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EDITORS:

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Life-Changing Design

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EDITORS:

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Offline and Online Collaboration in Providing Service Design Projects for Social Innovation to Villages: A Co-Creative Action in Quanzhou

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In the field of rural revitalization, social innovation is seen as an added value for government institutions in contributing to a more prosperous society. Villages have gained increasing attention recently for achieving social innovation goals. With the support of social networks, there are many actors who can participate in the design of social innovation processes enhancing citizens' abilities to contribute. Meanwhile, the design community has developed many collaborative processes to contribute to this field, but these collaboration practices are largely local in nature and do not consider integrating online and offline collaboration. In 2022, CSDC (Chinese Service Design Community) and Upbeing Action Village collaborated on a one-month program titled "Co-Creative Action in Quanzhou". This research explored the possibility of introducing service design for social innovation in villages, especially, exploring the possibility of collaboration online and offline. This paper describes a research through design (RtD) project with the aim to organize a one-month service design program as an experimental subject. After the project, the author conducted semi-structured interviews with 24 participants, and used a qualitative analysis method to conduct coding analysis. This research explores the opportunities and limitations of service design projects through online and offline collaboration and suggests a structure to organize future interventions that aim to break the geographic limitations and engage creatives in villages.

Keywords: service design; social innovation; offline and online collaboration; rural revitalization

1 Introduction

As a country with a long-term agricultural history, China is dominated by rural areas. Currently, rural revitalization has become a popular topic in China, especially in the guideline document brought about by the 20th National Congress of the Communist Party of China, which highlights this aspect (Xinhua, 2022). The Chinese government has called for more attention to be paid to rural development in China, and a series of measures were released. Villages are facing challenges due to population loss, lack of

attention, and cultural heritage faults (Hasdell, 2018). “Compared to urban and rural community development, the villages and towns in China urgently need systematic social innovation to avoid lagging behind the rest of the country” (Hai & Siu, 2011, p. 517).

The purpose of this research is to explore how offline and online collaboration can be used for service design projects in a village: What are the advantages and limitations of online and offline collaboration when designing in rural contexts? Is it possible to use this kind of collaborative approach in the future for rural revitalization? Designed as an experiment following Research through Design (RtD) (Herriott, 2019), the author has designed a "Co-creative Action in Quanzhou'' in August 2022. The program was undertaken by CSDC (Chinese Service Design Community) in collaboration with Upbeing Action Village, an NGO based in Shanghai. After the experiment, the author conducted semi-structured interviews, and analyzed the data through a qualitative analysis (using MAXQDA software).

This research reveals the opportunities and limitations of offline and online collaboration in service design projects. Moreover, this experiment evaluates two sequential approaches to collaboration, "online-to-offline" and "offline-to-online", to determine how online and offline designers contribute to this process, as well as its potential implications for service design projects.

Because of the pandemic, remote collaboration was initially considered as an emergency solution but it is now becoming a common practice. Scholars point out that it could contribute to knowledge sharing between stakeholders and offer the opportunity to engage a wide range of stakeholders and stimulate their innovative capabilities (Bertello et al., 2022; Vermicelli et al., 2021). The increase of the use of remote collaboration has had some positive effects especially in remote areas allowing a stronger connection with the "centers" of creativity, which can combine with local conditions and without geographical limitations.

However, little has been said about bringing outside creativity into rural development projects through online and offline collaboration.

1.1 Social Innovation in Villages through Service Design

Service design is particularly related to social innovation (Manzini, 2015). Social innovation projects use service design as an effective approach, allowing for the facilitation of co-value creation with different stakeholders through co-design workshops and other approaches (Mazzarella et al., 2017). Service design as a human-centric and systematic approach could be applied in the service of the village. This kind of service is acknowledged as a “wicked problem” involving diversity stakeholders and complex situations (Nimegeer et al., 2016).

Social innovation is defined as “‘innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly developed and diffused through organisations whose primary purposes are social” (Mulgan et al., 2007). To summarize this definition, Cipolla states “The word "social" in "social innovation" refers both to the means and the end”, which means, on the one hand, social innovation requires the participation of different stakeholders and on the other hand, social innovation lies in solving a series of social problems which, unlike business problems, cannot be solved by profit-driven innovation (Cipolla, 2012; Mulgan et al., 2007). These social issues, classified as “wicked problems - a class of social system problems” (Churchman, 1967) without stopping rules and keeping dynamic, arising with social developments (Buchanan, 1992). “Innovations are needed in the process of handling wicked problems.” (Suoheimo et al., 2021, p. 16). When service design

intervenes in the public and social sector, it is inevitable to face wicked problems (Goodwill et al., 2021). Service design is a human-centered design (Amatullo et al., 2022; Stickdorn et al., 2018, p. 13), which corresponds to the nature of social innovation (Penin, 2018, pp. 215–217). It can become the facilitator to the open-end co-design processes and involve different actors. As Manzini (2015) points out, service design is “particularly relevant to design for social innovation” and appeared in design of social innovation as a component (Manzini, 2015, p. 59). Social innovations are everywhere(Manzini, 2015; Mulgan et al., 2007; Penin, 2018). Among the fields of social innovation, Mulgan et al (2007) also include “growing diversity of countries and cities” (Mulgan et al., 2007).

In the last two decades, some design practical cases and research on social innovation have focused on rural areas, to site a few: Model Eco-friendly Hamlet from Poland (Meroni, 2007, pp. 38–39), Design Harvests from China (Amatullo et al., 2022, pp. 158–161), and recently, the SMOTIES project, an ongoing project as a part of Human Cities Network focus on “designing cultural and creative innovations in 10 European small and remote places conducted by leading universities and experts in Europe”(SMOTIES PROJECT, n.d.). But the author would like to point out here that all these cases were carried out locally and did not involve structured online and offline collaboration.

2 Research Background

2.1 Design Research Context

The research project described in this paper has been conducted as part of a large program called "Co-creative Action in Quanzhou," which was organized by two bottom-to-up organizers: Upbeing Action Village and Chinese Service Design Community.

Upbeing Action Village (http://www.upbeing.com/) is a non-governmental organization in Shanghai that focuses on eco-village development. This organization was established in 2017 and facilitates community-based crowdsourcing projects related to social issues around China. Chinese Service Design Community (CSDC) is an unofficial bottom-up community composed of more than 220 service design experts and students (Zhang, 2022). The community aims to explore the possibility of localizing service design in China, including adapting it to its cultural and development context.

From the 31st of July to the 28th of August 2022, CSDC collaborated with Upbeing Action Village to launch a one-month program named “Co-Creative Action in Quanzhou”. From offline, Upbeing Action Village provided hospitality to offline participants, connected with local resources, and supported the final exhibition's set-up and venue. From online, CSDC designed the process and management of the project, created and operated the online sharing spaces, supported online lectures, invited participants for online think tanks to ideate and prototype with teams, and planned the final exhibition (Figure.1).

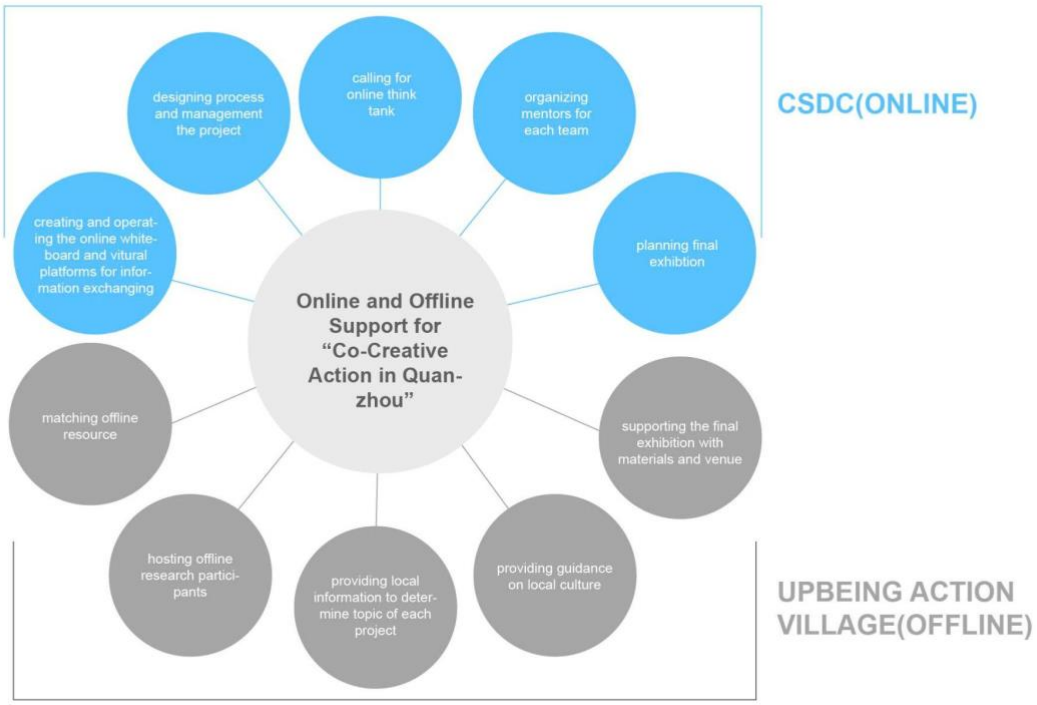

Figure 1. The offline and online support from Upbeing Action Village and CSDC in "Co-Creative Action in Quanzhou", created by the author.

2.2 Introduction to the "Co-Creative Action in Quanzhou"

The research context is the village of Weitou, Quanzhou, in Fujian province. It is the hometown of Upbeing Action Village's founder. This village has a long coastline and thousands of years of history. As an integral part of the maritime silk road (Quanzhou | Silk Roads Programme, n.d.), this village maintains a strong Minnan cultural heritage, such as ancestral shrines and worship practices. Historically, the residents have a strong family culture and are the main contributors to emigration from China to other countries. Many national brands in China originate from this territory, in particular the clothing industry, due to a flourishing industrial manufacturing industry in the area.

Thanks to the previous research led by Upbeing Action Village on the future development of this territory, four strategic areas of intervention were defined in 2022:

1. The local women's economic empowerment
   This project focuses on Yuwan, which is a handmade local food by taro. During the pandemic the clothing industry was in crisis and many women wanted to contribute to the family income thanks to the production and distribution of this food. Therefore, they hope that this food can get more attention. The local women's group proposes Yuwan as a starting point, to explore new opportunities for their family business.
2. The village library activation
   The village library is a culture service facility established in administrative villages to meet the cultural needs of local villagers. However, this place lacks use in Weitou. For these reasons, the project focuses on how to use this cultural space and rethink the meaning and function of this public cultural service facility.
3. Spiritual culture of Quanzhou

Quanzhou has a long history of port culture and was once described by Marco Polo in the 13th century AD as "...[ZAI-TUN] is indeed impossible to convey an idea of the number of merchants and the accumulation of goods in this place, which is held to be one of the largest ports in the world" (Polo, 1300), The culture reflected in the local architectural styles, people's daily lives and religious beliefs. This project is intended to incorporate these cultural features and think about possible outputs through service design.

4. Nonhuman - marine conservation
   As a village near the sea, there is a long history between local villagers and the ocean. The marine culture is rooted in villagers' minds and behaviours. In recent years, the growing concern about environmental issues has activated experts and institutions to protect the marine's fields around Quanzhou. The aim is to discuss human and nonhuman relationships and to collaborate with local actors to produce a service design project with the potential to spark social innovation.

Table 1. Four strategic areas of intervention defined for "Co-creative Action in Quanzhou".

Teams	Topics	Keywords	Design Objects	Target Groups	Final Outcomes
Team A	Spiritual Culture of Quanzhou	#Minnan Culture #Heritage Conservation	Traditional local customs	Performance enthusiasts at the Nan Yin Club[1] and audiences	Developing a series of touchpoints to enhance the performance experience for both performers and audiences, and to increase tourist awareness of Nan Yin's performance
Team B	Nonhuman - Marine Conservation	#Marine Culture #Beyond Humanity	Ocean-related non-humans	Fisherman, residents in the village and oyster	Providing a wish-related tourism commemorative service to help regenerate endangered oyster reef ecosystems
Team C	The local women's economic empowerment	#Local economy #Food and Culture	Yuwan, a handmade local food (with pictures)	Local women's group	Developing Yuwan-related experience workshops and proposing a long-term media campaign strategy
Team D	The village library activation	#village library #Space	Village Public Library	The Children in primary school in Weitou Village	Extending the space for children's activities outside the village library with a mobile reading installation and gamified reading activities

[1] An association that focuses on the performance of traditional local opera forms.

In the "Co-Creative Action in Quanzhou" program, to address these areas of intervention eight types of stakeholders were identified as illustrated in Figure 3, of which 24 participants were the target stakeholders of focused observations. In addition, two types of stakeholders provided knowledge support from their experiences; 1) the flight lecturers from design, society, biology, business and theater performance - their presentation aims to provide participants with additional knowledge for project advancement; 2) the Online Think Tank where participants participated in online workshops hosted by teams for ideation and prototyping.

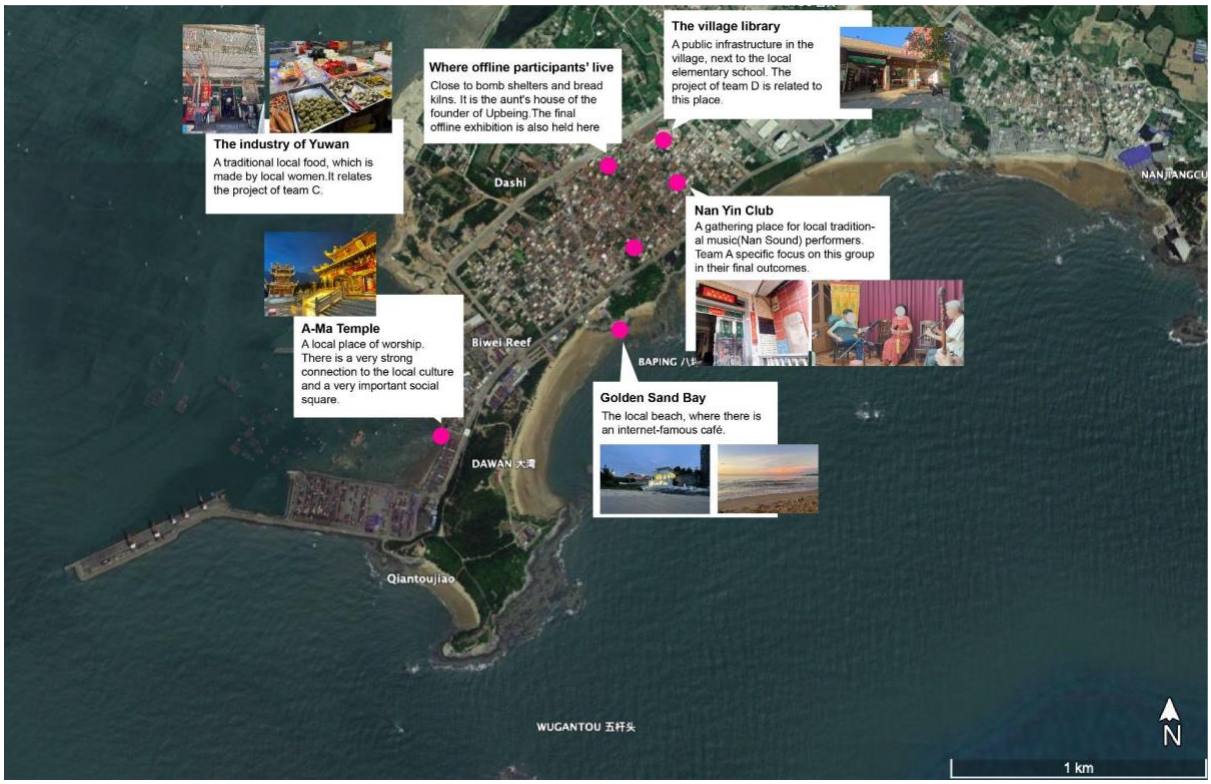

Figure 2. The map of Weitou village (the pictures were taken by participants of the program, the map was downloaded from google earth pro), created by the author.

After the program, each team was guided by organizers and mentors in designing the exhibition, which was intended to introduce the villagers with their ideas. The photographs illustrated in Figure 4 show how each group was encouraged to use black boards to create interactive exhibits of their prototypes, ideas, and collect feedback from visitors in order to improve their designs. Originally, the exhibition was intended to be a mobile exhibition to reach a wider public of local villagers. However, due to weather conditions and the epidemic, the exhibition ended up being a family exhibition, and it was set up in the first-floor public space in the self-built house of the offline organizers who hosted the event.

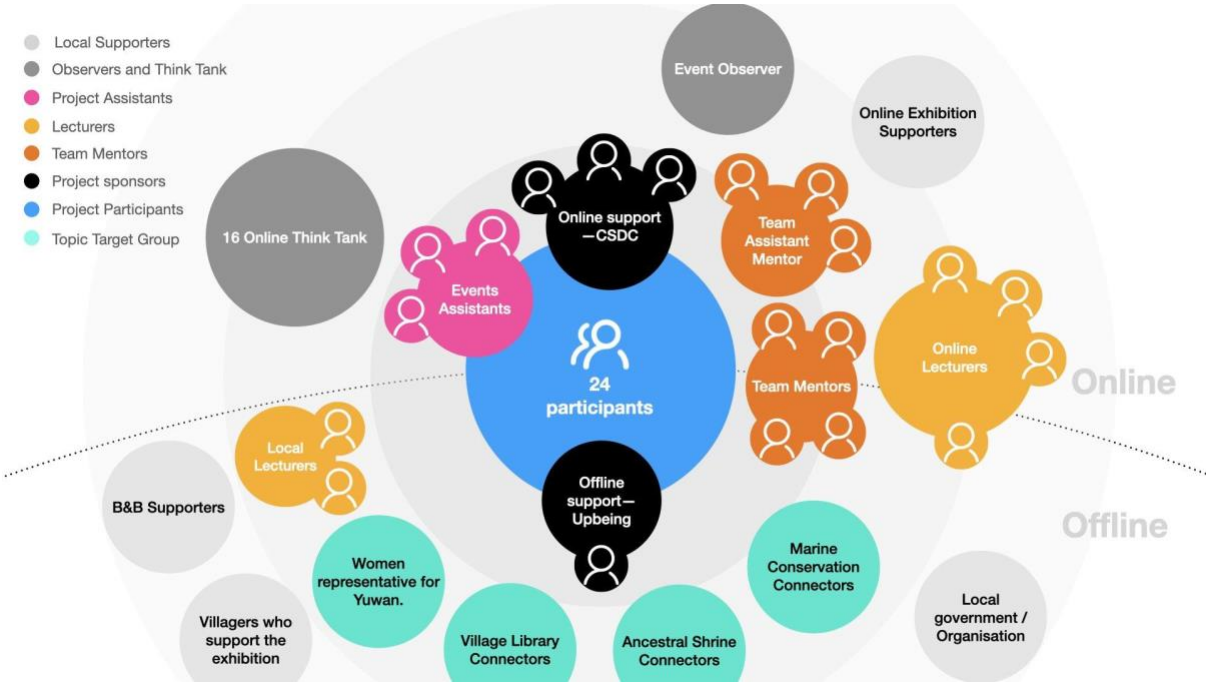

Figure 3. The different stakeholders in "Co-Creative Action in Quanzhou", created by author.

Figure 4. The final exhibition in Quanzhou, provided by Upbeing Action Village.

3 Methodology

Although the role of service design has been widely discussed within social innovation projects, contributions in this field have rarely addressed implications regarding the use of offline and online collaboration of stakeholders and designers.

By applying a Research through Design (RtD) methodology, which “attempts to discover knowledge by doing design work” (Herriott, 2019), the research aimed to reveal what the opportunities and limitations of service design through offline and online collaboration could be, and how designers can engage in service design projects in villages through collaborating offline and online.

For the design of the experimental process, the author relied on the "Co-Creative Action in Quanzhou" program. Through the support of Upbeing offline and CSDC online, the author has designed the projects as a project manager and referenced two commonly used design thinking processes to the program management. One is mentioned by the Institute of Design at Stanford University (Plattner, 2010), i.e. 1) empathize, 2) define, 3) ideate, 4) prototype, 5) test, and the other is the double diamond (UK Design Council, n.d.), to organize the process of the program (Figure 5).

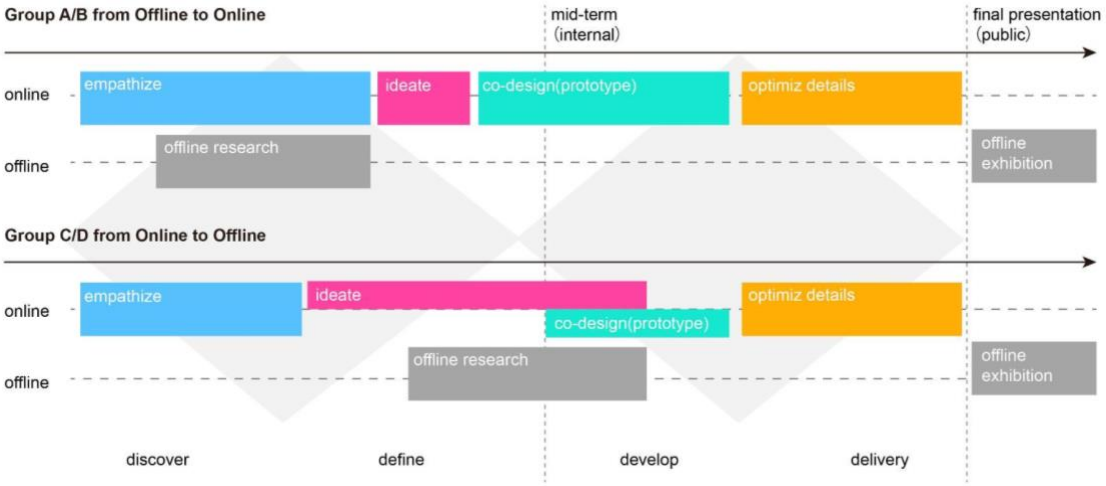

Figure 5. Experimental process of "Co-creative Activity in Quanzhou"

Online recruitment was conducted: participants learnt about the project through articles on WeChat's official account, signed up through a questionnaire in the article, and were selected after an online interview with the organizers. The interview aimed to get to know the candidates. The author was involved in the process as one of three interviewers. Finally, 24 participants were selected from a pool of 39 candidates. The selection process kept into consideration the following criteria: availability to travel and develop activities in presence inside the village; availability for contributing to the project; previous program experience; design abilities such as knowledge of service design, graphic design, video-making, space and product modeling; soft skills such as communication and team working; motivations and objectives of their participation.

The participants were divided into four teams based on their backgrounds and their interests. Since few of them had rich experience with service design, each team was assigned at least one mentor who was a design expert with experience in related topics. Also, several online and offline lecturers gave lectures about service design tools, co-creation workshops, etc., to add to the design and cultural

*Table 2. Detailed information on participants and teams in "Co-Creative Action in Quanzhou" (*means the participant with service design projects experience).*

Teams	Participants			Mentor info	The Orders of Research in the First Steps
	Roles	**Online/ Offline**	**Background**		
Team A	A1	Online	Industrial Design	A Mentor, An Associate Mentor, and A Team Assistant	From Offline to Online
	A2	Online	Service Design		
	A3	Offline	Digital Media Arts*		
	A4	Offline	Information Design		
	A5	Offline	Architecture		
	A6	Offline	Industrial Design		
Team B	B1	Online	Interactive design*	A Mentor and An Associate Mentor, and A Team Assistant	
	B2	Online	Visual Communication		
	B3	Offline	Industrial Design*		
	B4	Offline	Industrial Design Engineering*		
	B5	Offline	Digital Media & Communication		
	B6	Offline	Fashion Design		
Team C	C1	Online	Service Design	A Mentor and A Mobile Associate Mentor, and A Team Assistant	From Online to Offline
	C2	Online	Digital Media Arts		
	C3	Offline	Product Design		
	C4	Offline	Product Design*		
	C5	Offline	Product Design*		
	C6	Offline	Accounting, among the service design programs for change of major		
Team D	D1	Online	Architecture	A Mentor and An Associate Mentor, and A Team Assistant	
	D2	Offline	Architecture		
	D3	Offline	Architecture and design management		
	D4	Online	Product Design		
	D5	Offline	Strategic Design and Researcher		
	D6	Offline	Industrial Design Engineering*		

knowledge. There were six people in each team, two online and four offline. At least one participant in each team had experience in service design, but for this individual it was not mandatory to go offline. Two teams conducted online research first, followed by field research in one week, and the other two inverted that order (Table 2).

After the final public presentation of each project, the author conducted semistructured interviews with 24 participants in two weeks. Interviews aimed to understand:

- How does the team collaborate online and offline? What are the opportunities and limitations?
- How did offline and online participants contribute to the final outcome of the service design project?
- How do offline and online resources contribute to the designer's team?

Interview results followed qualitative research approaches, using MAXQDA for coding. Additionally, the author's observations and informal communications with various stakeholders during the program contributed to the final findings.

4 Findings

In comparison to the social innovation in the urban area, the village lacks attention due to its geographic limitation. In most cases, youth leaving the village are unable to find suitable employment opportunities within the village, so they are not able to contribute to the local development even if they wish to. A major method of introducing youth power is through the organization of study tours or local programs. However, the power of these temporary approaches is limited. The village will return to its old way of life once they have left. If online participants were allowed to participate in the program, it would be beneficial for long-term village activism. This program allows for participation of a variety of actors, including designers who have received training. It gives them the opportunity to interact with the real world and to share their creativity with villages without having to travel a long distance. Additionally, it provides them with the opportunity to gain experience in social innovation through service design. This program explores offline and online collaboration through the use of social media, which also meets the requirements of a fluid world where “every project tends to be flexible”(Manzini, 2019, p. 5). The findings of the research conducted suggests that this kind of collaboration could work in village service design projects with a flexible approach.

4.1 Offline and online collaboration’s opportunities and limitations in providing service design for villages

The following paragraphs report the results of the qualitative analysis.

4.1.1 Diverse and collaborative teams

Online and offline collaboration allows service design students as well as working design professionals to participate in a project remotely. This promotes team diversity and a variety of viewpoints. Team members can learn from each other and improve themselves through peer-to-peer learning.

> *My group members are talkative persons, and we all have a large age gap and different education backgrounds, but the common point is that we are constantly broadening our boundaries. (Participant, D2)*

The collaboration between members of different majors enhanced the design output with different perspectives. It can achieve positive results when dealing with services in a complex system.

> *I think members in my group work well together, someone who is the more practical person, and someone with many considerations, [for example], my thoughts are more flexible. [In the team], someone who has the architecture and space perspective to think about, someone from industrial design to provide some ideas about product design, someone providing some fresh forms from the interactive design perspective. (Participant, A2)*

However, such a diverse team can also be a double-edged sword, especially when it comes to team decision-making. Creating a unified consensus is difficult. Furthermore, the different understanding from the different design disciplines' perspectives can also cause a disconnection between team ideation and final outputs.

> *[...] that's probably also because of our different [design] approaches. When assigning things to individuals, individuals will have a lot of subjective ideas when doing this. …Maybe the people who came this time had a very different level of understanding of service design. When I suggested that I wanted to do a user journey map, I was thinking that it was needed to sort out the service process. It may be that the task was assigned to the person [with less experience in service design], then making this user journey map becomes a mechanical task, and the objective is to finish the template. In the end, this journey map took someone a lot of time, but did not achieve the corresponding role and effect. (Participant, A2)*

4.1.2 Abundant external resources from different stakeholders

More resources, especially knowledge transfer can be brought in through online-offline collaboration. For example, more offline and online resources from a variety of stakeholders can support the design team regardless of their geographical location. Here, authors mainly highlight two stakeholders and how they can help the designer's team in the project.

Mentor: mentors played a directional role for the team; their rich personal experience could help the team not to lose their way in the face of complex relationships in the project. In addition to offering the team a unique perspective, the mentor can help the team gain a broader perspective on the issue and help teams improve their decision efficiency.

> *[...]although they are called mentors, they cannot just be called mentors. They are a knowledge base that can be explored. Not like a teacher, more like someone to explore, someone with more practical experience. (Participant, A2)*

> *I feel uncertain about some things, but the mentor can see something that we can't see. (Participant, D3)*

> *She helped us save a lot of time going around in circles. (Participant, C3)*

> *If we didn't have a mentor, we would have been able to move forward, but it would have been hard and would have taken more time and probably would have come out in a very rushed output at the end. (Participant, A4)*

In addition, for the team, mentors are not only needed to provide professional support, but also to be an emotional pillar. A mentor who only provides a different perspective and a richness of experience is not enough. The mentor's presence can also help build confidence in the team and has a positive correlation to the stability within the team. It doesn't change depending on whether the mentor is present or not, offline communication can help mentors and participants better understand each other to build that emotional connection. And the uncertainty because of online collaboration may damage this connection.

> *It's important that mentors come offline and that we can convey our emotions to them. (Participant, D3)*

> *One thing is quite impressive, and it led to a big internal dispute and conflict. Our own internal [team] is clear where our current stage is, we are clear how to go to the next, but the mentor does not quite understand why we follow that direction [...] We have formed an internal language, but there may be some loss of information transmission from the outside as a mentor. (Participant, B5)*

Online Think Tank: the project introduces the online think tank as external online support for ideation and prototyping test, which aims to provide a design expert perspective. Experts from different cities participate to contribute with their input and advice remotely thanks to the communication technology development. Although not all teams included the think tank in their design process, feedback from Group A and B showed that the Online Think Tank could positively impact the team's creativity and validation of the solution. Despite this, not all teams seek the support of think tanks, mainly due to uncertainty about the effectiveness of this method.

> *We're also not sure how we could position the role of the think tank. (Participant, D1)*

> *One of the most confusing points for us is the think tank: should we do the online workshop with them or not, why do we need to do that, what are we looking for from the think tank? (Participant, C2)*

In addition, the team needs more experts related to the theme of the group rather than only design experts to participate, to provide more local information and research-related information to test and verify the design outcomes.

> *We would like to have more local support, for example, the organizer can help us to ask some Nan Yin performers. (Participant, A3)*

> *We would like to co-design with tourists. We would like to do the workshop with tourists. We would like to get their feedback to verify and correct our design ideas. (Participant, C2)*

4.1.3 Information transmission

All teams said that they mostly use online meetings to exchange information. Meetings present a good opportunity to summarize and discuss the information from offline and online research together. However, teams face the challenge of time management due to the limited time for instant communications online. For example, being absent due to the different working schedules, daily routine or different time zones. Several participants mentioned situations in which they met for more than six hours, but these meetings were not very efficient as they expected and did not attain the

desired results. One reason is that the team spends a considerable amount of time updating offline research data through the meeting. Some participants mention that they can only gain information from offline participants through meetings. The result is, on the one hand, the long-term meetings cause a lack of focus easily. On the other hand, the time constraints may cause the lack of detail about information transmission from offline to online.

> *In the beginning, we met with the mentor at night, about 9:30 p.m. Then we would keep meeting until very late, even after the mentor had left. In the team, communication may not have been very effective, because we had different opinions. Often, we thought the same thing, but from different angles, and these opinions can coexist instead of persuading or choosing only one. [...] Our meeting ended without us talking about what we should do next, and then we went to sleep. I felt nothing to do during the day, I didn't know what to do, and I asked the other two online team members what we should do, but they needed to work daily. (Participant, C1)*

> *It's hard to steer six people in one direction with only one or two hours of communication, and each person has very little space to express themselves. (Participant, D3)*

> *We will have a meeting with the online team members at 7 or 8 pm after a day of research, but we[offline] will discuss it first and then tell the online team members the results. (Participant, A5)*

In addition, one of the major problems with offline collaboration is the completeness of information transfer. The feelings and more details generated by offline research cannot be transferred to online, and the lack of local experience cannot be compensated by photos, texts and narratives. Some participants indicated the body language from villagers cannot be communicated to online participants. At the same time, designers who do not have experience in the local culture lack a deep understanding and perception of the local culture, and information through descriptions from offline team members and desktop research can only be combined with their past personal experiences, which may lead them to have a “subjective plotting”, influencing their design decisions. In fact, this may result in solutions that are impossible to implement or that may even be unintentionally offensive to the local culture.

> *There was some uncertainty, and a lot of things were in my imagination. First of all, I thought Weitou was a very small village, because they told me that the population was small and there were not many tourists. For me, I could only imagine the scene of my imaginary internet-famous café I visited before instead of actually imagining its specific appearance. I had no way to actually imagine its specific look, actual customer flow and decorating style, etc. Even if I see these photos, I still don't think it's very real. The information in front of me shows that Weitou is not a very popular spot for tourists, and there are not many young people living there, so it's hard to imagine what an internet-famous café in that place is like. Although I have seen some pictures, there is still a difference with my own feelings. (Participant, A2)*

Table 3. The opportunities and limitations of service design through offline and online collaboration

	Diverse and collaborative in team	**Abundant external resources from different stakeholders**	**Information transmission**
Opportunities	- Team members and viewpoints diversity - Support the final comprehensive design output	- Additional external support	- Conduct remote research regardless of the geographical location
Limitations	- Ineffective team decision-making - Different understandings lead to inconsistent design outcome	- Uncertainty regarding the potential role of these resources	- Time management - Channel limitations and long time meeting - Incomplete and untimely information transmission from offline to online

4.2 How can designers engage in service design projects in the village through collaborating offline and online

4.2.1 The roles of designers online and offline

The online design participants are more inclined to auxiliary roles, especially during the Empathy and Define steps. They can support offline research more effectively, for example, they can collect local information from search engines, i.e. culture background and stakeholders they can connect with, which can help the offline participants to build the awareness of the village quickly before they begin the field research. They also can manage materials uploaded by offline research and summarize it to support the team's subsequent insights. Although the 'subjective plotting' offered by online participants may negatively influence final design outcomes, they could also provide more innovative ideas thanks to an external perspective, outside of the local context bubble, particularly when offline participants become overwhelmed by local information and become too focused. Online participants provide a more diffused perspective as well as a bolder viewpoint. As a result, contributions from online and offline members complement each other and could attain a positive impact on the final design result.

> *I think they are like a bystander. They are able to see some different perspectives, we (the offline participants) may have some strictures [from field research], but they don't. The mind of offline participants may not be outside the box enough, and many times offline participants may have great limitations, while online participants will be bolder. (Participant, C3)*

The roles of designers offline are pioneers, they are the source of real information and the more proactive party to advance, the investigators and explorers. They are the eyes of each group. They undertake the work of verifying the information and ideas provided online.

> *They would drag you to the conversation and tell you how likely it is that this idea can be implemented offline. They would give your observations from field research, including the*

locals' reflection about the ideas, and some specific details to help justify whether the idea is suitable for the service we want to design or not. (Participant, A2)

The seeds of service design projects for social innovation that are rooted in the soil of reality can flourish, the practical feeling of the local situation provides the direction of teams, giving the project more meaning and a deeper understanding of the unseen people and things in the area. Participant D5 mentioned, “This first-hand research and feelings make this later research and output warmer.” These feelings are also translated into details in the design output, making the whole design more three-dimensional and fleshed out.

But it is interesting to point out that as project processes transition between offline and online, team roles change dynamically. At the beginning of the fieldwork, offline parts played a crucial role. Their work could not be replaced by online components, such as interviews with villagers, observation and experience of the culture for first-hand information. However, the responsibilities of each participant become unclear when all participants move to online participation. Thus, they need time to reestablish a stable division of work within the team due to a fluid division of responsibilities. Differences in focus due to divergent goals may result in the laxity of will collaborate in the end. While the project did not explicitly test how establishing a unified objective could positively contribute to this change in role, observations of the project practice process and interviews indicated that establishing a unified objective allowed the team members to return to the project path more rapidly.

The members of our group have conflicting goals for the final product, that is, we have different visions for the final product, so this may be a matter of who is right and who is wrong. (Participant, B3)

Our group didn't have a role in helping everyone pull together... But after we set this direction, we have a common goal, and then we have to work together and keep pushing down this pathway. (Participant, A5)

4.2.2 The design process from online to offline and vice versa

In the design process, the authors designed two scenarios of online and offline collaboration, starting with online collaboration and then moving to offline, and vice versa. It aims to see how this change in the sequence of online and offline collaboration affects the service design project.

From offline to online means the designers go to offline research first for one week then move back to online to complete design projects. The designers are able to go offline directly to observe and create the image of the place. But the limitations of the offline research are also significant: without a deeper desk research, time is needed to find a focus for field research, and the research is not always what is needed. As participants A5 pointed out: “The results of the research and the output did not fit 100%”. When Teams A and B finished their first week offline and returned to online, since they did not have a clear offline research goal planned before, they found the need to go back offline and seek confirmation from the residents in the area, or the need for co-creation, when they returned to produce insights online.

We seem to have produced all these insights online, offline at the time there was not a clear insight, and then after producing the insights we then sought validation from the local residents. (Participant, A6)

With the return to online, however, it became very difficult to communicate with the local people to design the validation. Moreover, as members spend more time online, they receive more information online, which weakens the offline experience. Although Participant B3 mentioned that "without the seven days ahead, it doesn't have a final output.", she also noted, "After we researched a lot of things online, more information came into our heads... We didn't know how to grasp it, and there were a lot of good cases online that we wanted to incorporate, but the local content was diminishing" and Participant B6 from the same group also mentioned: "We questioned our localness."

For the online-to-offline team, the challenge was to evaluate the situation on the ground. After establishing impressions through desktop research and then offline, the local situation was so different from what the designers had imagined that they were almost inclined to give up.

Participant C4 said: “There is a big difference.” Participant C5 mentions, “After we came back from the village, we felt a big impact, [...]after on the second day of our research, our mood hit rock bottom.”, Participant D6 also pointed out: “plans can't keep up with change.” The impact of this contrast also opened up opportunities, as a result of the advanced vision, with the program to the local verification, thereby gaining a deeper understanding of the local situation. Even though the plan was overturned, it also allowed the designers to realize the limitations of their own perspective and thus gain more insight to get a design output that is more relevant to the local situation.

> *We already had a vision before we went to the village, but we had to do the overturn when we arrived. Although from the results, it seems more efficient to do the field research before we have design ideas. But this approach is innovative. In fact, it gets more content than I imagined. It will instead give insight into a lot of things, you go to the village immediately, although the problem you met in the village might be very real and the amount of information is relatively large, you may lack a lot of possibilities. (Participant, C4)*

> *This project is directly communicable with the locals, it feels very grounded, and when we were overturned in that direction in the early stage, I was a little bit happy at that time, because this is the right taste, the front is a little bit fake, big and empty. (Participant, C1)*

5 Discussion

This research focuses on the opportunities and limitations of online and offline collaboration. While the pandemic brought discussions about remote collaboration to the forefront, the focus tended to be on entirely online collaboration. This research aims to explore potential online and offline collaborative approaches that consider whether it is possible for designers to collaborate with local communities without being on-site in the villages. This would allow more designers to contribute on a part-time basis even if they are living in an urban area, and it would provide a sustainable long-term path of collaboration that is not interrupted when the designer has left the local area.

In the previous analysis, contrary to the assumptions made at the beginning, the time and situation for offline teams to find design entry points and make decisions was more complex than expected, and their use of the online collaboration platform provided was low, they were more accustomed to placing documents directly on the online whiteboard and lacked the habit of organizing them, which could also be due to time constraints.

Additionally, there are other questions that emerged during the practice process which were not anticipated but could be considered in future research.

5.1 The uncertain feeling during remote collaboration

Because of the divide between online and offline, as the author mentions before, issues about Because of the divide between online and offline, as mentioned above, issues about information transmission emerge. Furthermore, the uncertainty caused by the problem of information transmission has a negative impact on the online participants. This uncertainty affects team collaboration and infinity conflict. The offline participants have an icebreaker workshop when they are in the village, which helps them feel more like a group, and with face-to-face touch, they can exchange more information during their daily life in the period of field research. On the contrary, despite having a kick-off meeting at the beginning for all participants, online participants can easily feel disconnected from the team due to the lack of bonding with offline team members after the program started, or offline participants forget to update online participants in time, resulting in a disconnection in information flow. How can online participants be involved in the teamwork, decreasing their uncertain feeling during the collaboration, and help team members be flexible to face their responsibility, could be a possible focus for future research.

5.2 With or without service design tools

Participants who are unfamiliar with service design tools may get bogged down in formality when asked to use unknown methods. There are times when service design tools can also thwart creativity. In filling out templates, participants may ignore their objects at the beginning, and instead focus on how to make a beautiful service blueprint or a good persona. Furthermore, as Vink mentioned, the use of service design thinking and the tools can be somewhat colonialist (Vink, 2022). Therefore, in the face of localized service design practices, focusing on how service designers use service design tools avoids the formalistic dilemma that participants in such projects fall into due to the large number of templates, and stimulates participants to come up with solutions that are more creative or deeply integrated with the local context.

5.3 Limitation of research design

This research discusses the possibility of adapting remote collaboration into service design projects for social innovation. There are two main limitations of this research. Firstly, the program's duration is short. The project is only one month, and it gives participants a potential feeling of urgency, they get confused or fall into formalism from tools, especially the ones with low experience of service design. Participants lack bonding time in entering a new team. These elements may influence their team collaboration and the completeness of their final service design outcomes. In addition, the final implementation and impact of these outcomes lack tracking. Secondly, the author only interviewed 24 participants, which did not include other stakeholders' perspectives such as the locals, online flight lecturers, offline supporters, events assistants, and online think tanks, etc. To complement this limitation, possible future studies can focus on the following implication stages in the process and add interviews with other stakeholders to add a different perspective.

6 Conclusion

This research represents an investigation on adopting remote collaboration in service design projects in the villages. Furthermore, opens a discussion about the possibility to introduce online and offline

collaboration in service design projects for social innovation. Through an experiment and interviews with coding analysis, the opportunities and limitations of service design through offline and online collaboration, and how designers engage in service design projects in the village through collaborating offline and online are revealed.

The positive perspective of online and offline collaboration was found: 1) a diverse team composition can help to deal with complex environments in social innovation; 2) more stakeholders as external resources can participate in the design process beyond the geographical boundaries to support the local social innovation.

The negative perspective focuses on the limitation of information transmission, which is: 1) The form of information exchange is single and concentrated on the approach of online meetings; 2) the lack of completeness of information transferred from offline to online, i.e.the offline first-hand experience cannot be replaced by oral narrative, images or videos. In addition, online designers, who do not have the means to experience offline research visually may generate "subjective plotting" based on their cultural background and similar experiences in the past.

Furthermore, after defining codes emerging from participants' interviews, these were themeticed to clarify the contribution and roles of online and offline participants in the collaboration in service design projects and summarizing the performance of the participants from offline-to-online collaboration process and vice versa. Online participants can help offline participants in the collection of additional information and the organization of information. In addition, the online participants can provide more creative viewpoints to help offline participants escape the constraints of encountering the onslaught of the local context. Meanwhile, offline participants are the eyes of the team. The teams' design outcomes are more relevant to the needs of the local context with the contributions from their field research.

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