply this approach to the design of telepresence robots.

We will address two elements in UI/IX HRI design for the elderly: (1) interface and control design; and (2) input control, based on the guidelines for UI design for the elderly by Dodd et al. (2017). For HHI, we will investigate service design after clarifying the in/visible institutions in elderly care facilities—i.e. regulative, normative and cultural-cognitive elements (Vink, 2019)—through field research. The in/visible institutions in elderly care facilities are strongly dependent on each culture or society, and we expect that elements unique to Japan can be derived from them.

3 Service Design Project for an Elder Care Facility

3.1 Project Overview

The goal of this project was to design services with robots for an intensive care home for the elderly, which is a public facility covered by long-term care insurance for elderly individuals who need long-term care at level three or above as defined by the Ministry of Health, Labour and Welfare in Japan (Foundation for Ageing and Health, 2018; Appendix 11.1).

The main players for this project included a team from TOPPAN Holdings Inc., which is one of the largest printing companies in Japan. The company's business is spread widely across three domains based on printing technologies: information communication, life and industry and electronics. Six staff members (Table 11.1) participated in this project; the first author was invited by the company to join the project as a consultant in charge of the service design. After TOPPAN drew up the documents for implementation, another company implemented the system as a system developer.

The main partner for this project was Magokoro Town Shizuoka, which is run by the Magokoro Social Welfare Corporation and is located in Shizuoka Prefecture. Magokoro Town Shizuoka is an intensive care home for the elderly with 100 beds. It is a multi-complex facility that has a short stay service in addition to long-term care.

3.2 Design Process

As a prerequisite in the service design, we adopted two approaches to solve the issues in elder care facilities. First, we installed not only multiple, low-price robots, but simultaneously a system to control them to solve the labour shortage. Second, we identified each job in an elder care facility; revealed the (in)visible regulative, normative and cultural-cognitive elements by which each actor is influenced; and assigned each job to humans or non-humans to solve existing issues—especially mistrust towards technology and robots felt by residents and caregivers—before installing systems for elder care facilities, including assistive social robots.

3.2.1 Stakeholder Interviews

First, the project members conducted an interview with the Head of the facility at Magokoro Town Shizuoka. The interview was conducted by the first author, ID 3 and 4 in Table 11.1. During the first interview, held on 28 September 2018, the

Table 11.1 Background of the project members

ID	Specialization and years of experience
1	Web engineer / 3 years; Tech survey / 3 years; Business planning / 1.5 years; Business development / 7 years
2	Engineer / 20 years
3	Process engineer in electronics / 15 years; Business development / 5 years
4	Sales promotion planning, marketing / 30 years
5	Semiconductor circuit engineer and business development / 14 years
6	System engineer / 10 years; System consultant and advisor / 10 years; Business designer / 10 years

interviewer asked questions about the general system guiding the special nursing home for the elderly, the facility itself and the staff structure at the facility.

After the first interview, we selected 5 interviewees from the actors, Counsellor, Nurse, Care manager, Caregiver, and Functional training instructor, introduced from the first interview. These interviews were also conducted by the same project members including the first author on 25 October and 8 November 2018. All interview data were transcribed for text analysis.

The project only conducted interviews with employees and not with the elderly because of the characteristics of the elderly in this facility, who all required care at level three or above. As the level of dementia among the elderly increased, so too did the difficulty in interviewing them.

As a result of these interviews, we created an actor map (Fig. 11.2) of the facility. The actor map aimed to reveal the actor-to-actor (A2A) networks that exist inside and outside this facility, as well as the services exchanged among actors. The creation of such map allows project members not only to understand the context of the field, but also allows them to visually grasp the candidates to replace human actors with service robots.

3.2.2 Text Analysis

During the text analysis (Kuckartz, 2014), the six team members carefully read the transcribed data from the interviews and wrote the coding targets on post-it notes. The first coding target was their current jobs. The team members then filled in the worksheets and identified 25 jobs for care workers, 13 jobs for nurses, six jobs for the care manager, eight jobs for the functional training instructor, seven jobs for the counsellor, five jobs for the doctor and four jobs for the local government.

The second coding target was institutions which regulate each actor, meaning the in/visible and regulative, normative and cultural-cognitive elements. As a result of the coding, some in/visible and regulative, normative and cultural-cognitive elements were extracted (Table 11.2). In particular, we found out that there was a norm in this facility that the jobs that the staff consider their main jobs should ultimately be handled by humans regardless of the existence of advanced software or robots. For example, the following are comments regarding the visible norm while patrolling inside the facility:

> *There is a staff member who is in charge of checking the machine, but they go out every three hours to check on the rooms directly instead of two hours.* (Nurse)

> *Yes, I always go to check the rooms. It's the nature of nursing staff, isn't it? Yes, it's the nature of care workers that they can't feel at ease unless they see it with their own eyes. Well, it's not that they are anxious or distrustful of machines, but it's a habit.* (Caregiver)

It was also found that a similar invisible norm existed behind the visible norm of bathing assistance:

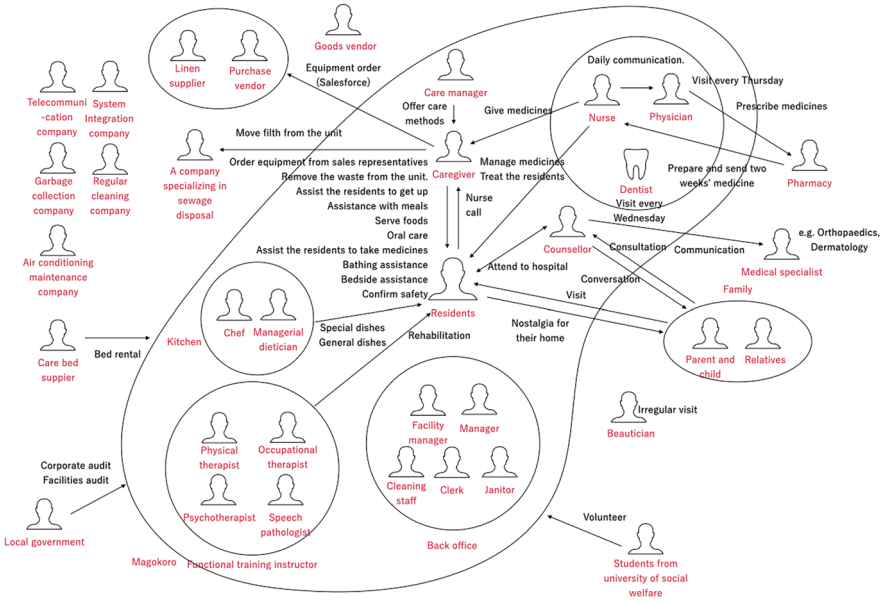


Fig. 11.2 Example of a project member's actor map

> *In general, intensive care homes for the elderly usually have mechanical baths that allow residents on stretchers or wheelchairs to take a bath. However, at our facility, we don't allow that kind of thing. We help the residents to take a bath without such machines on the premise that they will take a bath personally*. (Head of the facility)

Then, from the transcribed data, actor worksheets (Fig. 11.3) were described to summarize detailed information about each actor. The actor worksheet consists of the actor's daily activities, resources needed for the actor's activities, pain, gain, and institutions related to the actor. In this project, actor worksheets were created for a caregiver, a nurse, a care manager, a functional training instructor and a counsellor.

3.2.3 Ideation

During the ideation phase, the project members again carefully read the interview data and extracted ideas onto post-its. Afterwards, we organised these ideas as new jobs to be done (JTBD) that the service robot as an actor should have done. These new JTBDs are jobs that do not currently exist but are expected to be realised through human-human interaction (HHI) through service robots. Finally, 68 new jobs were proposed.

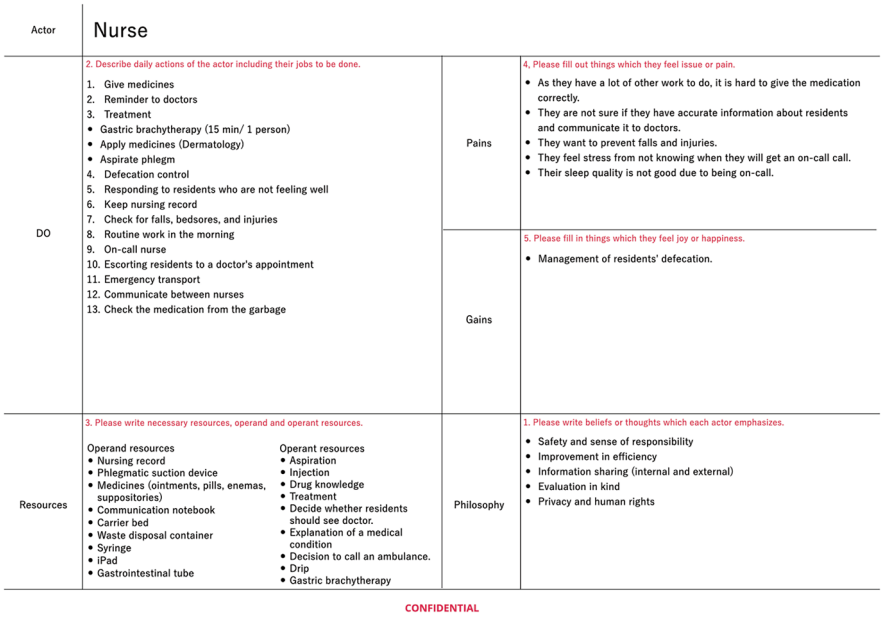
Table 11.2 Examples of the in/visible and regulative, normative and cultural-cognitive elements in this facility

Elements	Bisible	Invisible
Regulative elements	Nursing care plan, nursing care record, monitoring chart, assessment chart	Long-Term Care Insurance Act Act on Social Welfare for the Elderly
	On-call nurse during a night One staff member patrolling 21 residents at night Sharing of nursing care records via SalesForce	Work rules
Normative elements	Not a machine bath, but a bath supported by caregivers	Supporting their life as human being
	Encourage residents move freely	Supporting their life as human being
	Patrol by direct visual inspection	Need to see with my own eyes to feel safe Anxiety and suspicion about machines
	Send letters to residents' families every month	Emphasis on direct communication
	Use of contact notes and Text app (e.g. LINE)	Differences in IT literacy among staff
Cultural-cognitive elements	Mention important things in the Salesforce as well as remind them in the contact notes (Nurse)	Differences in IT literacy among staff
	Deliver care plans by hand to families (Care manager)	Emphasis on direct visits
	Visit their home to meet their family before moving in the facility (Counsellor)	It is easier to build a trustful relationship if you show your face.

3.2.4 Concept Development and Selection

During the concept development phase, each member filled out the concept worksheet for each service concept. The concept worksheet consists of a service overview, current JTBD (the job currently assigned to each actor), new JTBD (the new job to be assigned to the service robot proposed in the ideation step), institutions related to the actors, relevant technical specifications of the current service robot, and technical specifications which the current service robot lacks. We used the institutions of each actor described in the actor worksheet as a decision-making basis when considering which jobs should be assigned to human actors and which jobs should be assigned to non-human actors, including service robots. Finally, 15 concepts were developed.

After the workshop, the project members designed detailed customer experiences for 7 out of 15 concepts: a medication delivery service, a tour of the facility for the resident's family, a shopping service, a rehabilitation service, a monitoring



Actor: Nurse

DO

2. Describe daily actions of the actor including their jobs to be done.

1. Give medicines
2. Reminder to doctors
3. Treatment
- Gastric brachytherapy (15 min/ 1 person)
- Apply medicines (Dermatology)
- Aspirate phlegm

4. Defection control
5. Responding to residents who are not feeling well
6. Keep nursing record
7. Check for falls, bedsores, and injuries
8. Routine work in the morning
9. On-call nurse
10. Escorting residents to a doctor's appointment
11. Emergency transport
12. Communicate between nurses
13. Check the medication from the garbage

Pains

4. Please fill out things which they feel issue or pain.

- As they have a lot of other work to do, it is hard to give the medication correctly.
- They are not sure if they have accurate information about residents and communicate it to doctors.
- They want to prevent falls and injuries.
- They feel stress from not knowing when they will get an on-call call.
- Their sleep quality is not good due to being on-call.

Gains

5. Please fill in things which they feel joy or happiness.

- Management of residents' defecation.

Resources

3. Please write necessary resources, operand and operant resources.

Operand resources
- Nursing record
- Phlegmatic suction device
- Medicines (ointments, pills, enemas, suppositories)
- Communication notebook
- Carrier bed
- Waste disposal container
- Syringe
- iPad
- Gastrointestinal tube

Operant resources
- Aspiration
- Injection
- Drug knowledge
- Treatment
- Decide whether residents should see doctor.
- Explanation of a medical condition
- Decision to call an ambulance.
- Drip
- Gastric brachytherapy

Philosophy

1. Please write beliefs or thoughts which each actor emphasizes.

- Safety and sense of responsibility
- Improvement in efficiency
- Information sharing (internal and external)
- Evaluation in kind
- Privacy and human rights

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Fig. 11.3 Example of an actor sheet: Nurse

service, environmental sensing and nursing care assistance service. To choose the seven concepts, the project members used several parameters, such as similarity among concepts, feasibility for implementation and motivation of the members.

The project members then visited Magokoro Town Shizuoka again and asked for opinions about the validity of the seven services concepts. They received positive feedback on every service concept. Out of these seven service concepts, we decided to implement a medication delivery service, based on the parameters of practicality and business feasibility.

3.3 Medication Delivery Service with Robots

The medication delivery service can deliver medications to residents at elder care facilities and check whether they finish taking these medications by controlling telepresence robots from a virtual reality (VR) environment (Fig. 11.4). From the viewpoint of HHI, this service aims to eliminate distrust of technology and robots by assigning humans to setting up medication, assisting with taking medication, and checking after taking medication, while robots are in charge of transporting the medication.

The existing process of mediation has 4 steps; a doctor at a hospital sends prescriptions to a pharmacy, a pharmacist packs medications based on the

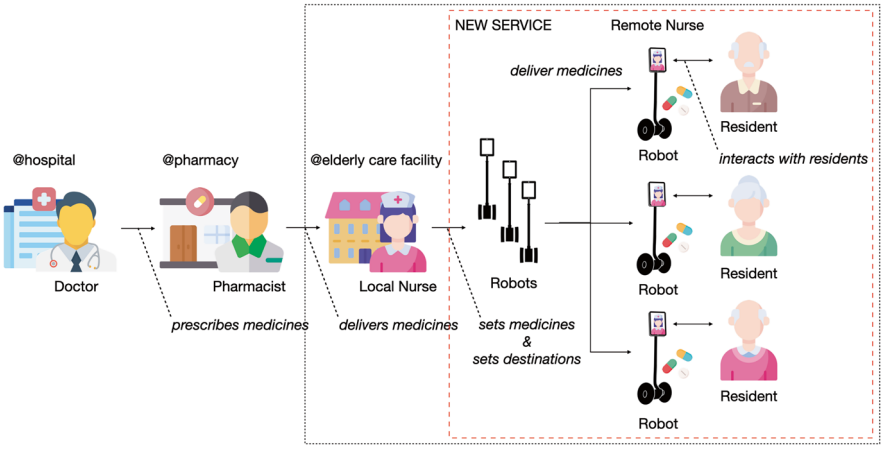

Fig. 11.4 Service concept for medication delivery using telepresence robots

prescriptions, and delivers the medication packs to a local nurse in the elderly care facility, after the nurses receive them, they deliver the packs to each resident. This requires a large amount of labour, as this facility receives three deliveries per day for 104 residents:

> *The medicines for waking up are in the morning batch of medicines. Also, there are medicines for the time of day, such as at 6:00 a.m., 10:00 a.m., 2:00 p.m., etc., which are divided into boxes, so you have to concentrate on them to a certain extent, otherwise you will make mistakes. We do that for 104 people.* (Nurse)

As you can see in the comment below, staff members need to check whether the residents take their medication. This checking job is a visible and normative element, and in this facility, it is considered a job that should be performed by humans.

> *Generally, each floor has its own assigned staff for the day. For example, if you are on the third floor, there are four units, and you first check on the condition of the people on the floor in the morning, and then you put medicines in a medicine box. And then we check on them afterwards to see if they've taken the medicine properly.* (Head of the facility)

We designed the medication delivery service based on these comments and the norm in this facility that the jobs that the staff consider their main jobs should ultimately be handled by humans, regardless of the existence of advanced software or robots. Firstly, a nurse gives several packs of medications to each robot and sets each destination for the robots in the VR environment. Then, each robot automatically moves and delivers medications to each resident. Finally, the nurse checks whether each resident has taken his or her medication using video chat communication. This service makes it possible for human actors to avoid the time needed to move around to each room and to allocate this time for other, more important jobs.

3.4 Implementation

3.4.1 CPS for Monitoring and Controlling Multiple Telepresence Robots

We build cyber-physical systems (CPS) to control and monitor multiple telepresence robots. The CPS is a computer system that is able to control and monitor physical devices using VR software. CPS are transformative technologies for managing interconnected systems linking physical assets and computational capabilities (Baheti & Gill, 2011), and such systems emphasise the integration of physical and computational elements (Lee, 2008; Rajkumar, 2007). Our CPS system consists of three units: a VR simulator, a simultaneous localisation and mapping (SLAM) server, and robots (Fig. 11.5).

3.4.2 VR Simulator

We developed a VR simulator to control and monitor several telepresence robots. Virtual space is useful for controlling and monitoring robots and IoT devices because it does not depend on time and space. This makes it possible to preserve and see huge amounts of data from the past, present and simulated future, as well as to control distant devices through the internet.

Our VR simulator provides non-engineers with powerful and easy to control robots. The graphical user interface (GUI) is designed to be simple and approachable. The system has two windows: the monitoring window, shown in Fig. 11.6, and the control window, shown in Fig. 11.7. The VR simulator was developed with Unity3D. We built a virtual environment using CAD software (Autodesk 3ds Max) from a blueprint of the building.

On the right side of the monitoring window, it is possible to monitor all of the robots and the behavior of the environment in cyber space. The left side of the monitoring window shows the captured images from all the robots in real time. A control window for each robot can be launched by clicking on a captured image, as shown in Fig. 11.7. In the left sub-window, it is possible to operate a robot manually and talk with a conversation partner through a telepresence system. The right sub-window is used for path planning. Destinations can be set for each robot in this window, and the VR simulator can then calculate the path automatically.

3.4.3 Telepresence Robot

In this project, we employed the Ohmni Supercam, produced by OhmniLabs, as shown in Fig. 11.8. This robot is customisable and has a relatively low price, so it was possible to install multiple robots and attach additional devices to each robot for the robot service. A LiDAR sensor was also attached to the robot for collision detection, and SLAM; the LiDAR sensor is shown in the close-up view in Fig. 11.8.

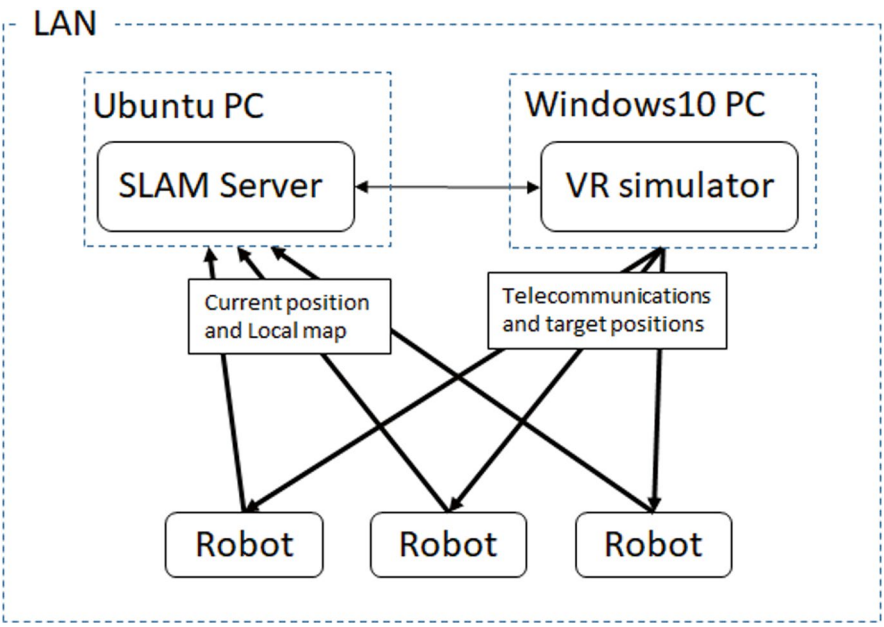

Fig. 11.5 System overview

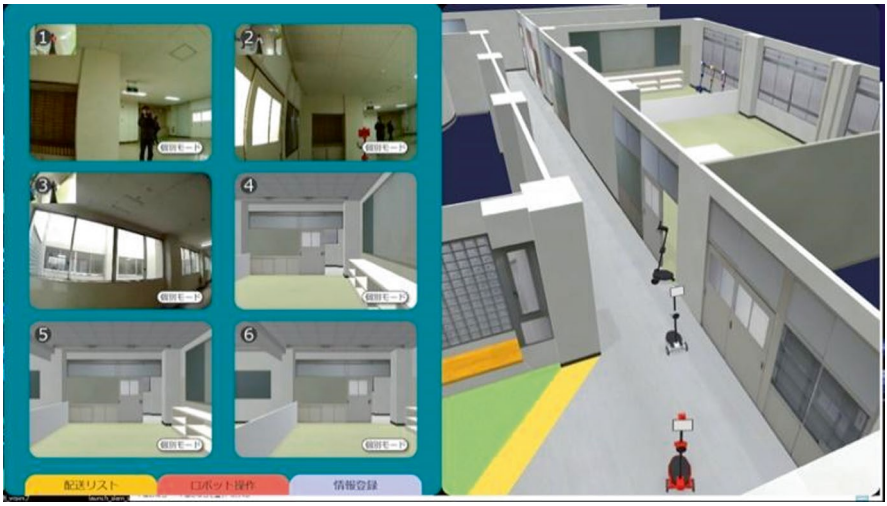

Fig. 11.6 Monitoring window

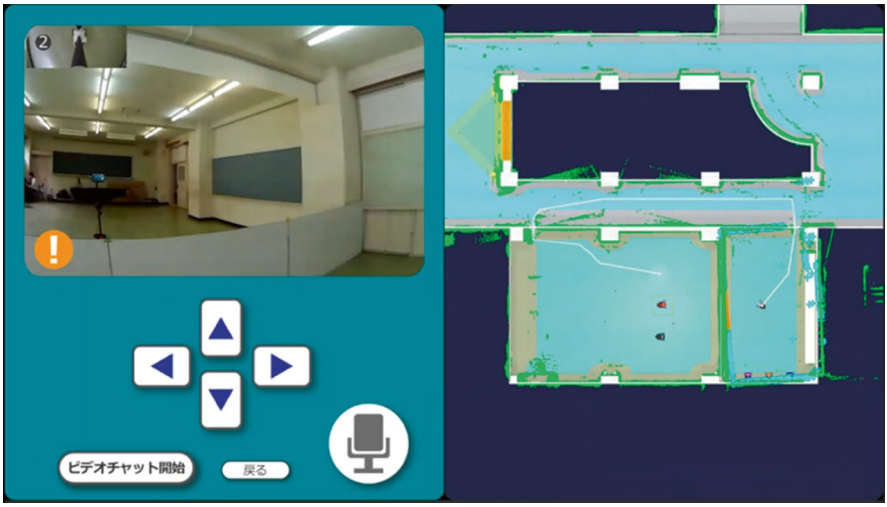

Fig. 11.7 Individual robot control window

Fig. 11.8 Ohmni Supercam with LiDAR sensor

The robot was designed using an element that does not look too much like a human, but still looks a bit human-like. A simple illustration of a face is shown on the display when the robot is moving, and a video image is shown only during video calls. The telepresence robot consists of a drive unit and a display unit. In the case of a typical telepresence robot, the operator's face is always shown on the display, even when the robot is moving, but the operator does not know that people around the robot are seeing his or her face (so the expression may not be appropriate), and a telepresence robot with a constant image of the operator's face may appear uncanny.

In terms of UI/IX design, the resident side currently only communicates through video calls with the operator, and no action is required for input in the design. For the text and object standard in the interface and control design, large, friendly fonts and as few control buttons as possible were used because many operators in elder care facilities are not familiar with computers. The number of operation buttons was also minimised. The screen structure was also divided into a monitoring screen and an individual operation screen to minimise the number of screen transitions. A tabbed screen structure was used for special operations (such as route setting); action visuals are frequently used to avoid conflicts with necessary screens.

For the intuitive control elements in the interface and control design, the main operations by the operator are route setting, video call and manual operation. Route setting was designed so that the operation for one robot can be completed within five steps. The video call and manual operation were combined within the individual robot operation screen, thus reducing the button configuration.

The actions in the system governing confirmations and errors in the interface and control design are explicitly indicated to the operator, and a confirmation dialogue is always issued to show the progress of the task to prevent the robot from moving unintentionally. An arrival dialogue box is displayed for each individual robot so that the operator can move on to the video call when the robot reaches the goal of the set route.

For the context help in the interface and control design, if the operator is unable to proceed, resources are provided to help them solve the problem on their own. When the telepresence robot cannot reach the goal of the set path due to a SLAM failure caused by LiDAR noise, a dialogue box is displayed to encourage the operator to return to manual operation. For input control, the resident side only communicates through video calls with the operator; no action for input is required.

3.5 Concept Validation

3.5.1 Method

We validated the service concept and conducted face-to-face interviews on 19 April and 28 May 2019 with the same care manager, nurse, functional training instructor and head of the facility whom we asked to coordinate the employee interviews during the field research.

3.5.2 Result

We concluded that the medication delivery service with robots may be difficult to introduce into intensive care homes for the elderly whose long-term care level is high but has potential for elder care facilities or hospitals whose long-term care level is low. The current service design included delivering medications and checking that residents took their medications; however, as a result of the interviews, we learned that many residents need assistance opening and/or taking medicines. The current telepresence robots do not have any arms, so it would be difficult to create additional functions for this kind of assistance without changing the specification of the robots. The designed system would therefore be most suitable for residents in the elder care facility who can open and/or take medicines by themselves.

> *Because the residents' ability to receive medicine from the robot depends on the residents' cognitive level, we feel that issues other than the performance of the robot may arise. It is difficult in intensive care homes for the elderly, but it is highly possible in other facilities where the nursing care level of the residents is low.* (Functional training instructor)

> *It's good that medication management can be centralized. There are many elderly people who are not able to take the medicines out of the package, so we need to devise a way to set out the medicines.* (Head of the facility)

> *Most of the elderly people here can't take the medicines by themselves even if telepresence robots take them to each room.* (Head of the facility)

In addition, when we presented this service to them, they suggested ideas related to meal management. While meal assistance itself is the main task of the caregivers, it was found that the service robots are expected to support in peripheral jobs such as serving and clearing dishes and checking intake quantities and leftovers.

> *It would be great if the robot could automatically know the daily intake of main meals, side dishes, water, etc., to reduce the hassle.* (Care manager)

> *Is it possible to statistically check for leftover food? Also, can they analyze likes and dislikes? For example, if we know that a patient will not eat cabbage but will eat broccoli, we can reflect this in the menu. Although there are not many cases where food is forbidden due to disease, it is common for residents not to eat due to likes and dislikes, so this could be a countermeasure.* (Nurse)

Furthermore, it was suggested that the service should not be a stand-alone service but should have multiple functions or be linked to other services. It was found that the service is expected to support the primary jobs of the caregiver, not just deliver medication.

> *There are many products that are very convenient at the moment, but when they are connected, they are not usable. When you actually try to use them, there is no connection before and after, so they end up being unusable. I think it's a little scary that the medication distribution is fine but it takes a lot of time and effort before and after, or that its presence is a huge hindrance.* (Head of the facility)

I like the idea of a robot that can follow up with the caregivers who are providing services to the residents. It is desirable to have a robot that can make the most of its ability to record and gather information—for example, a robot that can quickly send out a handbook, or a list of tasks that need to be done today, so that when the people working in the field come in in the morning, they can see it all at once, and can move forward with it. (Functional training instructor)

4 Discussion

4.1 Issues Involved in Introducing Service Robots

Our project adopted two approaches to solve the issues involved when introducing service robots into elder care facilities. Firstly, we not only introduced several low-cost telepresence robots, but also a system that can control them simultaneously to solve the labour shortage in such facilities. Secondly, we identified the jobs in the facility, we examined what could be assigned to humans and what could be assigned to non-humans—i.e. robots—based on in/visible, regulative, normative and cultural-cognitive elements to address the existing issues of implementing such systems. More specifically, we examined the distrust of technology and robots felt by caregivers.

There is a very wide range of conventional telepresence robots, from relatively inexpensive robots such as Double (Double Robotics Inc., 2015), which costs about $3000, to expensive robots such as Ava (Ava Robotics Inc., 2020), which costs over $70,000, but all of them are operated by operators in a one-to-one relationship. In contrast, in the system designed here, the operator can semi-automatically control multiple inexpensive telepresence robots using a VR system, enabling 1:N operation. This would enable the realisation of multiple tasks simultaneously and help to solve labour shortages in elder care facilities. However, not all jobs can be replaced by service robots due to both technical and financial issues, as well as psychological issues (distrust) on the part of caregivers and residents.

The first (technical) issue for such systems is that it is still difficult to develop service robots with functions similar to those of humans. In recent years, robotic technology has seen breakthroughs in machine learning and neural networks, but it will still take more time to achieve human-level functionality.

The second (financial) issue is related to the first issue. Even if the technology develops and achieves near human-level functioning, it will be very expensive and it will take some time before the price decreases to the point where it can be widely used in elder care facilities. In short, there is still a long time before service robots with near human-level functionality can be employed at a cost lower than employing humans.

Although it is difficult to solve these two problems from the perspective of HRI, the possibility of introducing robots will increase by considering designing services from the perspective of HHI. In other words, humans operate multiple inexpensive

robots rather than assigning everything to robots, and operators rather than robots interact with residents. Such an approach is also related to the third issue.

The third (psychological) issue is the distrust of technology and robots. To mitigate this distrust, the authors adopted the approach of identifying the jobs in the facility, revealing the in/visible, regulative, normative and cultural-cognitive elements, and then assigning jobs to human or robots. As shown in Sect. 3.2.2, we assigned the job of medication assistance and confirmation to humans and the job of medication delivery to multiple robots, based on the norm that humans should ultimately be in charge of the jobs that the staff consider their primary tasks regardless of the existence of advanced software or robots. Even if robots with the same functions as humans and at a lower cost are introduced, it will take longer to overcome this psychological issue. It will be necessary for some time to identify the necessary jobs in each field and assign them to robots and humans appropriately based on institutional norms.

4.2 Changes in the Caregiver Experience

Rather than assigning all jobs to robots, the care experience of caregivers can be modified by assigning jobs to robots that do not create psychological problems from an institutional perspective. The most important change is the opportunity to focus on tasks that are important to the caregivers. Relevant tasks here are those that involve direct contact with the residents and providing services to them, such as meal assistance, medication assistance, toileting assistance, and other tasks that require direct communication. Backstage jobs that do not involve direct contact with the residents—carrying meals, medication, laundry, and so on—can be fulfilled not by a single caregiver, but by an external operator in charge of multiple inexpensive robots from the perspective of HHI. The external operator does not have to be one person, nor do they have to be in the same country: N-to-N relationships allow for discrete responses.

At the same time, it is necessary to rethink caregivers' important tasks from the perspective of regulative, normative and cultural-cognitive elements. As a preliminary step to introducing service robots and designing what the robots will be responsible for, it is necessary to share the rules, norms and even personal preferences in the care facility with the team and review the in/visible institutions in each facility. For example, in the case of jobs such as bathing assistance, as shown in Sect. 3.2.2, Japanese law requires that a resident takes a bath twice a week. Some elder care facilities use machines for bathing, while others provide individual bathing with human assistance. This is a matter based on the norm of each facility.

4.3 Potential for Work Transformation Beyond Digitization

By assigning specific jobs to robots, we can expect the possibility of business transformation. If systems or robots simply replace jobs, it is merely digitization, but if robots can provide more than mere replacement value, business transformation will occur. In the case of the medication delivery service, by designing a system that allows one operator to control multiple robots across time and space, we were able to propose a value that goes beyond replacing a single caregiver with a single robot.

In this project, in the same context of long-term care, six service concepts other than medication delivery were proposed, including a tour of the facility for the resident's family, a shopping service, a rehabilitation service, a monitoring service, environmental sensing and nursing care assistance service. These are all proposals that were evaluated as acceptable. The authors found that the approach was effective in revealing visible and invisible regulative, normative and cultural-cognitive elements through interviews with human actors, which were then embedded into the design process. Therefore, these proposals would yield value beyond mere digitization.

As shown in Sect. 3.5, when we interviewed the facility's employees again to validate the concept of the service of medication delivery, they mentioned services related to meal management and expectations of a service robot that links multiple service functions, not just a single function service. These were ideas that were not provided during the initial interviews and were shared only after the project members presented the medicine delivery service. As there are cases where the actors provide us with ideas for services that are more rooted in the field in the concept verification stage, it is thought that the possibility of business transformation will be increased by having actors involved in each phase of the design process, actors who are responsible for value co-creation, not just as providers of data such as pain and need in the early phase of the design process.

Although we have conducted service design in an elder care facility, business transformation can be achieved through similar approaches in contexts other than long-term care. Current examples of research using commercial telepresence robots include conferences (Neustaedter et al., 2016; Rae & Neustaedter, 2017), shopping (Yang et al., 2018), education (Newhart & Olson, 2017), home care (Aaltonen et al., 2017) and long-distance relationships (Yang et al., 2017). Rather than replacing all jobs in these contexts, the potential for deploying them will be increased by assigning jobs to technology and robots after investigating the regulative, normative and cultural-cognitive elements. If such services can provide more value than mere replacement, the potential for business transformation through service robots will be greatly increased.

5 Conclusion

In this paper, we implemented a prototype of a medication delivery service with telepresence robots based on HHI through fieldwork in an elder care facility. The use of service robots has been attracting attention to solve the shortage of labour force for the growing number of elderly people, but there is still resistance to technology and robots among both residents and caregivers. To solve these issues, we not only introduced several low-cost telepresence robots, but also introduced a system that can control them simultaneously. After identifying the jobs in the facility, we assigned specific jobs to humans and robots after revealing the in/visible, regulative, normative and cultural-cognitive elements of the facility. Based on these design processes, we discussed what needs to be considered when designing service robots in the context of elderly care in Japan and what's the role of service design for that.

The approach of this study has two limitations. The first is the cost of stakeholder interviews. Normally, it is desirable to conduct more than three interviews per a single job category in order to identify in/visible regulative, normative and cultural-cognitive elements. However, due to the budget and time constraints of the project, only one person per a job was interviewed in this project, so it was difficult to verify whether or not the extracted in/visible regulative, normative and cultural-cognitive elements were appropriate for the organization. The second is that there is a lack of data on the resident side. We were not able to conduct interviews with the residents of this facility because of their care level is high, which means that their dementia level is advanced and it's hard to communicate with them. In the future, we will incorporate some method of obtaining data from the residents with high care level into the design process in order to create a more satisfying experience for them.

While the ratio of elderly people in Asia as a whole reached 7% in 2010 and is expected to reach 14% by 2035, Japan's ratio had already reached 26% in 2015. Japan is one of the first countries in the world to face an ageing society alongside a low birth rate, and it has much experience in this field. Japan should therefore strengthen cooperation with Asia and other countries to deal with an ageing society and a strained social security system. In particular, medical care, long-term care and health-related industries are expected to be in high demand in Asian countries faced with ageing societies, and we hope that the lessons learned in this chapter will be useful in ameliorating these societal stresses.

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Appendix

Appendix 11.1 Long-term care by level and condition (Foundation for Ageing and Health, 2018)

Long-term care level 3	Long-term care level 4	Long-term care level 5
A person who is unable to stand up and walk on his/her own, but needs a lot of assistance with using the toilet and bathing. The person may need to use a wheelchair on a daily basis. In terms of cognitive symptoms, behavioural symptoms (BPSD) may sometimes appear	A person who is unable to perform most of his/her daily activities independently and requires full nursing care. This includes bedridden conditions. A person's motivation declines, the amount of time spent asleep becomes longer, and there is no longer any active movement	A person who is unable to perform daily activities independently and requires full nursing care. If the person is able to communicate, he or she may require level 4 long-term care; if not, he or she may require level 5 long-term care. This includes difficulty communicating due to cognitive symptoms

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Chapter 12
Designing a Graduation Ceremony of Life: A Reflection Journey Towards a Good Life in Old Age

Chen-Fu Yang and Lisa Lin Halskov

Abstract Most humans experience fear of death. When people realize their last moment is approaching, they might start to review their life. If their life review is full of passiveness and regrets, death becomes unbearable and unacceptable, especially there is no time to change anything about it. On the other hand, if the life review and related conversation are carried out when people are still healthy and able to take actions, death and anxiety can be driving forces in life. However, death is not a very easy topic to talk or think about in many countries or culture, and we do not want to talk about death until the last minute. Consequently, it might need an effective and comfortable way to facilitate the conversation and actions. Today, service design that emphasizes holistic, multi-disciplinary, and integrative characteristics has become a useful methodology for interactional and experience journey creation. In addition, LEGO® Serious Play® is a tool which does not only support the hand-mind connection, but enable the users to define, express, and visualize the tacit ideas and perspectives as well. Through participatory action research with design workshops, this study first explored four main fears of death. Secondly, we made three crucial reflections as design insights. Finally, this study provides a conceptual service design model for the practical application of old life review and planning, which could enhance the imagination and conversation for death.

Keywords Life review · Old age design · Service design · LEGO serious play

C.-F. Yang (✉)
5% Design Action, Taipei City, Taiwan
e-mail: chenfu0510@5designaction.com

L. L. Halskov
Empathic Design, Kgs, Lyngby, Denmark
e-mail: lisa@empathicdesign.dk

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1 Introduction

"Death" is not a common topic you simply bring up on any occasion. In general, elderly people prefer not to touch on death issues because death is still associated with something negative. In Taiwan, this is also related to different traditional beliefs. For example, a person who suffers from a loss of a family member should not attend any celebrations like a wedding or a party for a newborn baby, because this person might transfer bad luck to the host family. Another example is traditional funeral ceremonies which represent extreme immobility and grief. In many cases, the family needs to hire "professional performers" to cry throughout the entire ceremony to show the grief and longing for the deceased. Children are often told not to look at another family's funeral ceremony; it might bring a nightmare.

According to psychiatrist Irvin Yalom (2017): all humans experience fear of death. Moreover, he also points to the need of acknowledging one's own death and learning to live with the fear of dying. Contrary to what many people might think, Yalom argues that death and anxiety can be driving forces in life if they are recognized and used in the right way. Thus, acknowledging our mortality and the anxiety that naturally follows can be highly rewarding and doesn't need to take away hope from our lives. In a similar line of thought, Robert Neil Butler, an American gerontologist, declares that a proactive engagement about death will have a positive impact on daily lives during old age and improve overall life quality of the elderly people and their families (Achenbaum, 2013). However, this can be a vulnerable and complicated process because family patterns are created throughout a lifetime, and they are not easily changed. Therefore, reflection and interaction with each other is vital to achieve serenity among family members and create the precondition for a good and loving graduation ceremony of life (a farewell)—the sooner the better.

Death is not a very easy topic to talk about, but through good design we could open another window. Today, service design that emphasizes holistic, multidisciplinary, and integrative characteristics has become a useful methodology for interactional and experience journey creation (Meroni & Sangiorgi, 2011). In order to integrate multiple stakeholders and resources, service design provides practical design activities and facilitation process to effectively carry out co-creation (Tassi, 2009). In addition, LEGO® Serious Play® (LSP) is a tool which does not only support the hand-mind connection, but enable the users to define, express, and visualize the tacit ideas and perspectives as well.

Therefore, through participatory action research in workshops with the emerging 5% Design Action social innovation platform in Taiwan (involving more than 10,000 designers and professional volunteers and 450 organizations), this study first explored four main fears of death: (1) to fear of being severely ill; (2) to worry about loved ones; (3) to enter the unknown; (4) to die alone. Secondly, we made three crucial reflections from the study as design insights: (1) new transformation of eastern filial piety; (2) family companionship and support; (3) satisfaction after retirement impacts the attitude towards death. Finally, this study provides a conceptual model for the practical application of old life review and planning, which could

enhance the imagination and conversation for death (we also called Designing a Graduation Ceremony of Life). We hoped this study could help us understand how to systematically apply service design methodology and useful tools in old age planning or life design programs in the future.

2 Attitude Towards Death

Most of us have left the "death" to professionals or experts, but we should take it back and have control over our lives when we are still healthy and fresh. What happens when we avoid talking about death? Consider the facts below from different recent surveys: At least 10–20 percent of the family members who suffer the loss of relatives will remain in deep grievance for many years (Chan et al., 2007). Continuing grief is causing more medical and public health issues, including increase of suicide tendency (The Centre on Behavioral Health of the University of Hong Kong, 2009). According to the survey of California HealthCare Foundation (2012), 80% of people say that if seriously ill, they would want to talk to their doctor about wishes for medical treatment toward the end of their life. 7% report having had this conversation with their doctor 82% of people say it's important to put their wishes in writing, but only 23% have actually done it.

Every family has different ways of handling both difficult and joyful moments in life. Still, in most families a state of serenity and calmness for both the aging person and the relatives is crucial. To reach this state of mind it can be of great benefit to reflect on one's life and relationships. As a part of this reflection the undisputable fact that death will occur someday take up space in many elderly people minds. For some people it is on an unconscious and maybe denying level while others reflect on it more openly. For example, a 72-year-old woman from this research says that a healthy fear of death can remind us to make the most of our time and not to take our relationships for granted.

People may not talk about death, but this doesn't necessarily mean that they are not thinking about it and experiencing different emotions in this regard. Some of the participants in this study said that death issues are on their minds, and it may haunt them consistently. According to The Life Review Process by Robert Neil Butler (1963), a proactive engagement about death will have a positive impact on daily lives during old age and improve overall life quality of the elderly people and their families. In this way the realization of death can be healthy. Being aware of the preciousness of life most people tend to be more careful and take appropriate precautions, for example, wearing seat belts and bike helmets while moving around in traffic. Furthermore, healthy fear of death also reminds us to make the most of our time and not to take our relationships for granted. It can push us to work hard to leave a legacy and to stay current with those we love. Therefore, some of the elderly people expressed a need to do things that makes them feel positive. They try to be as busy as possible, so they have no time to think about the difficult things. If physical condition allows, active aging is a common attitude after retirement.

3 Methodology

3.1 Action Research and 5% Design Action

Because there are few mature theoretical frameworks or clear relationships between the variables, this research adopted participatory action research as its main methodology. Action research is designed to shorten the gap between theory and practice through the combination of "action" and "research" (Elliott, 1991). The practitioners carried out research according to the actual problems which they encountered in real work situations; they formulated possible approaches to solve these problems, and then they put these approaches into effect, and carried out evaluations, obtained feedback, and made modifications. In addition, action research improves the rationality and feasibility of the research results in practice and facilitates profound discussion and understanding through cooperation between key stakeholders and practitioners (Altrichter et al., 1993; Kemmis & McTaggart, 1988; Mills, 2000).

In accordance with the idea that "social innovation requires not only design thinking, but also actual design actions", the author led the team Dreamvok to construct the "5% Design Action Social Innovation Platform" in the spring of 2012 (Fig. 12.1). The 5% Design Action set up its base in Taiwan and recruited cross-industry designers and other professionals to use some of their spare time (5%) to contribute their expertise and the design abilities which they had originally developed in corporate innovation, to address key social issues and challenges. With "service design" as its core focus, value co-creation was carried out with relevant NGOs/NPOs, and organizations in the public sector and private sectors (more than 350 organizations) involved in social issues with the aim of seeking possible innovation solutions together. Since its establishment, 5% Design Action has recruited more than 10,000 designers and professional volunteers who have devoted themselves to social innovation in collaboration with multi-disciplinary stakeholders. The social

Fig. 12.1 5% Design Action Social Design Platform in Taiwan

issues involved came from four parts of society: education, health, the environment, and the economy.

Because there is a lack of practical cases for reference on how service design is used in life review and old age design, this research could only establish preliminary assumptions through the hands-on experience from 5% Design Action. Modifications of the assumptions and new action plans were made after every case was completed. This research invested in a design project—IN PEACE launched in 2016 for World Design Capital at Taipei, which was collaborated with Empathic Design. In addition, from 2017 to 2021 5% Design Action continued promoting the program—Death Cafe Workshop with Hondao Senior Citizen's Welfare Foundation. The data collection and analysis included: (1) documentation: internal meeting records, review meeting records, and research reports; (2) participatory observation: the data content related to direct observations and records; (3) physical artifacts: the prototype built through LSP and photos of the designs.

3.2 Workshop Design

In this research, we designed workshops by using service design methodology and LSP method (Fig. 12.2). Why the bricks? Firstly, the brick supports the hand-mind connection. The workshops enable the participants to overcome barriers of not being able to define, express and share tacit insights and perspectives from their

Fig. 12.2 The participants were facilitated with bricks in the workshop

lives. Secondly, the brick stimulates a shared language. The workshops enable the participants to gain better understanding of each other's opinions and thoughts, because they are presented in a way that includes both how the participants rationalize, and express personal experiences behind this conferral of significance. Since talking about death on a personal or cultural level is a taboo, participants will be encouraged to play with the bricks and build models creatively that resembles or symbolizes answers to specific questions.

Furthermore, through facilitation with bricks in workshop (three hours each workshop), the participants were asked pre-designed questions in related to the topic. There are four main phases in the workshop, including (1) my life until now; (2) death & clarification; (3) reach out; (4) my life from here and forward (Fig. 12.3). The participants answered these questions by building symbolic and metaphorical models of their insights in bricks and present these to each other. An essential part of the LSP framework is the non-judge-mental, free-thinking and somehow playful interaction between the participants. In addition, the workshop starts with skill building, where the bricks and the democratic process of building and presenting, as well as some of the key features like the hand-mind connection and the use of symbolic and metaphoric models.

In the workshops, inter-disciplinary design teams worked on early phases of the project in a broad variety of contexts and life experience settings (Fig. 12.4). Moreover, the facilitator had pre-designed questions to all participants. Each participant builds an individual model, which was made explicit to the other participants through explanations and common dialogue. In addition, when analyzing the material from the workshops, it was evident that some of the models played a more significant role in the workshops compared to other models. These models were not only created by some of the participants with direct experience and made some of their hidden knowledge explicit, but also had both a "concept component" and an "experience component".

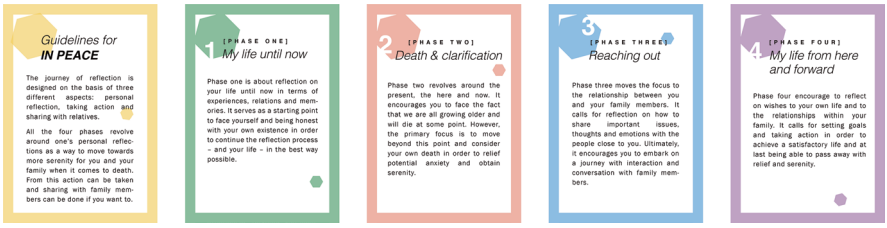

Fig. 12.3 The four main phases of guidelines for In Peace workshop

Fig. 12.4 The toolkits for the facilitators in the workshop

4 The Fear of Death

As a result of the participatory action research on 18 workshops (324 participants) during 2016 to 2020, we concluded four main fears of death: (1) to fear of being severely ill; (2) to worry about loved ones; (3) to enter the unknown; (4) to die alone.

4.1 Fear of Being Severely Ill

Many of the elderly people fear the point in the later part of life where they will face severe illness. It is not so much the fear of the actual death, but more an anxiety of the consequences that will follow the process of severe illness. In this regard most of the people dread to be a burden to their family (mostly their children). This anxiety leads to a comprehensive insecurity for the future—what will happen to me? Who is going to take care of me? (Figs. 12.5 and 12.6).

> *My parents worry about the process of dying. They are very independent, it they are sick and can't get out of bed, they will panic and feel hopeless.* (An adult child explaining the Model A)

> *For my parents, the scariest thing is sickness and lying on the hospital bed. Not being able to get out of bed is the most helpless thing to them.* (An adult child explaining the Model B)

Fig. 12.5 Model A: The skeleton represents a person who have been lying in bed for a long time, it is not a human anymore. The treasure box is metaphor for the need to spend all the money on medical care when being sick for a long time

Fig. 12.6 Model B: a person lying in a hospital bed looking at the crematorium chimney as a next step, feeling hopeless

4.2 Worry About Loved Ones

Huang and Chong (1987) found that the elderly in Taiwan in general don't care whether there is a life after death, but they do care about their family after their death. What is going to happen to my spouse, children, and relatives? How will they manage without me? Many of the workshop participants expressed worries in relation to these questions. Only the person's loved ones can alleviate this fear.

Fig. 12.7 Model C: a sick mother is lying in the bed worrying that she can no longer take care of all her children, and she is looking at each of them and crying

Sometimes people at their last moments worry more about their loved ones than themselves. They are so concerned about the reaction of others (family and friends), and this concern often overcome the fear of dying itself (Fig. 12.7).

> *When my mom was still alive, she was so depressed, she kept crying. She couldn't find relief because she was worried about us, what we were going to do without her.* (An adult child explaining the Model C)

4.3 Entering the Unknown

Death is the ultimate unknown-no one has survived it to tell us what happens afterward. It's in our human nature to want to understand and make sense of the world around us but death can never be fully understood while we are still alive. Addressing this concern has physical, emotional, and spiritual implications. Even if our loved one is not religious, some relatives consider asking a priest, rabbi, minister, pastor, etc. In some instances, they could bring a gift of peace and calmness, regardless of past doubts and scepticism (Fig. 12.8).

> *My parents can't overcome the year of death; they think death is like serpent beasts constantly hunting them. They're panic and feel helpless. They don't know what is going to happen to them after death.* (An adult child explaining the Model D)

Fig. 12.8 Model D: the parents stand behind the fence (metaphor of end-of-life point). After the fence they will enter the red door. What is behind the door is unknown, there might be serpent beasts waiting for them

4.4 Dying Alone

Traditionally in Taiwan, a three generations family living pattern is an invisible steel frame to support family members growing old. In this way the elderly is always accompanied and cared by other family members. Most of the workshop participants said that to be surrounded by family members is considered the most satisfying way to close the last chapter of life journey. However, changes in societal structures, personal preferences, results of lower birth rates and smaller families have led to a disintegration of the three-generation household.

Nowadays this is only an extravagant hope to many elderlies. Some of the elderly is of the conviction that their generation has more worries than before. It is common that elderly live independently. They often live alone (with/without spouse) and the distance to their children is getting further and further (due to children studying or working far away). As a result, many of the elderly think that loneliness is the most common challenge for their generation to face. Elderly who lives alone express a profound anxiety for isolation. They worry that no one will be around when the last moment arrives, or they would be found dead after many days or weeks (Fig. 12.9).

> *I live alone. I am most afraid of sickness and of dying alone. When I was still alive, I was alone. After I die and cremate, there is nothing left of me.* (An elderly explaining the Model E)

Fig. 12.9 Model E: elderly is sitting at a big table and eating alone. The big table is a metaphor of loneliness

5 Reflections and Design Implications

5.1 New Transformation of East Filial Piety

From five thousand years of profound Chinese culture, the Confucian value of filial piety is deeply rooted in family relationships. However, the interpretation and practice of filial piety are taking new forms. It is not only children treating or listening to their parents and keeping their parents happy. Many people are leaning towards the opinion that if the children are happy, parents are the same. In this way filial piety is now also about what parents can do or give to their children. The flow of filial piety goes from children toward parents: children should respect, show obedience, and accompany their parents and provide them with financial support. The flow of filial piety now also goes from parents toward children: the parents give everything they can and own. The only thing they don't want to give is a burden to the children.

Not being a burden to one's children is a part of the current interpretation of filial piety. It seems like all expectations, orders, and wishes for the children are given before they marry and start their own family. Once the adult children establish their own family, the parents' attitude change to support and give, most importantly they don't want to become a burden to their children. They ask what they can do for their children instead of talking about their own wishes and desires. Furthermore, they don't talk about their fears because this will give pressure to their children. On the

other hand, the children like to do something for the parents and understand what is on their mind. However, if the parents don't express their needs and desires, it can become a dilemma in the family. In the following is an example from the workshop, which clearly shows that what the elderly express is not necessarily what they really want because of the twist of filial piety.

> *If I am sick, I rather to stay in the hospital bed so I won't trouble my family. Of course, I like to stay home, in my own bed, but the others will suffer... so it is better to be in the hospital, they (the children) can come to visit me whenever they have time. It is better for everyone. I don't want to be a burden to the children, they are busy enough in their everyday life, they have enough worries to themselves.* (A female participant, age 72)

Another example is a male participant at age 73 who talked about the death matters with his younger brother. They had discussed funeral arrangement, who to invite and where he wished to be buried. The reason he didn't want to mention this to his children is that he doesn't want to give pressure and worry to his children. He is afraid that if he brings up this issue, his children will think he is sick or unhappy. His brother is two years younger than him so he will understand his thinking because they are in the same "old age". He knows it needed to be brought up before it is too late, and his brother did the same thing to him.

> *I have told my younger brother that if I die what kind of funeral I want, who / want to see, who shouldn't come, he knows my temper... I also told him where I want to be buried, he knows everything. We have been together to see new possibilities (graveyard). They are so expensive... money should be used for people alive not used for death. I don't talk about this to my children because they will think I am getting sick, or I am unhappy, or I need attention from them. I don't want them to worry about me, I am no trouble to everyone.* (A male participant, age 73)

The elderly people find it hard to discuss death arrangements with their children and try to avoid this topic. However, when death arrives, it often causes family dispute. Having conversation about death isn't just a one-time thing. It is the first in a series of conversations over time. Not to over stigmatize the situation, starting the conversation gradually during family chatting can release the tension to both parties (Fig. 12.10).

> *Our family has a close relationship. We will get together and drink a little red wine. During this time, my grandparents will more or less mention about this (death), but not in details. Actually, my family can start this kind of conversation after we have a little drink…and little by little each time.* (A male participant, age 75, explaining the Model F)

5.2 Family Companionship and Support

The parents who live far away from their adult children have more fear of death. It is common to see elderly people living far away from their children. Often young people move to a bigger city or another part of the country (or even abroad) to enhance and pursue education or carrier possibilities. When couples live far from their children, they often feel like they only have each other. If one is sick, then a big

Fig. 12.10 Model F: a grandfather and a grandson enjoy red wine and chatting

pressure is given to the spouse. Some of them already lost their spouse and have to get along all by themselves. They can't count on their children far away to support them in their everyday life and describe a constant inner struggle about whether to call their children and tell them about an illness or not.

They know that due to the distance, their children cannot provide instant help, so the parents keep the worry within themselves. They also worry about sudden illness or death because they fear that their children will not be able to make it to see them at the last moment. Therefore, the health of the spouse becomes crucial. In this way their anxiety towards death can be bigger than the elderly who live with or close by their children (Fig. 12.11).

> *I worry the most about one of us being healthy and the other one not being healthy. As a couple, you should grow old together and take care of each other: Our children are all in the U.S. They have their families too. We only have each other I hope we can go together, not leaving one alone, this will give trouble to our children.* (A male participant, age 77, explaining the Model G)

5.3 Satisfaction After Retirement Impacts the Attitude Towards Death

Elderly people who experience satisfaction and value after retirement often have a bigger chance to think that death is fair and natural. Retirement is a benchmark for many elderly people. Some elderly has trouble to adjust to a new identity due to a high job position and education level before retirement. After retirement their

Fig. 12.11 Model G: two animals represent a couple; one is healthy (tiger), and one is ill (elephant). The tiger is looking at the elephant and feeling helpless, because helping the sick elephant is out of its abilities

position through many years is no longer there. Many feel the need to find a new title to maintain their identity or they will feel useless. If they can't cope with a new identity, they feel lost and without a purpose. They risk losing control of their own lives and feel reluctant to face and deal with death.

Elderly who had fought life battles and have had to work hard to provide acceptable living conditions to their family, are generally happier after their retirement. They have less expectation to themselves and to their children. They don't need to find new identities for themselves but instead focus on new interest to fill up their lives. They are free and have more time to enjoy doing what they like. In fact, their life often becomes better after retirement. They think life is fair to them, so when the death comes, they will accept it and have less anxiety because they think they got enough out of their life (Figs. 12.12 and 12.13).

> *I think my life after retirement is much better! I finally have freedom! I was a worker and a soldier. I retreated to Taiwan when I was 18 years old. I worked in a machinery factory. All my life was working, working, and working, you really need to work hard to put food on the table to feed the children. I was lonely, I had no friends. Now I feel so satisfied! Life is fair to me, and I have no complain.* (Male participant, age 74, explaining the Model H)

> *My grandmother is very religious and is not fear of death. She knows what happen after her death... where she will be. We can talk about this at any afternoon teatime. Her most fear is not death, but she feels useless. So we need to give her some jobs to do, let her feel she is needed.* (a male participant explaining the Model I)

Based on these three research reflections, we believe that it is necessary to develop a better service design for (elderly) people in the future. First, since death is something that everyone must face in the future, and the sooner you can start a conversation with your family is the better. Therefore, using good guidance/

Fig. 12.12 Model H: Elderly joins grandchildren's birthday celebration. All family members are together and share a birthday cake. The pink flags represent happiness and enjoyment

Fig. 12.13 Model I: the grandson and grandmother having an afternoon teatime. The one with white helmet is the grandmother. White helmet represents white hair. She is not so afraid of death; she knows God will lead her to Heaven when the last moment arrives. She rather " to give" than" to take". The treasure box next to her means different tasks for her to do and tools she needs, so she thinks she is still a useful person

facilitation skills combined with visual tools so that everyone can plan well in advance will avoid many misunderstandings and regrets. Second, through promotion with good timing (for example, from retirement financial management, life education and other community courses), more people are willing to invite parents or children to participate together. In addition, we should encourage more people to

start life planning in earlier stage of life to develop corresponding action plans. Third, the current family structure tends to be decentralized. More and more people live with their spouses or themselves. How to address the needs in the chapter two of life, and match to the related services to improve the quality of life become very crucial and important. Through this study, the design guidelines of future life planning workshops/courses could be applied.

6 Discussion

According to Butler's theory Life Review, once elderly people realize their last moment is approaching, they start to review their life. Was it valuable and meaningful!? If they accept their past with satisfaction, it is easier to accept their death. If their life review is full of passiveness and regrets, death becomes unbearable and unacceptable. Life review is not meant to bring back elderly people to live in the past, but to assist the integration of their personality and experience with the present and reflecting it into the future. And at last, this should result in an increased chance for dying in peace. However, if the review results in a negative evaluation, the person may fall into despair. In other words, the person may be filled with regrets and want to change his/her life but may not feel they have enough time or strengths, thus making the prospect of death difficult to endure. In this case, why wait to the very last part of life to make the review of life? The clock is ticking, and we should have proactive engagement about death to enhance positive impact on daily lives during old age and improve overall life quality.

In this research, we found using service design methodology and LSP method/bricks could be one of the good ways to talk about death. Consequently, we developed the facilitation guidelines and workshops with four main phases in the workshop, including (1) my life until now; (2) death & clarification; (3) reach out; (4) my life from here and forward. It provided a better way to challenge our imagination of old age or even the graduation ceremony of life (a farewell). During the process, we could imagine having power to decide how and where we want to end our life, in what condition for us to say "OK, I got enough! I am satisfied! I am ready to leave!" If we know our life in many years from now will end up like what we have chosen and planned ourselves, many worries will vanish. Moreover, when we set a theme or a story of our happy ending, we set a direction for our life, and then we could have a better arrangement for the lifetime.

In addition, through participatory action research in workshops, this study first explored four main fears of death: (1) to fear of being severely ill; (2) to worry about loved ones; (3) to enter the unknown; (4) to die alone. Furthermore, we argued three crucial reflections from the study as design insights: (1) new transformation of eastern filial piety; (2) family companionship and support; (3) satisfaction after retirement impacts the attitude towards death. By getting more understanding and open discussion about death and old age, we continued developed the conceptual model for the practical application of old life review and action planning (Fig. 12.14).

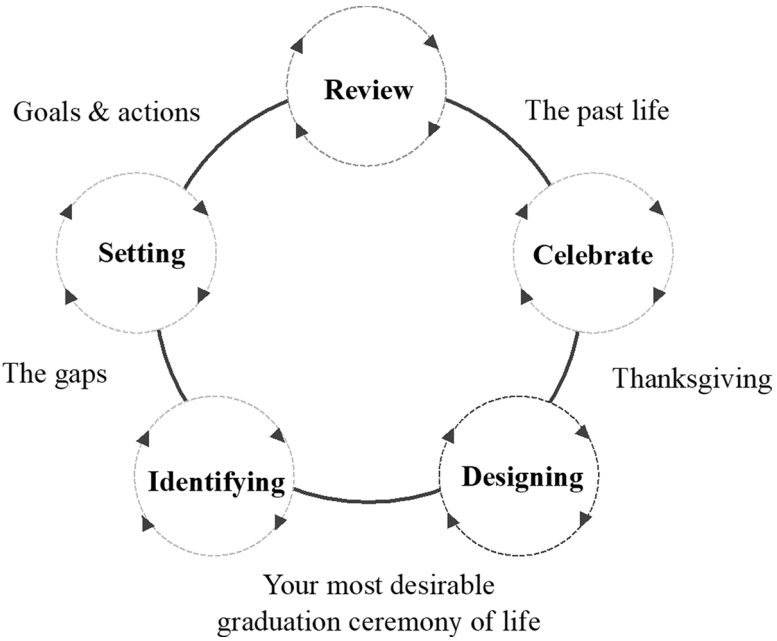

Fig. 12.14 The conceptual model for the practical application of old life review and action planning

The model includes five main steps. First of all, reviewing the past life experiences, memories and achievements with good facilitation. Secondly, celebrating and recognizing what you have done, and to thank for all who appeared in your life. Third, designing the most desirable graduation ceremony of life, and you would have no regrets to die. The fourth step is to identify the gaps between the most desirable imagination and the current situation, and that could be the problems or challenges about your health, financial, relationship and self-actualization. Finally, setting the goals and action plans for your lifetime and try your best to make the dreams come true.

Traditionally, most of us have left the "death" to professionals or experts, but we should take it back and have control over our lives when we are still healthy and fresh. Talking about death is difficult, but through good design, we could still open another window and transfer to positive/constructive attitude. Let this kind of topic be carried out under good guidance, interface, and design. Frankly speaking, no one want to talk about death until the last minute. Most people want to be able to imagine their graduation ceremony of life, so that they all can talk and well prepare for the second chapter of the life. In this study, we applied service design methodology and LSP tools to the issues of life design. It could be an inspiration for designers and practitioners, although there are many viewpoints from this research still need further verification. Future study directions could be: (1) applying the conceptual model to different facilitation process; (2) choosing other participants with different

age/life stages.; (3) comparing differences viewpoints/perspectives among countries; (4) developing new digital tools and multi-disciplinary programs to promote the experience journey and effectiveness.

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Chapter 13
Plurality of Service Design from a Cultural Perspective: Collective Discourses in East and Southeast Asia

Joon Sang Baek, Eun Yu, and Jung-Joo Lee

Abstract In the domain of design, Asian countries predominantly engage with established frameworks and methodologies, often integrating them from other regions rather than pioneering new ones. This adaptation of philosophies, principles, and methods from various design domains—including human-centered design, interaction design, and user experience design—has been critiqued for its alignment with Western rationalism and neoliberalism, leading to a monolithic view of design. This issue is pronounced in service design, where dominant narratives overshadow the diverse cultural contexts of application. The trend of formalizing service design processes in Asian organizations risks perpetuating this monolithic perspective, neglecting socio-cultural nuances. To address this challenge, reflective dialogues among Asian service design practitioners and researchers are crucial. This chapter introduces an initiative fostering such dialogues, involving service design practitioners and researchers from Japan, South Korea, Mainland China, Thailand, Singapore, Hong Kong, and Taiwan. These discussions revisit service design concepts from cultural perspectives and identify practical challenges and strategies for effective implementation. The findings highlight the need for a nuanced approach to service design in East and Southeast Asia, proposing a future research agenda for its sustained development.

Keywords Service design · Plurality · Situated practice · Culture · Asia

J. S. Baek (✉)
Department of Integrated Design, Yonsei University, Seoul, Republic of Korea
e-mail: joonsbaek@yonsei.ac.kr

E. Yu
Department of Design, Seoul National University of Science and Technology, Seoul, Republic of Korea
e-mail: eyu@seoultech.ac.kr

J.-J. Lee
Division of Industrial Design, College of Design and Engineering, National University of Singapore, Singapore, Singapore
e-mail: jjlee@nus.edu.sg

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1 Introduction

In the field of design, Asian countries have primarily engaged with established frameworks and methodologies, often integrating and adapting them from other regions rather than pioneering new ones. Philosophies, principles, methods, and case studies from various design domains—such as human-centered design, interaction design, and user experience design—have been adopted by researchers, practitioners, and educators in these countries (Lee & Lee, 2009). Some scholars have critiqued the close alignment of these concepts and narratives with Western rationalism and neoliberalism (e.g., Escobar, 2018; Kim, 2018), resulting in a monolithic view of design (Escobar, 2015). This phenomenon is particularly evident in service design, as Duan et al. (2021) revealed a dominant and seemingly monolithic narrative through interviews with service design practitioners worldwide.

Addressing this issue is particularly timely, given the current trend of formalizing service design processes for effective adoption and dissemination in numerous Asian organizations. For instance, the Japanese government has recently introduced service design process guidelines for public officers. Similarly, the Korean government published a service design framework and toolkit for citizen design groups a few years ago. Although the abstraction and reductionist view (Escobar, 2018; Duan et al., 2021; Akama et al., 2019) may expedite the rapid adoption of service design across different organizations and regions, it often presupposes a monolithic view of the cultures in which it is applied (Escobar, 2018). Consequently, this results in the neglect of existing beliefs and practices related to 'service' (Kim, 2018) and 'designing' (Akama & Yee, 2024, p.2), which are deeply rooted in socio-cultural contexts and are inherently plural (Willis, 2006). Without critical examination of this monolithic perspective of service design and culture, the adoption of this relatively new discipline may remain superficial within many organizations' innovation agendas, potentially leading to its abandonment if it fails to produce outcomes and formats comparable to those observed in 'mainstream' cases.

One approach to mitigating this challenge is to build reflective dialogues among service design practitioners and researchers in Asian countries, focusing on their efforts to integrate service design into their own socio-cultural contexts. Key questions include: Is service design truly a foreign concept to be adopted from outside? What assumptions and beliefs underlie the application of service design? Beyond formal processes and tools, what practical work have service design practitioners in Asia taken to make service design work, and what challenges have they faced on the ground? How are these experiences entangled with the socio-cultural contexts in which they are situated?

This chapter introduces an initiative to bring together service design practitioners and researchers in Asia to discuss these issues, challenging the monolithic view of service design and culture. As the editors of this book, we invited the chapter contributors from Japan, South Korea, Mainland China, Thailand, Singapore, Hong Kong, and Taiwan to engage in collective discussions. These discussions led them to revisit the concepts of service and service design from their cultural perspectives

and explore what it takes to adopt and effectively implement service design. This chapter presents the findings from the collective discussion and identifies future research agenda towards sustained development of service design in the context of East and Southeast Asia.

2 Plurality in Service Design

In traditional service design research, where the focus was often on market offerings provided by a company, plurality tends to be considered as a factor that may threaten the controlled quality of service. Management literature on service failures and service recovery (Hess Jr et al., 2003), which attempts to tackle variability occurring in service situations may represent this reductionist view of service (Rodrigues et al., 2021). However, with the emerging recognition of service systems as a unit of analysis of service research and practice, plurality started to be rather considered as a quality that may enrich service design and even further as an opportunity that may need to be proactively pursued (e.g., see Vink et al., 2021). Recognizing that service systems consist of actors, materials, technology, information and many other resources, service designers take these heterogeneous system elements involved in value co-creation with their dynamics, relationships, and interactions into consideration (Sangiorgi et al., 2017).

Increasingly, service designers seek to leverage various dimensions of plurality to enrich service design research and practice. Plurality has been explored through various objects of study, which are mainly concerned with actor relationships and interactions, organizational and social structures, and cultures (Karpen et al., 2021). While actors jointly integrate their own resources for value co-creation and enact the service, they often cause the issue of plurality, variety, or tension (Tóth et al., 2018). As a way to manage multiplicity inherent in actor relationships and interactions, service designers identify patterns related to value creation or disruption, such as patterns of beneficiaries' perspectives on actor networks (Caic et al., 2019) and patterns of disruptions among actor relationships and interactions (Rodrigues et al., 2021). Service designers also develop literacy as an instrument to better deal with plurality inherent in actor relations, caused by various issues including power (Goodwill et al., 2021) and dignity (Kim, 2021).

Plurality is also investigated in the context of organizational and social structures. Recognizing the plurality of organizational logics, service designers indicate how misaligned logics between multiple units in organizations can obstruct the overall innovation process and result in conflicts (Klitsie et al., 2020; Sangiorgi et al., 2016). In a similar vein, yet beyond the boundary of an organization, service designers highlight the importance of an awareness of plural institutions inherent in the wider setting of service ecosystems since these variations may play a critical role in exposing and changing social structures through service design (Vink & Koskela-Huotari, 2021).

Going beyond institutions, as service design is widely recognized in different parts of the world, there has been a recent discussion on situating service design in the plurality of culture. This discussion often entails a critical view on a dominant and monolithic narrative of service design (Duan et al., 2021), in line with Escobar's (2015) criticism toward a "universal model" of design from a Euro-American perspective that has been exported to many world regions through colonialism, development and globalization. To illustrate what happened with service design, groups of service design experts from the Global North are invited to transmit the core capabilities and tools, often in forms of trial workshops, short courses or commissioned projects. In this process, codified process models, such as the well-known double diamond diagram, serve as an intelligible medium for both designers and non-designers to situate what they are doing and where they are heading to. Such process models and tools also serve as tangible commodities to be taken away from those workshops, courses and projects (Lee, 2014).

While such portability (Lee, 2014) of service design arguably contributed to the rising interests in and transmissions of service design world-wide, it also imposed a reductionist view to what service design is and how it should be done. This view takes one's attention away from the entanglement and embodiment of practice with particularity and multiplicity of contexts, while service design practices involve significantly intricate interactions among what gets done, who does it, what is believed and what is available in different socio-cultural contexts (cf., Akama & Prendiville, 2013; Duan, 2023; Lee et al., 2011; Lee, 2014; Light & Akama, 2012).

To embrace and recognize plurality of service design from a cultural perspective, recent studies attempt to describe situated and emerging practices of actors entangled in socio-cultural contexts. For example, Duan (2023) conducted autoethnography to reveal service designers' situated work in healthcare projects in Shanghai. His autoethnography revealed local designers' situated and relational practices to build stakeholder relationships and co-creation processes, which are hard to describe with the existing well-known process diagrams and methods. Akama and Yee (2024) shed light on practices of "designing social innovations that have been ongoing under other names, often unrecognized, rooted in places, cultures, histories, tensions, and wisdoms in the diverse Asia-Pacific region". *Entanglement* (Akama & Yee, 2024) of design practice in socio-cultural contexts supports a view to service design as an embodied practice that cannot be separated from social systems (cf., Vink, 2023).

In enriching current discourses on plurality of service design in cultural context, gathering narratives of local service designers in terms of their views to service design and their situated experiences was of utmost interest to us. This motivation led to form a symposium with all contributors of this book, as an avenue to verbalize their service design work and challenges in socio-cultural contexts, exchange and compare each other's stories, and build collective discourses.

3 Methods

We organized a focus group discussion with the chapter authors in the format of an online symposium in February 2023 (Fig. 13.1). The symposium aimed at reflecting on current perceptions, approaches and practices of service design in Asian countries and discussing challenges and future directions of service design in Asia. It was semi-structured and lasted 3 h. It began with the acquisition of informed consent to record the discussion followed by the introduction to the book and the participants, topics for discussion, open discussion and wrap-up. The participants included eight contributors from Thailand, Taiwan, Japan, Hong Kong and Singapore and three editors (Table 13.1). Other contributors from Mainland China, South Korea, Japan and Singapore sent their responses to the questionnaire via email.

Topics for discussion were threefold:

1. *Service and service design from the traditional cultural perspective:* What is the historical context of service and service design in your culture? How was your traditional concept of service and service design influenced by the introduction of 'Service Design' from the West?
2. *Adoption of service design*: How was service design adopted? How has it evolved in Asian countries? For example, was service design a strategic agenda by the upper management? Or was it adopted by employees/grassroot communities? To serve what purposes?
3. *Challenges*: What challenges or limitations does service design face in your work or culture? Do you see any relations to your cultural, social, economic, and political contexts?

Conversations during the symposium were recorded with the permission of the participants and verbatim transcribed for analysis. Three editors analyzed the conversations within each topic, loosely following the process of thematic analysis (Braun & Clarke, 2006). We also used the arguments made by the contributors in their

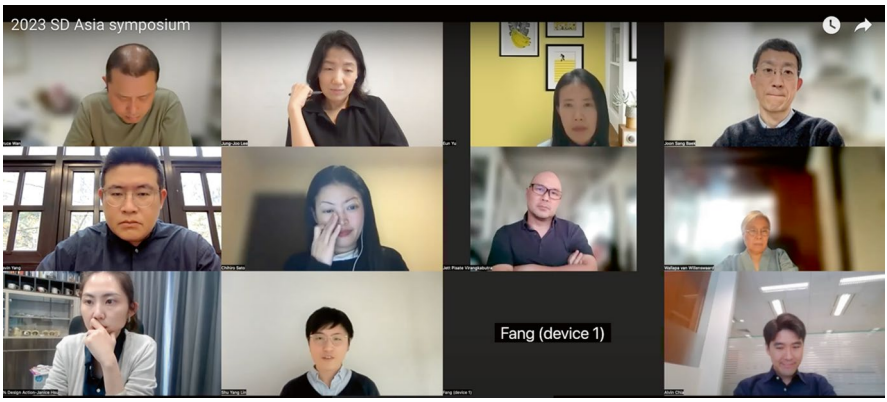

Fig. 13.1 A screenshot of the 2023 service design in Asia symposium

Table 13.1 The list of symposium participants

	Name	Region	Job roles related to service design
1	Shu-Yang Lin	Taiwan	(former) Lead at the government in-house innovation lab
2	Fang-Jui Chang	Taiwan	(former) Service designer at the government in-house innovation lab
3	Chen Fu Yang	Taiwan	Founder of the social design group
4	Chihiro Sato	Japan	Professor in service design
5	Wallapa van Willenswaard	Thailand	Founder of the social innovation group
6	Pisate Virangkabutra	Thailand	Design consultant for the government / university lecturer
7	Alvin Chia	Singapore	(former) In-house service designer in a bank
8	Bruce Wan	Hong Kong	Professor in service design
9	Fang Zhong	Mainland China	Professor in service design
10	Satoru Tokuhisa (email questionnaire)	Japan	Professor in service design
11	Yoori Koo (email questionnaire)	South Korea	Professor in service design
12	Debbie Ng (email questionnaire)	Singapore	Design consultant for the government

chapters to support the findings. The following Sects. 4.1, 4.2 and 4.3 report the discussion of these three topics respectively.

4 Findings

4.1 Meaning of Services in the Traditional Cultures of Asia

The English term ‘service’ originated from the Old French *servise* or Latin *servitium*, which implies ‘slavery’ or ‘servant” (Oxford English Dictionary, 2023). Later on, the term became more associated with business offerings in the context of Eurocentric market, and this meaning of service is widely used globally nowadays. However, Asian cultures traditionally have concepts and practices of ‘serving people’ built on unique traditional values.

The concept of *omotenashi* in Japan, is a good example. This Japanese expression, derived from their tea ceremony culture, describes concepts of hospitality or mindfulness but cannot be directly translated into an English concept. As highlighted by one of the participants from Japan, “in omotenashi, a host (provider) and a guest (receiver) form a relationship where their objectives and values are aligned” (Tokuhisa, Japan). In this sense, *omotenashi* resonates with value co-creation in service logic. A service practice stemming from a tea-serving culture can be found in Taiwan, too. In Taiwan, there was a practice in city offices where public servants

served free tea to citizens. According to Lin, this reflects a citizen-serving mindset in their own way.

> *In the very recent decades in Taipei City in Taiwan, we started to have the culture of feng cha (奉茶) in the public services. When you walk into a local public space, the public servants there will start giving you free tea. And that's quite recent, probably 10 or 20 years ago, I think, which for me is quite normal because it is gong gong fu wu (公共服务), right? It's a service that public organizations provide to the citizens.* (Lin, Taiwan)

In the Buddhist culture, service is practiced based on relational qualities such as the sense of sharing and caring, which is deeply embedded in village people's life.

> *The Buddhist culture in Thailand has a concept of dāna, which means 'giving', and 'sharing the food offering every morning'. This relationship is a kind of service that we give to the farmer, and farmers give, in return, the good service of a good food.* (van Willenswaard, Thailand)

While traditional concepts of services or values that determine what is good service in Asian countries can be traced, those cultural concepts and values have not drawn sufficient attention from service design literature and practices in Asia.

> *Until now, omotenashi has been introduced particularly in the area of human-to- human services such as restaurants, hotels and retail shops, but it has not been discussed in connection with design* (Tokuhisa, Japan)

As shown in Taiwan's public servant example, where there has been a citizen-centered mindset manifested through the tea-serving practice, public servants are relearning how to bring citizen-centeredness in their work through the service design training and workshops given by Western agencies or *"hai gui pai"* (海归派), i.e., local experts who studied overseas.

4.2 Adoptions and Promotion of Service Design Entangled with Organization Agenda

In the Asian regions we observed, service design was adopted and promoted with motivations which were often highly strategic and dependent on the social, political and economic conditions. Despite the diverse motivations and contexts, it was the public and private sectors that primarily drove the top-down adoption and promotion of service design. The public sector utilized service design to propagate the innovativeness within government services.

In Thailand, the government adopted service design from United Nations Development Programme (UNDP) not long after a military coup in 2014. Service design was part of the public sector innovation and reformation package used as government propaganda. In Singapore, the majority party adopted service design around 2010 as a strategy to keep the minority party in check. In South Korea, the government started promoting and spreading service design in 2014 under the new regime that propagated a 'people-centered and participatory government'. A similar

top-down adoption is observed in the Singapore bank sector. Recognizing customer's needs for better services and threats from the fintech startups, banks started to adopt design thinking, at the beginning, for customer-facing products and services. From 2016, some banks explicitly introduced their service design approaches and implemented them to offer better and more coherent customer experiences across multiple touchpoints. Then they expanded their goal to embed service design organization-wide.

On the other hand, social organizations or grassroots communities adopted service design in their search for a new approach to address sociotechnical needs, deal with complex networks, and generate social and economic values. For example, the Thai food health system recognized the necessity to involve multiple organizations and networks and called for a new approach to create collaborative platforms, which they found in service design. "Service Design was brought to spark the multiple experts/stakeholders collaboration" (van Willenswaard, Thailand). In Japan, service design as a field of design has developed at the grassroot level, mainly by practitioners in large corporations, global design agencies and the Service Design Network Japan Chapter. It was only very recently that the Japanese government started to adopt service design.

> *In 2020, the Ministry of Economy, Trade and Industry (METI) compiled a research report on service design and established guidelines on how to introduce it. In local administration, the Tokyo Metropolitan Government has established service design guidelines in 2023. These are all supported mainly by a private company in Japan whose core business is service design.* (Tokuhisa, Japan)

In Mainland China, one of the service design pioneers was academia, which collaborated with Service Design Network (SDN) in 2011 to introduce service design to higher education. Along with a rapid growth of the service industry in Mainland China, service design education also spread quickly in the past decade with over 30 universities offering service design courses in 2019 (Fang, Mainland China).

Service design was usually commissioned to experts from the West (e.g., service design agencies and service designers educated in the West) in the initial phase of adoption. These experts were asked to demonstrate service design and train local designers. For example, United Nations Development Programme (UNDP) introduced service design to the Thai government, which then commissioned LiveWork, a UK service design company, to organize workshops and conduct projects. Singapore Ministry of Manpower conducted projects with IDEO, a US design and consulting firm. The South Korean government ran a program with Engine, a UK service design consultancy, to educate local designers. The Thai food health system received guidance and consultation from Ezio Manzini from Politecnico di Milano, an expert in service design and social innovation. Such efforts led to enhancing the service design capability and capacity in the public and private sectors of these countries. For example, a Singaporean bank trains employees as 'silent' service designers, i.e., non-designers who practice service design within an organization, with the help from service design professionals, as illustrated in Chia and Lee's chapter (see Chap. 7).

4.3 Challenges and Situated Practices for Service Design

While service design in many Asian countries was initially imported from overseas and introduced to some selected organizations in a top-down way, its actual adoption and implementation process in the field sometimes encountered barriers. These barriers were caused by various contexts, including an organization's lack of understanding of service design (e.g., Virangkabutra, Thailand) and an organization's innovation-adverse structure and culture (e.g., Chia, Singapore). Facing these barriers, designers helped people practice service design in a rather indirect way, not necessarily imposing it. They communicated and practiced service design in a way to better adapt to the local innovation and business practice and process. Service design has thus been pursued through situated practices that may better fit into people's existing contexts.

One situated practice for service design was concerned with promoting the value of service design by familiarizing people with service design progressively. The symposium participants reported their effort to localize service design practices to better fit into their contexts and cultures. This is partly concerned with translating unfamiliar concepts into more familiar ones. Lin from Taiwan for example reported her team's effort to educate people on the concept and methods of service design, like brainstorming, workshop, and Post-its®. The adaptation of service design is also partly supported by the fact that many case studies focus on innovating local and public services at hand in the regions. The initial service design practices for the local issues were intended to lead a progressive diffusion of service design with a wider impact. Virangkabutra from Thailand compared this to the scene of the movie *Shawshank Redemption*.

> *I'm looking for different ways and I thought to myself, like, I think of myself as Shawshank Redemption, trying to chip away, chip away the wall, chip away…* (Vi rangkabutra, Thailand)

This practice was also identified in the commercial sector, specifically the banking industry in Singapore. The value of service design has been gradually promoted within the organization while designers helped the organization initially experience a small success of the service design outcome, expecting the organization to more actively adopt service design in its day-to-day practice and process.

> *They will not jump in immediately, but they will typically start off small with something very consumer-facing, test, and learn, before then it goes deeper and deeper into the company itself.* (Chia, Singapore)

Another situated practice for service design was concerned with co-creation. While most of the case studies in the chapters involved co-creation practices as an essential aspect of service design, the symposium participants reported their actual struggle and effort related to them. Collaborative multidisciplinary workshops, where diverse stakeholders are involved to integrate their own resources, were recognized as a common form of co-creation activities in most of the projects. However, to enable

the collaborative workshops in the field, designers made an effort to create a mindset for people who are not familiar with the concept of co-creation.

> *People will ask about what is workshop, and why do we want to have workshop? And in public space, for example, it's really difficult to initiate a workshop in Taiwan, because it's not a meeting. So we kind of need to rephrase 'workshop' into a 'collaborative meeting'.* (Lin, Taiwan)

The co-creation mindset was also fostered by building the community spirit and making a relationship of people toward a shared vision through a platform. For example, in the Thai health food program as illustrated in the chapter by van Willenswaard and Integration Project 2020 Team, the spirit of 'Community Supported Agriculture', based on a sense of responsibility (Food Citizenship) among stakeholders, was fostered through the integration project as a strategy to facilitate successful collaboration (see Chap. 10). Meanwhile, as a way to enact collaboration, designers created a condition as an environment where co-creation may occur spontaneously. This is well described in the case of *5% Design Action* in Taiwan, in Yang and Halskov's chapter. 5% Design Action was created as a social design platform to enable multidisciplinary collaboration for solving local and social problems (see Chap. 12). As shared by Yang during the symposium, Taiwan also developed a digital matchmaking platform to help people who work on innovation projects for Sustainable Development Goals to find out their interdisciplinary partners for co-creation.

In addition, the situated practice for service design was recognized in the organizational transformation process geared toward sustainable implementation of service design. Symposium participants reported a barrier where organizations initially adopted service design practices, but these practices were discontinued after the designers left. Therefore, their focus has shifted to make service design part of the organization's day-to-day practice. It has been pursued partly by nurturing silent designers with service design capabilities as reported in the case studies of a Singapore bank by Chia and Lee (Chap. 7). Also, designers developed and embedded service-design-enabling mechanisms, regulations, or motivation systems within the organization, as mentioned by Lin from Taiwan in the symposium.

> *We see ourselves as the servant of the public servants, which means we are the ones who serve them to help them provide their services to the systems, to our citizens. And that's why we are more focusing on providing resources, providing facilitations, or providing helps to the people who are actually front-facing the citizens.* (Lin, Taiwan)

Another practice for sustainable service design implementation was pursued through an extension of an object of service design beyond service to service (eco) system. Designers considered a macro and system perspective as a strategy to enable service and sustain it in a longer-term basis. For example, the Integration project in Thailand has been used as a service to make the ten-year Food Policy program design more collaborative and system-oriented, as highlighted in the chapter by van Willenswaard and Integration Project 2020 Team (see Chap. 10). Also, in the project of innovating the tourism experience in Japan in Sato's chapter, designers took a macro-perspective to co-create service ecosystem together not only with the

employees of the ryokan but also various actors in the region who may contribute to the culture of hospitality (see Chap. 6). The spirit "entire town is one accommodation" changed all actors in the region as potential resources, and designers focused on uncovering their diverse goals to pursue balanced centricity for ensuring the sustainable service ecosystem.

5 Discussion and Future Research Agenda

The discourses of service design in Asian countries illustrate the plurality of service design in Asia, highlighting its diverse understanding, adoption, and practice, all intertwined with local intentions and challenges. While the adoption and practice of service design in Asia may not always encompass the comprehensive and multi-layered scopes presented in major service design literature (e.g., Patrício et al., 2011; Kimbell, 2011; Vink et al., 2021; Yu, 2020), they are pragmatic and driven by specific local needs and priorities. For instance, service design was adopted in Asian countries for public service innovation, transforming organizational processes, and creating socioeconomic value. The adoption of service design is sometimes driven by management to achieve organizational goals (see chapters by Chang & Lin, Taiwan; Ng & Lee, Singapore; Virangkabutra, Thailand; Koo, South Korea; Chia & Lee, Singapore) or by practitioners seeking new approaches (see chapters by Sato, Japan; Tokuhisa & Morimoto, Japan; van Willenswaard & Integration Project 2020 Team, Thailand; Yang & Halskov, Taiwan).

We believe that the inherent plurality of service design attracts a wide range of organizations and practitioners, who find in it elements that resonate with their needs, such as human-centeredness, co-creation, or transformation. However, the challenge arises when such adoption stems from a partial understanding and opportunistic attitude, which limits exploring and harnessing the evolving capacity and scope of service design. This limitation is evident in the frequent conflation of service design with design thinking, human-centered design, or user experience design applied to services. Consequently, some stories of service design in this book reflect this partial and opportunistic adoption, especially when service design is used merely as a set of methods and tools.

We have observed that in some cases, practicing service design is reduced to applying a well-known process or set of methods. Several contributors have expressed concern about the risk of reducing service design to a mere package of processes, methods, and tools (e.g., a one-day service design workshop). According to Fang from Mainland China, this approach severely restricts the scope of service design to "making." Instead, as asserted in her chapter, service design should be viewed as a practice driven by an "intention" that incorporates careful consideration of implementation issues (see Chap. 9).

When service design is adopted to support management's agenda or as a toolkit, it often fades away once the intended goal is met or the targeted period ends. This phenomenon is particularly pronounced when service design is adopted top-down

to achieve specific agendas. In the governmental cases presented in this book, across South Korea, Singapore, and Thailand, service design was utilized as a practical tool to promote political agendas, such as establishing a citizen-centered government after the military coup in Thailand or fostering citizen participation in a new participatory government in South Korea.

This phenomenon of service design's trajectory in big organizations in Asia is worth reflecting on and examining, as this might be unique to service design, compare to other design disciplines' trajectories of adoption and maturing, for example user experience design. Some questions for reflection include: What happens around adopting and applying service design, intertwined with the organizational culture and agenda? What is it that makes service design's trajectory or "life span" unique, compared to other design disciplines? What should be done to support sustainable practices and growth of service design? We believe these are important questions for service design research communities in Asia to attend and systematically examine.

During the symposium, the contributors raised a concern that the partial and opportunistic approach that drove the rapid adoption and growth of service design in many Asian regions could also have negative consequences for the sustained growth of service design, particularly within the highly dynamic and trend-sensitive Asian culture. In response to this challenge, a key idea that emerged was the necessity of building a robust ecosystem founded on vibrant interactions among industry actors, researchers, and educators. Service designers must go beyond merely fulfilling clients' demands to continually offer innovative approaches and perspectives that benefit their clients, as they have done with the human-centricity, co-creation, and transformation. This contribution, in turn, requires a strengthening of service design research in Asia. Strong research informs projects and enhances education, which is crucial for advancing the service industry.

While service design research is expanding in Asia, the growth is uneven, driven by a few regions, with the rest showing marginal progress. According to Scopus, 1188 documents featuring 'service design' as a keyword were published between 1990 and 2023 (Scopus, accessed on June 13th, 2024). The number of publications in Asia has steadily increased, now representing 38% of the total (n = 451). However, most of these publications originate from scholars based in Mainland China (n = 257), South Korea (n = 57), Taiwan (n = 52), and Japan (n = 45). Web of Science data shows a similar trend under the same search conditions: from 1999 to 2024, 419 documents featuring 'service design' were published by scholars based in Asia (Web of Science, accessed on June 17th, 2024), constituting 31% of the total publications worldwide (n = 1340). Most of these publications were authored by scholars based in Mainland China (n = 208), Taiwan (n = 83), South Korea (n = 65), and Japan (n = 52). Although the data might not be exhaustive, they underscore the necessity to reinforce service design research capacity across Asia.

The findings and reflections from the symposium naturally lead us to consider a future research agenda that can support the continuous growth of service design in Asia. If service designers are to offer novel approaches and perspectives to their clients, what might these be? What future research topics could be relevant and of

interest to our readers, as well as to service design practitioners and researchers in Asia? We acknowledge that the following research agenda is neither comprehensive nor validated. We propose these topics with the hope of sparking further discussions:

Firstly, towards service design as situated practice: Service designers should deeply understand the ecology and value structures of the context from the early phases of the design process. Researchers can facilitate this understanding by reviewing existing service design tools and methods to evaluate how they support the pre-understanding of service ecology. This includes the development of new settings, methods, frameworks, and case studies.

Secondly, methodology to support service implementation: Successful implementation strategies are deeply intertwined with a comprehensive understanding of the service ecology. This understanding should not rely solely on the individual skills and expertise of designers but should be supported by a structured methodology that supports implementation.

Thirdly, service evaluation criteria addressing cultural and ecological factors: Evaluation criteria for services should extend beyond efficiency to include considerations of cultural and ecological fitness. These criteria should assess how new services reflect and further advance existing values and practices within their specific contexts.

Lastly, a virtuous circle of research and practice in service design: Service design research communities in Asia should examine the limitations and constraints of current service design practices. They should actively advocate for industries to transcend their narrow view of service design and recognize its broader potential.

These topics aim to encourage ongoing dialogues and explorations within the service design field, particularly in the Asian context.

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