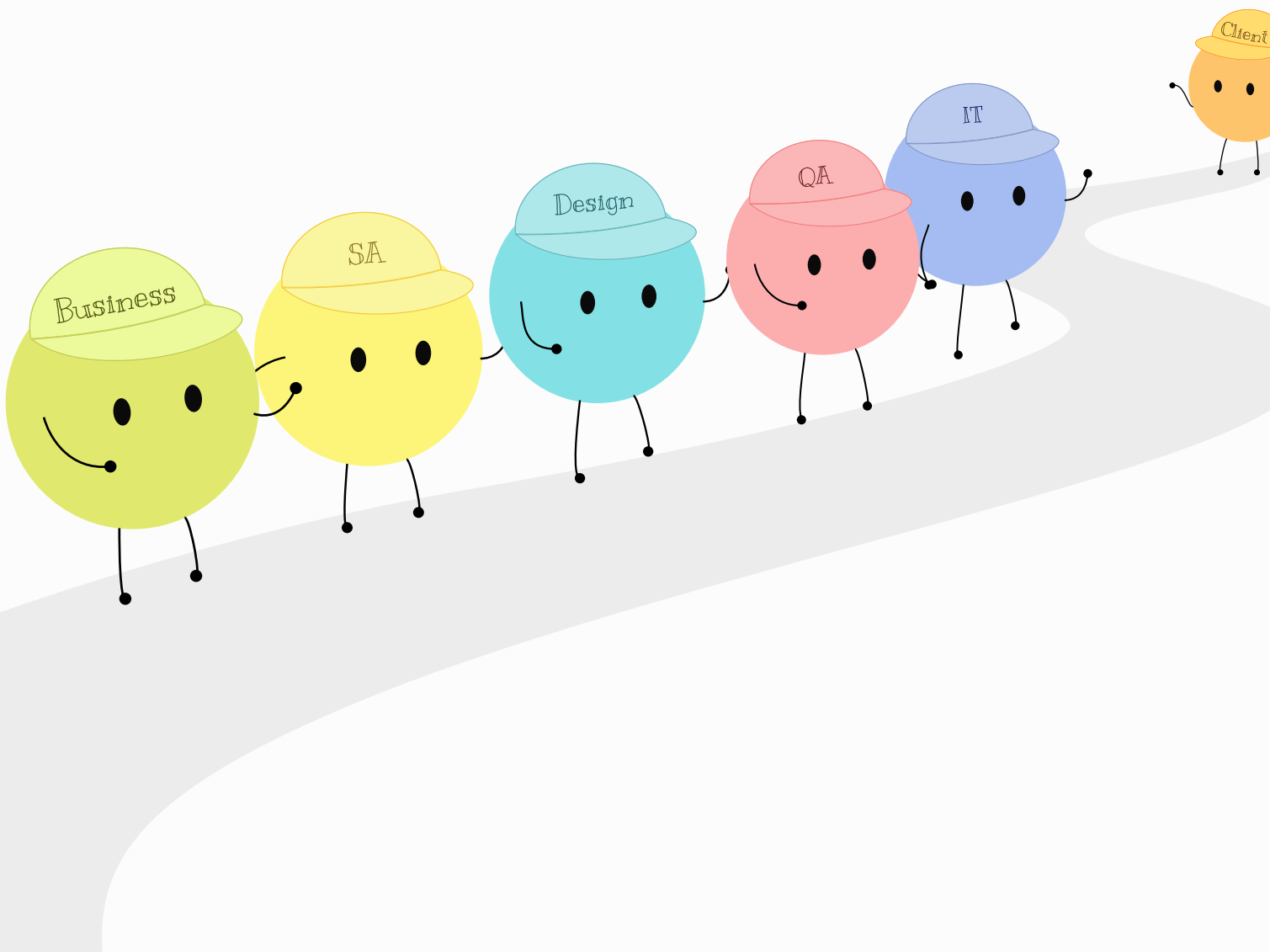# Project Journey Embassy

Foster the continuity of multidisciplinary collaboration in an IT consulting service towards problem-solving innovation

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Master Thesis for MSc. Strategic Product Design
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Preface

Embarking on this graduation project has been a journey filled with invaluable experiences, self-discovery, challenges, and moments of pride. It symbolizes my growth and transformation as a learner. And I would like to take a moment to reflect on this incredible undertaking.

First and foremost, I want to express my deepest gratitude to IDE and my two dedicated supervisors, Giulia and Katrina. Their professional coaching and insightful feedback have been instrumental throughout this journey. They not only understood my aspirations but also provided me with the constructive criticism I needed to excel. I am truly fortunate to have had the opportunity to learn from such compassionate mentors.

I would also like to extend my heartfelt appreciation to my client, LINKIT, for providing this precious opportunity for me. Thanks to Maaike, whom I first contacted at the time when I was desperate searching for a graduation project related to the topic of multidisciplinary co-creation. Our story began at the Connect2Create conference organized by Katrina last year. We engaged in stimulating discussions on co-creation and innovation. When I reached out to Maaike with my project proposal, her enthusiasm and support were overwhelming. She not only facilitated this collaboration but also offered invaluable insights and guidance for the project and my personal growth.

Special thanks go to my client mentor, Jimmy, who played the role of both a supportive boss and a great companion. His feedback and assistance were crucial during the project, and his personal experiences provided me with the motivation and encouragement to persevere. Notably, he even came to pick me up at the station when I was stranded due to a NS train cancellation :p I will always remember with appreciation and a touch of humor.

Finally, I want to acknowledge the unwavering mental support of my beloved parents and close friends, who has been standing by me throughout this journey. Their encouragement and understanding were my pillars of power, and I am incredibly grateful for their enduring love.

This graduation project has been a remarkable chapter in my life. And I'm eager to share the knowledge and experiences gained. It's a strong proof to the power of collaboration, mentorship, and determination. I hope this work resonates with others on their own paths and encourages them to embrace every opportunity for growth.

For anyone who is reading this report, hope you enjoy it :)

Tongshu
October 2023

Summary

The application of multidisciplinary collaboration has become a trend to prevent knowledge isolation obstructing business development (Schaubroeck, Tarczewski, & Theunissen, 2016), particularly in the IT industry as it pursue problem-solving innovation.

LINKIT is a knowledge-driven IT service company, currently striving to transform into a trusted IT innovator. Despite having a full-functional workforce and the Project Journey model, it is challenging for LINKIT to sell and conduct problem-solving projects to their clients. Not every employee from various disciplines is ready for the multidisciplinary collaboration. **There is an essential need to have a continuous and concrete guideline for the multidisciplinary way of working (WoW)**.

The project went through a variant Double Diamond process. The initial assignment was to mitigate the potential misunderstanding between different disciplines. After the generative design research to investigate the context and identify problems, the researcher concluded with a **reframed problem as "improving the continuity of multidisciplinary WoW in project practices"**.

The conceptualization process commenced with two co-creation workshops involving frontline workers. Subsequently, the solution is refined based on the insights from previous research and feedback during the sessions. The researcher also drew inspiration from established literature, such as the classic RACI model for multidisciplinary project management and the organizational change management model Plan-Do-Check-Act (PDCA). The final solution comprises three components:

Project Journey Blueprint, a multidisciplinary WoW framework (figure 1)

The researcher outlined seven factors of the multidisciplinary WoW framework in a service blueprint format. Project Journey Blueprint is more concise, intuitive, and actionable than RACI matrix. It reinforces a value-based illustration, reducing misunderstandings between different disciplines and fostering a more efficient and effective multidisciplinary collaboration.
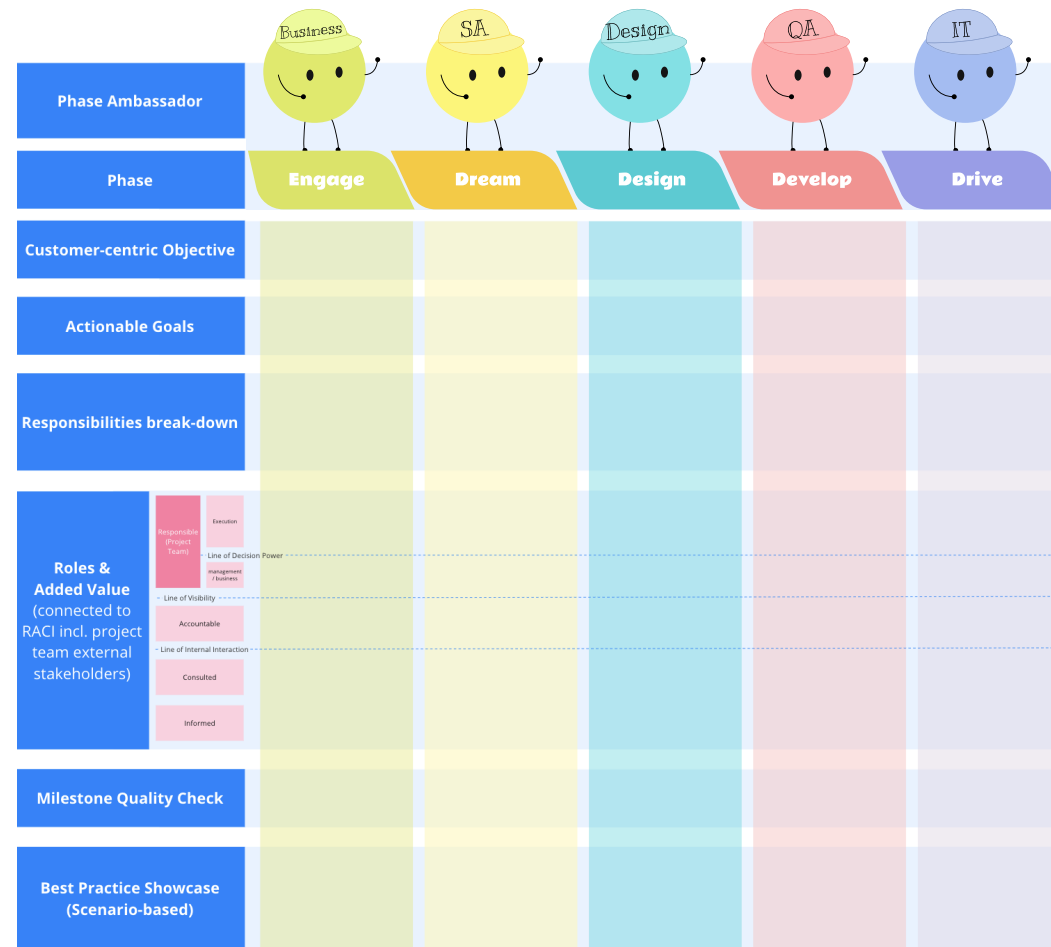
Project Journey Embassy, a co-creation toolkit for developing multidisciplinary WoW guideline (figure 2)

The researcher developed a toolkit with the aim of evoking ownership and mutual understanding. It includes a generative workshop within each discipline and an alignment workshop across disciplines, resulting in a consensus on multidisciplinary WoW guideline, including the ideal team configuration and minimum viable team (MVT).
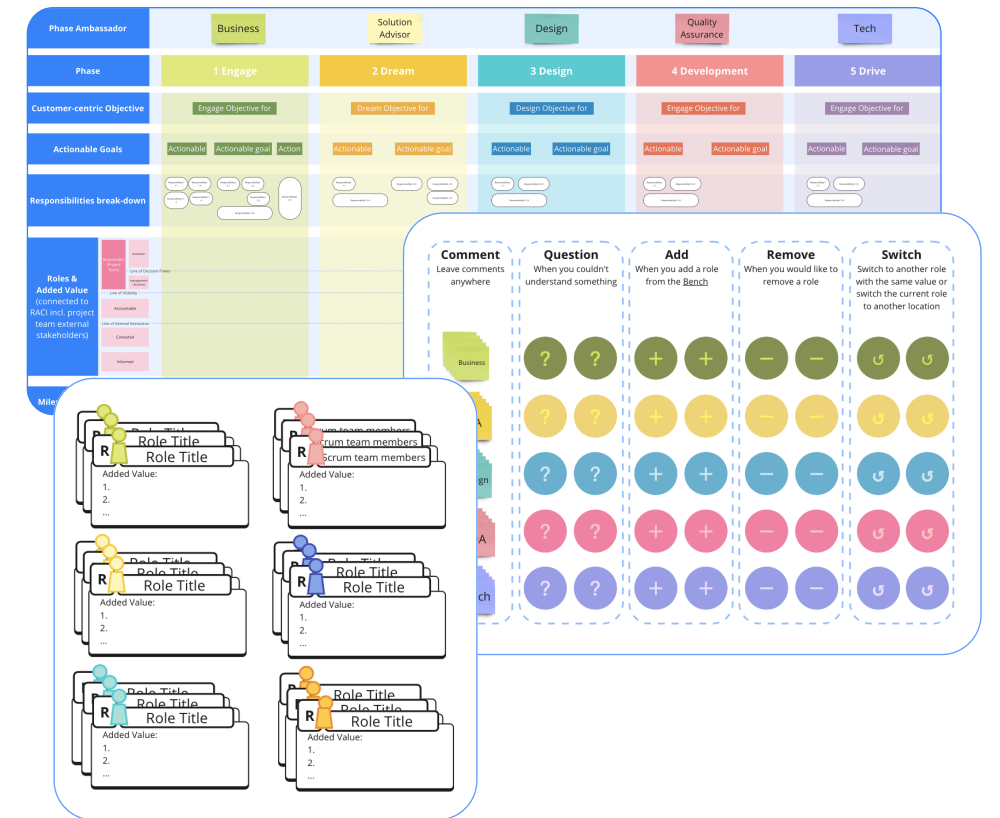
A three-stage implementation approach to bridge the guideline into practice

The process begins with bottom-up co-creation, followed by organizational-level PDCA, where Project Journey Blueprint is executed and refined quarterly. The third stage extends the second, focusing on project-level PDCA with insights reported to discipline ambassadors and discussed in organizational 'Check' moments. It is an ongoing cycle which ensures resilient continuity of the multidisciplinary WoW.

Figure 1 Unfilled Project Journey Blueprint

Figure 2 Project Journey Embassy toolkit

Content

Chapter 01
Introduction

In this chapter, you will find the background of the project, including initial problem and assignment, the client introduction, and the approach for the project structure.

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1.1 Significance in the industry

It has become a trend to see experts from multiple domains collaborating in the business context to prevent knowledge isolation obstructing business development (Schaubroeck, Tarczewski, & Theunissen, 2016). Many big companies have built up internal incubators composed of employees from diverse functions dedicated to boosting innovation for constant business growth through co-creation apart from mainstream organizations (O'Connor, & Demartino, 2006). Some like Philips even publish their own methodological models to guide co-creative innovation among multiple disciplines (Figure 1.1).

However, it can be difficult to achieve a seamless collaboration among various disciplines and perspectives throughout the processes. Misunderstandings or even conflict among different functions become one of the biggest obstacles, which could be intervened on the strategic level and operational level (Mele, 2011). The value of co-creation facilitating such multidisciplinary collaboration to accelerate and promote innovation (Leavy, 2012) has been approved in academic research and professional practices. Nevertheless, companies do not always have proper in-house professionals in the role of multidisciplinary team management or co-creation facilitator, especially those who claim to be technology-driven. There's a broad demand for hands-on guidelines and toolbox for anyone who is in the position of process facilitator without the pre-existing expertise for such organizations.
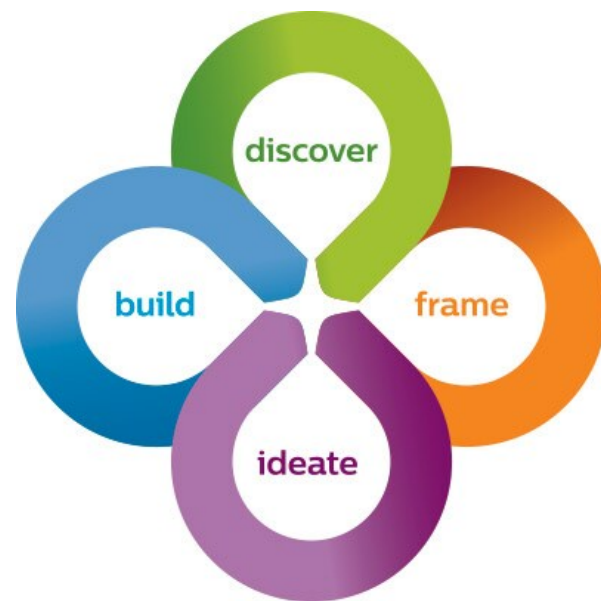

Figure 1.1 Philips CoCreate Approach

Previous studies have described product development in IT industry as a knowledge-intensive process (Iansiti, & MacCormack, 1997) upon multidisciplinary collaboration (Schuh, Riesener, Mattern, Linnartz, & Basse, 2018) including IT, business, design, management and so on. Different stakeholders stand on different points to explain the meaning of a certain 'value' and apply influence on the value effectiveness, resulting in different comprehension when it comes to the same object (Lindgreen, & Wynstra, 2005).

For instance, one of the widespread problems is the mutual misunderstandings between IT and business disciplines. Technical experts feel misunderstood by the business stakeholders about the solution they propose, while the business side may perceive IT perspectives as lacking proven business value (Wagner, Beimborn, & Weitzel, 2014). Similar types of misunderstandings also occur between other disciplines. People from different functions within the same organization have difficulties in communicating with and understanding each other, because they're not only trained in different languages and value basis, but also positioned for different purpose (Blackwell, Wilson, Boulton, & Knell, 2009). It is normal to see professionals of different disciplines work in silos, especially in big organizations. Therefore, substantial efforts to develop shared value and culture in the multidisciplinary environment are needed to make divergent opinions regarding value-in-use compatible in order to achieve seamless interaction between different disciplines (Aarikka-Stenroos, &Jaakkola, 2012).

One of the possible reasons for these misunderstandings is no shared vision on a future-proof landscape and failing governance across disciplines. Besides, the value of establishing a well-designed management approach to improve service development process is often underestimated in IT business (Heskett, 2009). By facilitating the joint collaboration among various disciplines, this can bridge the gap between IT and other disciplines, helping to build a shared vision and mutual understanding of each other's value.

1.2 LINKIT: vision, approach, and gap

Strategic vision

LINKIT is a knowledge-driven company specializing in solving IT challenges for their clients. Founded 25 years ago, LINKIT was initially a sourcing company delivering required professionals to work for their clients. Over time, LINKIT has evolved into a multidisciplinary company with a full range of functions geared towards IT innovation. Currently, LINKIT is undergoing a transformation with a focus on selling problem-solving projects with cross-functional teams. In addition, innovation has been written into one of the three strategic pillars. Accordingly, all the employees at LINKIT are given the name of 'explorers'. LINKIT envisions becoming the 'trusted IT innovator' and the IT partner for customers.
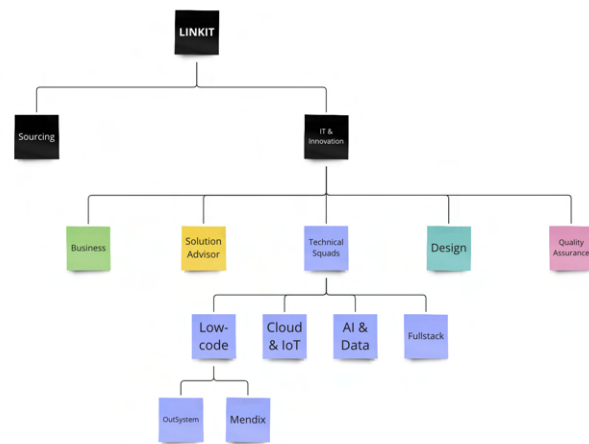
Approach: Project Journey

The IT&Innovation division was set up for solution consulting projects, comprising four technical squads and other functional teams including business, design, quality assurance (QA) and solution advisor (SA) (Figure 1.2). They have developed a co-creative innovation approach namely Project Journey (Figure 1.3) to combine Design Thinking (Camacho, 2016) and agile methodology Scrum. Project Journey is aimed to illustrate how a multidisciplinary team can work together to provide a holistic solution to clients' IT problems.

The 4Ds (Dream, Design, Develop, Drive) represent the core of the Project Journey, and these are the phases where LINKIT delivers its services. In contrast, the

Engage and Enhance phases are part of the sales cycle where LINKIT aims to acquire customers and secure business. The Project Journey aims to enhance comprehension among business users and other client-side stakeholders while accelerating value delivery. This is supposed to achieve through clear goals and tasks in each phase and a seamless multidisciplinary collaboration between them. Clients often come to LINKIT with a problem for which they have a preconceived solution in mind. To challenge that for innovation, LINKIT wants to start from a Dream phase to explore the real problem behind the request and/or a Design phase to validate assumptions and potential solutions before going directly into development phases Develop and Drive.

Apart from the Project Journey, LINKIT employs the Scrum framework in its project organization approach. Scrum is a widely used agile methodology prevalent in project management, particularly in software development. At the end of each sprint, there is a sprint retrospective to reflect on performance in the process and make improvements for the next sprint. The Scrum processes are safeguarded by a professional role as a 'Scrum Master'. LINKIT adapts the standard Scrum framework as needed, ensuring transparent and collaborative manner when delivering value to customers.

Gaps

While the ideal scenarios seem to be promising, most projects at LINKIT now are still sold as part of Development phase. The earlier stages are either missing or partially covered. Consequently, the multidisciplinary collaboration may not work in the way as LINKIT aims for. In addition, the project members are temporary mixed up with multi-function employees from both LINKIT and their clients, bringing difficulty to manage the project in line with the ideal way of working (WoW) from LINKIT side. Therefore the management personnel and the conducted WoW in practice could be different from project to project. These gaps make it challenging to execute a coherent multidisciplinary WoW among different projects at organizational level.

Figure 1.2 LINKIT IT&Innovation sturcture

Figure 1.3 Project Journey

1.3 Project brief

Problem as Given (PaG)

The LINKIT IT&Innovation division wants to improve their earlier involvement in the problem-solving process for new projects. **In order to foster a more efficient and effective multidisciplinary collaboration, LINKIT is in an urgent need to mitigate the potential misunderstandings among different disciplines (PaG)**.

Assumption

LINKIT believes that such a problem could be tackled by early-stage co-creation among these multidisciplinary stakeholders to generate a shared project vision and mutual understanding of the value of each other. But there are currently no specific steps or methods to coordinate these activities. Although Solution Advisor team perceived themselves as the overall leading role of a project from LINKIT side and takes ownership to bridge all kinds of gaps, the actual responsibilities and working methods could greatly differ among projects depending on different people in charge, which takes much extra time and effort to coordinate. Thus, **LINKIT needs to have standard guidelines and corresponding tools to support the responsible personnel in facilitating multidisciplinary co-creation during this process**.

Assignment

This project will explore the current multidisciplinary collaboration practice at LINKIT IT&Innovation division, with a focus on identifying problem(s) during the process, especially regarding the value misunderstandings of different roles within a project team. It also seeks to propose solutions to enhance the multidisciplinary co-creation during early stages of Project Journey.

1.4 Project approach

The researcher implemented a variant Double Diamond approach (Nessler, 2023) throughout this project (Figure 1.4).

The project started with a 'discover' phase. After debriefing with the client LINKIT to align focusing topic of multidisciplinary collaboration underlying Project Journey (PJ), initial problem (PaP) and assumptions, a round of literature review was conducted to confirm the problem significance in the industry. Besides, the researcher acquired sufficient information about multidisciplinary collaboration practices at LINKIT by exploring the company context through a generative contextmapping research.

With the findings from the research, a series problems regarding multidisciplinary collaboration were identified and mapped out in a rational structure. From there, the initial problem and potential outcome were reframed in the 'define' phase. The solution was three-fold, including a generic multidisciplinary Way of Working (WoW) framework, the detailed Project Journey guideline integrated with roles and responsibilities, and means for solution adoption in the organization.

The design process then started with a 'develop' phase, where a second round of literature research was conducted to get inspiration from successful cases to promote the solution. Meanwhile, the researcher applied co-creation workshops with 'end users', which is LINKIT frontline explorers. The design outcome was then refined as a multidisciplinary WoW framework, a co-creation toolkit for PJ guideline generation, and an implementation approach. From the observation during the processes and conclusions of each previous phase, the design criteria were summarized.

To deliver an applicable design, each part of the solution was developed followed by fast validation and iteration. In addition, a simulated group session was carried out to test the final design. Based on the assessment from participants, the researcher concluded with some recommendations for future development and implementation.

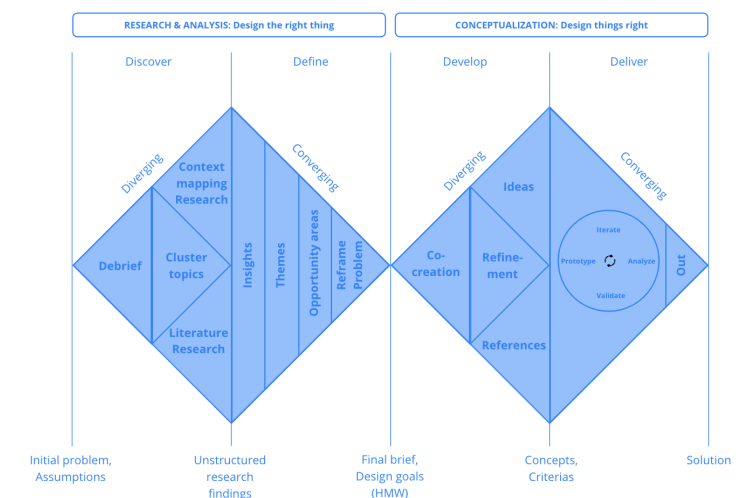*Figure 1.4 Variant double-diamond project approach*

Chapter 02
Design Research

A design research was carried out to explore the context of LINKIT solution consulting business and reveal the real problems related to multidisciplinary collaboration. In this chapter, the research execution process will be presented in details.

2.1 Methodology: generative research and contextmapping techniques

Just like how LINKIT would like to react to their clients' request, the Problem as Perceived (PaP) could be different from the Problem as Given (PaG). Given the 'fuzzy front end' of this project, it is important to carefully investigate the problem's context, which is built on the experiences of the people involved in that context (Sleeswijk Visser, Stappers, Van der Lugt, & Sanders, 2005). This investigation is crucial to understand the context and verify the real problem(s). It is apparent that the first-hand information will come from the explorers who are working at LINKIT and having the multidisciplinary collaboration on their daily basis. Thus, generative research and contextmapping techniques were applied to mitigate potential bias from the researcher's personal assumptions.

Generative research is a qualitative design research method to bring the people served by design directly into the early design process in order to empathize their needs and dream into the future (Sanders, & Stappers, 2012). In this project, the explorers from LINKIT are the expert of their own experience working for IT consulting projects. The contextmapping techniques were used to make participants aware of their experience and reveal their latent needs and tacit insights about the context (figure 2.1) (Sanders, & Stappers, 2012).

Sleeswijk Visser et al. (2005) defined a 5-step typical research process of contextmapping (figure 2.2) including preparation, sensitization, sessions, analysis and communication. The sensitization is a 'make & say' assignment prior to the session which help participants to recall memories and reflect on their past experiences. This will get them prepared for the further questions and latent thoughts exposed in the following sessions. It's also a tool to bridge participants from current and past experiences to think towards the future. The session in this project was reformed into 1v1 semi-structural interviews on the basis of the sensitizing materials generated by participants. After the qualitative data analysis, conclusions of the research as a mapping overview of the context and reframed problem (PaP) will be communicated to the stakeholders and brought into the design conceptualization phases.
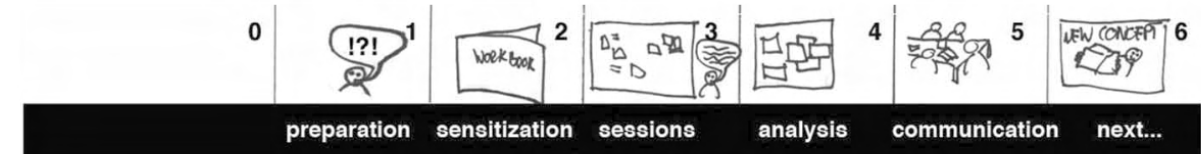
Figure 2.2 Contextmapping process (Sleeswijk Visser et al., 2005)
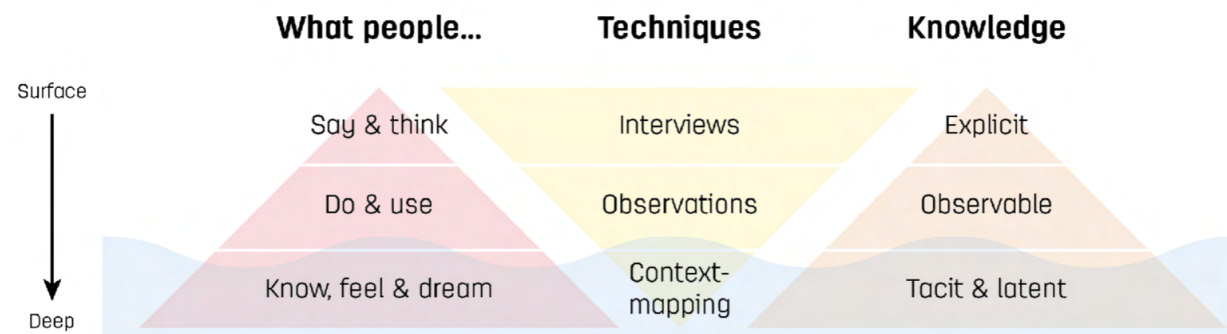
Figure 2.1 Methods that help across different levels of knowledge (Sanders, & Stappers, 2012)

2.2 Preparation

Research goal

Three research goals derived from the original project brief:

1. Identify roles in a project team and cluster the disciplines
2. Mapping the current way of working (WoW) about multidisciplinary collaboration throughout Project Journey
3. Recognize problems occurred during the multidisciplinary collaboration practices, especially the ignored and/or misunderstood value between disciplines

Preliminary research

Before the generative research, a round of preliminary research including documents investigation and informal interviews was conducted to formulate a general understanding of the current context and plan for the following research. As a result, five disciplines in the IT consulting business (i.e., LINKIT IT&Innovation division) were identified and color coded (figure 2.3): Business in green, Solution Advisor (SA) in yellow, Design in blue, Technology (Tech/IT) in purple, and Quality Assurance (QA) in pink.

Apart from the 5 internal disciplines as key stakeholders, external roles from the clients like Product Owner (PO), Business Analyst (BA) and so on may also closely collaborate with LINKIT explorers. They are also considered as part of the project team. Consequently, a separate 'discipline' namely 'Client' including important external stakeholders was framed for this research.

Figure 2.3 Six defined disciplines and containing roles

LINKIT refers to a functional team consisting of individuals with a certain type of expertise as a 'squad'. Each time a project was set up, a project team composed of explorers of relevant disciplines would be assembled temporarily from different squads. An essential finding at this stage was that the roles in the project team may be different from the job title at the organizational level. The same person with an established job title could be positioned as a different or even multiple roles in the projects. For example, a Solution Advisor is sometimes playing the role of Project Manager in the project besides Solution Advisor work (figure 2.4). Hence it's more rigorous to use the role title and the corresponding discipline of that role rather than the job title when referring to an explorer who has contributions to a project.
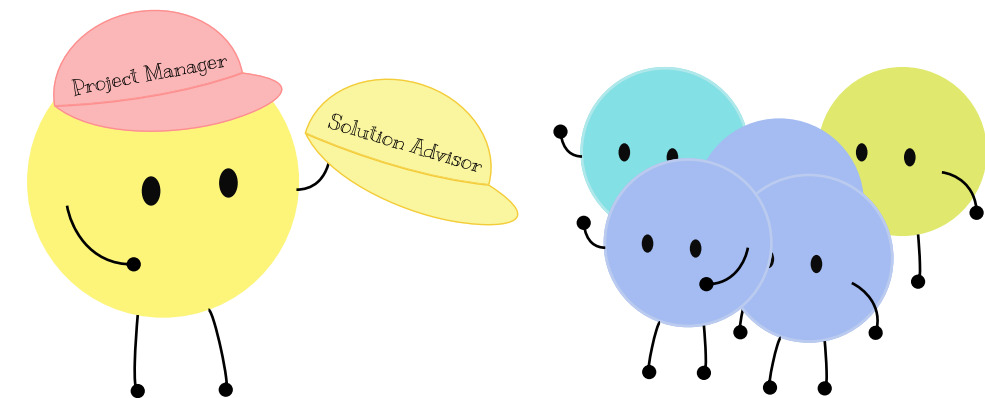
Figure 2.4 A Solution Advisor playing double roles in a project team

In general, a project team comprises personnel temporarily assembled from LINKIT explorers and the client's daily involved stakeholders, collaborating under LINKIT management throughout a specific project.

The LINKIT delivery manager has created an elaborate standard table (figure 2.5) that outlines every step throughout the Project Journey and provides detailed assignment of responsibilities adhered to the RACI model (Jacka, & Keller, 2009) for each step. During the preliminary research, an assumption of the ideal project team configuration (figure 2.6) contributing to a project during each phase of Project Journey has been mapped out according to this RACI matrix. Each discipline is supposed to take the ownership of leading one phase where they contribute the most.

Despite having a general overview about the distribution of each subject within Project Journey, the consistent mechanism of the multidisciplinary collaboration at the organizational level remained undisclosed. Additionally, the research has revealed that **not all individuals within the organization possess a comprehensive awareness of the complete spectrum of disciplines and how others work**. The veritable existence of multidisciplinary collaboration, along with its extent and effectiveness, remained ambiguous. Therefore, further comprehensive research is needed to understand the current status of multidisciplinary collaboration within the LINKIT and to identify any associated issues.

Figure 2.5 LINKIT RACI table created by Delivery Manager
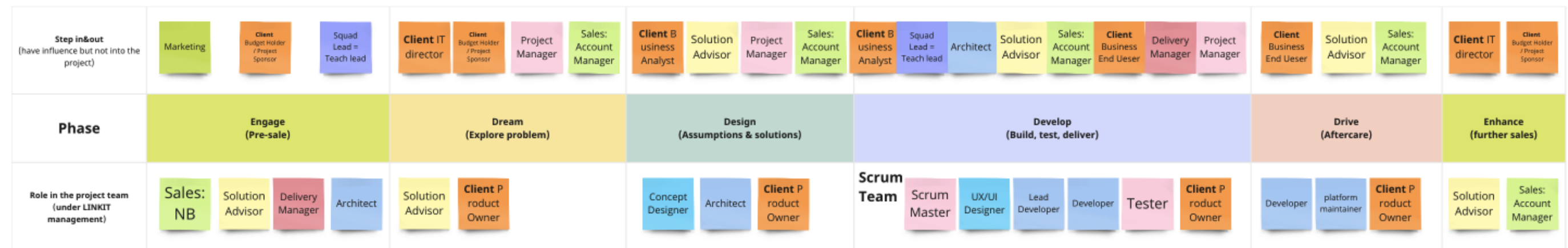
Figure 2.6 Ideal Project Journey team configuration

Scope and Focus

The preliminary research also revealed that this project was facing a relatively complex context. The IT&Innovation division and sourcing business division at LINKIT actually overlap in the organization's structure, as does the workforce. So it is important to reinforce the scope and focus of this project to exclude irrelevant information from participants.

The scope of the research is delineated as follows:

1. Research only the innovative **solution consulting projects** where LINKIT IT&Innovation focuses on and would like to grow and expand in the foreseen future, i.e., Low-code projects & relevant squads (Business, SA, Design, QA, OutSystem and Mendix squads). Exercise caution in discerning and excluding information related to sourcing business that participants mentioned.

2. Explore roles and processes '**under LINKIT management**', i.e., phases defined within Project Journey starting from contract signing and team setting up until project officially closed. Previous research indicated that sometimes external stakeholders are leading and managing the projects. In such cases, LINKIT was not capable to steer the project teams in adhering to the LINKIT WoW. Thus, projects of this nature which is not under LINKIT management lack relevance as points of reference for this studies.

3. Investigate in responsible roles closely collaborating within **project team**. Those who step in and out for support during the project were not seen as part of project team, and hence less relevant.

The focus of the research is on:

1. 'WoW' instead of project 'contents' or 'deliverables'

2. 'Roles' instead of specific 'personnel' or 'individual'

3. 'Responsible' instead of 'accountable' roles
   It means that participants of this research are people who deeply participated in and conducted projects, and closely collaborated and interacted in the project team.

Recruitment

The most fundamental aspect of participant selection lies in identifying individuals with multidisciplinary project experience within the context of consulting business. This approach ensures the acquisition of adequate and pertinent insights.

Ultimately, a total of 11 participants were selected from the 6 distinct disciplines (figure 2.7). Among these, two participants were chosen from each of the five internal disciplines, and an additional participant represented external client stakeholders. For the sake of anonymity, all participants are denoted by assigned codes (number 1 to 11) throughout the project.
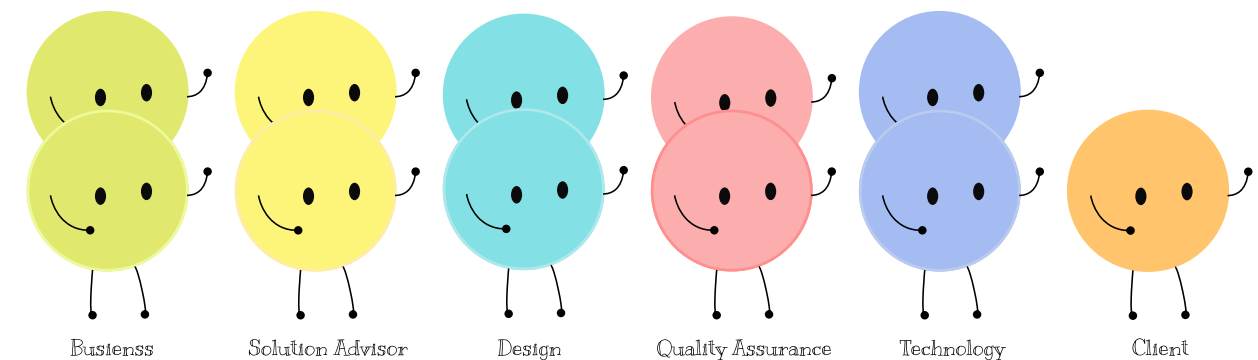

Figure 2.7 Participants demographics

2.3 Sensitization

Sensitizing toolkit

In this project, the sensitizing toolkit took the shape of an interactive booklet that participants were asked to fill out on Miro, an online collaborative whiteboard. This format was well-suited because the participants' organization (LINKIT) has been accustomed to hybrid work, making them familiar with online collaboration tools. As a result, this approach not only saved time but also reduced the barriers for them.

As people are the expert of their life (Sanders, & Stappers, 2012), the sensitizing toolkit was designed to reveal their experiences to the researcher by themselves. The booklet's contents primarily centered on examining the present (potential multi-layer) roles undertaken by the participants at work, and conducting retrospectives on prior experiences associated with multidisciplinary collaboration in doing projects. When they come to the session afterwards, they would have deeper recalled memories and more detailed responses leading to their latent pain points, needs and hope.

Thus the main goal of the sensitizing booklet was "**to reflect on actual practice about multidisciplinary collaboration at work, and map out perceived current WoW in project teams and collaboration status among team members**".

In order to unfold participants memories about the research questions, the sensitizing toolkit was designed with four step-by-step exercises in respective purpose. Participants were suggested to fill in the booklet at one-time in the designed sequential order from 1 to 4. The four exercises were designed following the principle of 'from the easy to the complex' and 'from surface to the deep' and each one was built upon the previous step. More details will be discussed in the following paragraphs (also see Appendix 2).

Figure 2.8 Sensitizing booklet on Miro board

1 Personal Profile | Identify multi-layer roles of and around you in a recent project.

The first exercise aims to assist participants in developing an overview of the roles

themselves and their collaborators assumed on in a recent, specific project by revisiting it. They were also forced to identify different layers of roles (if applicable) they were playing as this phenomenon was highly noticeable in the previous research.
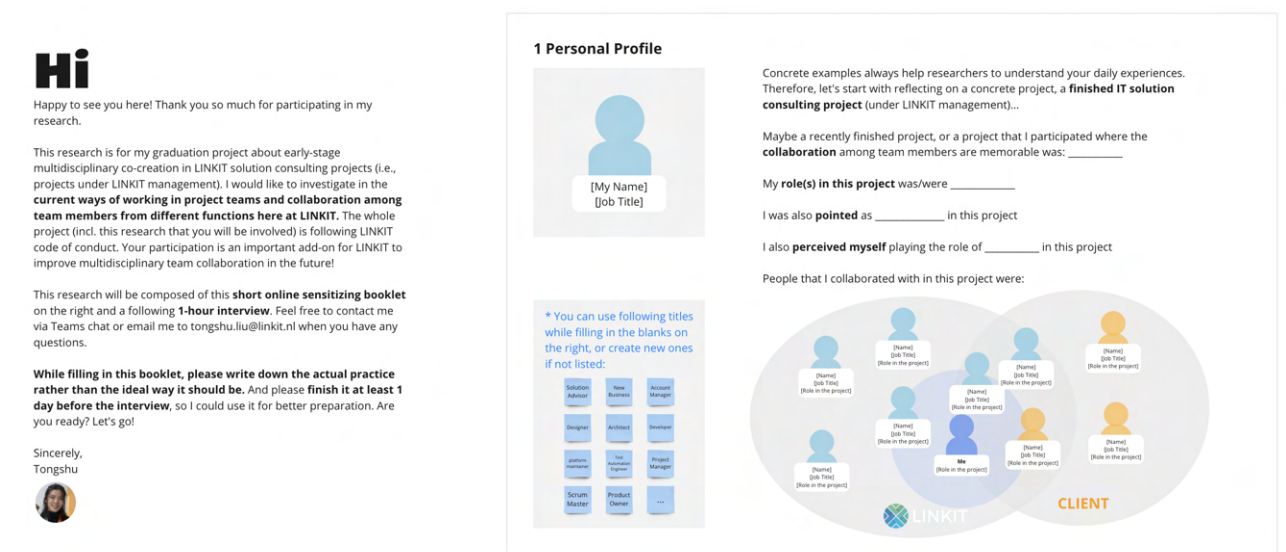
Figure 2.9 Sensitizing booklet exercise 1

2 Project Process Map | Recall memories on the entire project process and key moments about multidisciplinary collaboration.

The objective of this task is to encourage participants to carefully recall the entire project process, from its initiation to completion, and to reflect on the issues or enablers of current multidisciplinary collaboration that emerge during the processes. these firsthand impression can unveil the most authentic challenges, including any misunderstandings or biases, which are integral aspects of the problem.

3 Reflection on Collaboration | Scenarios: Reflect on previous positive and negative experiences on multidisciplinary collaboration during project practices.

The purpose of it was to guide participants in conducting a more in-depth review on scenarios where either negative or positive collaborations occurred. With the help of a series of questions from various angles, participants not only provided detailed descriptions of the blockers or enablers but also connected these practices with the value of certain roles and gained deeper, reflective insights into the future.

2 Project Process Map

What phases did you go through during this project? Could you map them below?
(Feel free to shuffle the phase cards)

What are the critical moments when there's a blocker/issue or accelerator/enabler
about collaboration or way of working during the project? Map out on the timeline.

Phase 0	Phase 1	Phase 2	Phase ...	Phase n
Project selling & contract sgining	[Title / Description]	[Title / Description]	[Title / Description]	[Title / Description]

Put your figure where you showed up among these moments.

Figure 2.10 Sensitizing booklet exercise 2

3 Reflection on collaboration scenarios

Could you recall your previous experiences on the way of working among project members,
are there any other sharable blocker and/or accelerator moments **in other projects**?

Blocker/issue Scenario

When did it happen:

What happened:

How did you feel at the moment:

What roles were involved in this blocker:

Why it happened:

How it was solved & by whom:

What did you learn from it / What do you think could
be improved in the future:

Accelerator/enabler Scenario

When did it happen:

What happened:

How did you feel at the moment:

What roles were involved in this positive practice:

Why it went well:

What did you learn from it / What do you think could
be repeated in the future:

Figure 2.11 Sensitizing booklet exercise 3

4 Speak Out │ Express either reflections on the past or future-oriented ideas around the topic.

The last exercise is an open space where participants can note down freely any ideas triggered by the previous exercises around the topic of multidisciplinary WoW. As a bridge between the past retrospective and future prospects, these initial thoughts will provide directions to the researcher in adjusting the focus and certain questions formulation of the subsequent interviews.

4 Speak out

Do you have anything else to express or questions about multidisciplinary collaboration or
relevant topics? Feel free to leave any comments here❤️

Figure 2.12 Sensitizing booklet exercise 4

2.4 Session: semi-structured interview

Preparation

The interview script (Appendix 3) was crafted on the basis of sensitizing booklet and is organized into six sections, following the 'path of expression' (figure 2.13) (Sanders, & Stappers, 2012). It commenced with general inquiries about participants' current daily work, followed by a brief recap of recent ongoing projects. The subsequent sections involved a thorough and in-depth investigation of the past completed project and the practices suggested by the participants themselves in the sensitizing booklet. The interview concluded with discussions about desires and suggestions for future improvements.

The interview primarily revolved around multidisciplinary collaboration practices during project processes and the LINKIT WoW, particularly with regard to achieving alignment and including discussions on roles, responsibilities, and added value. Moreover, the entire script and the sequence of questions within each section are meticulously adhered to the principles of progressing 'from the simple to the complex' and 'from the concrete to the abstract'.
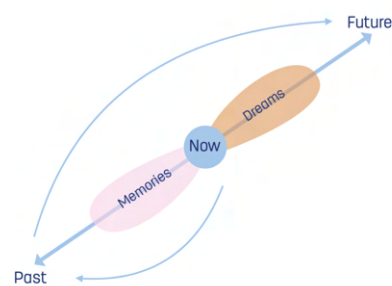
Figure 2.13 Path of expression (Sanders, & Stappers, 2012)

Implementation

After participants had reflected on their multidisciplinary project experience and completed the sensitizing booklet before the session day, one-on-one semi-structured interview sessions were conducted with each participant. Each interview script in practice was slightly revised based on the information generated by participants during the sensitization. According to the participants' preferences, interviews were conducted either online or in-person with a consistent basic setup. This setup included a quiet and well-lit one-on-one environment, recording equipment, the researcher's interview outline and notes, and a consent form. In in-person interviews, participants signed the consent form on the spot before the formal interview began (figure 2.14). For online interviews, the researcher obtained verbal consent at the outset and sent the consent form to participants via email for signature afterwards. Recordings were done to facilitate subsequent transcription and analysis of the interview content. The original recording files would be destroyed after the project finished.

Figure 2.14 Interview on site

2.5 Analysis

Accomplished 11 one-hour interviews, a considerable amount of messages were exposed, accompanied by latent insights. This section will introduce how the sufficient data was processed and analyzed into comprehensive and in-depth insights.

Transcription & statement cards

All the interview sessions were audio recorded and transcribed. A tool called statement card, as developed by Sanders & Stappers (2012), was employed to facilitate the process of data analysis, making the must-taken steps of interpretation and pattern finding become explicit. Each statement card (figure 2.15) consisted of three layers: an informational quote(s) extracted from interviews, a paraphrase or elaboration of the quote(s) in the form of a statement, and the researcher's interpretation in short accompanied by the color bond to identify the respective interviewee. Statement cards aid in the transition from raw data to information and, ultimately, to knowledge by clustering them subsequently (figure 2.16).
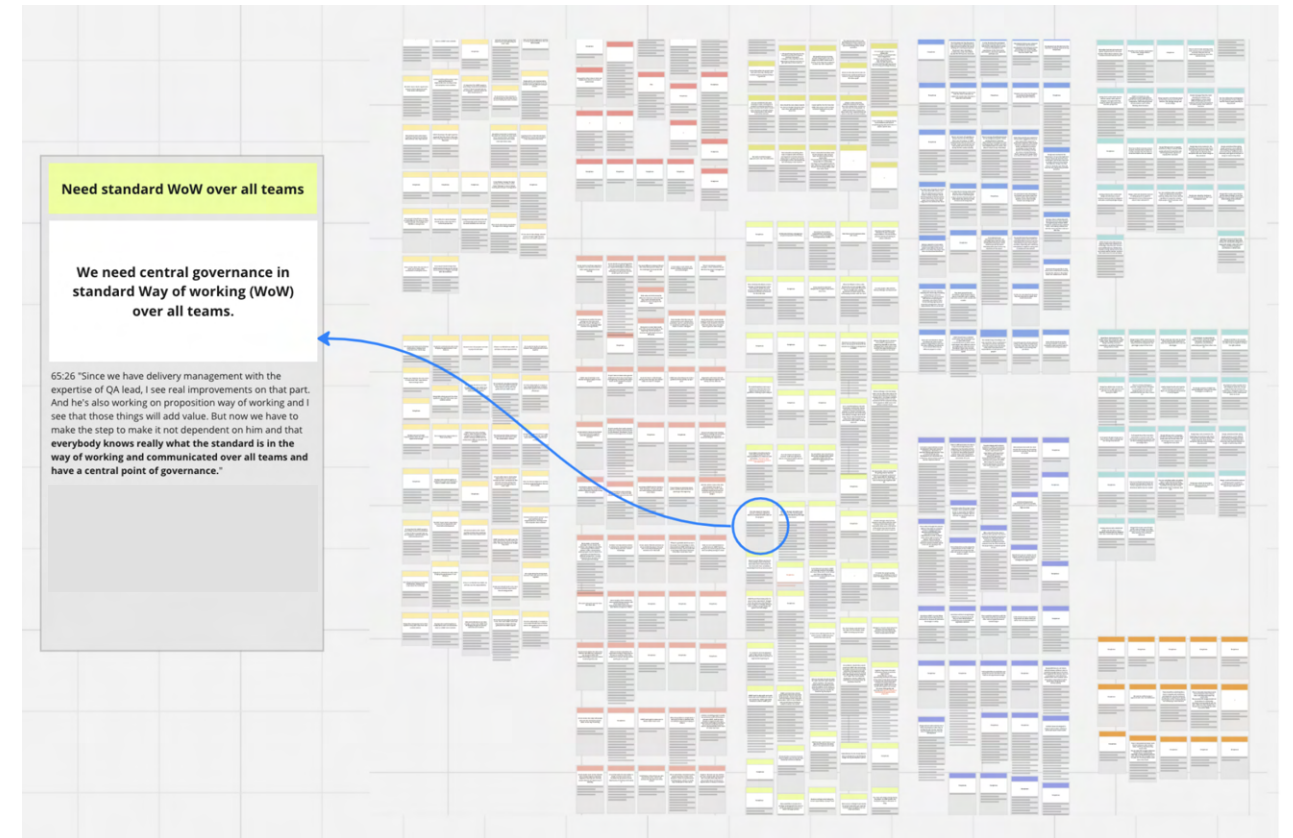
Figure 2.15 Statement cards
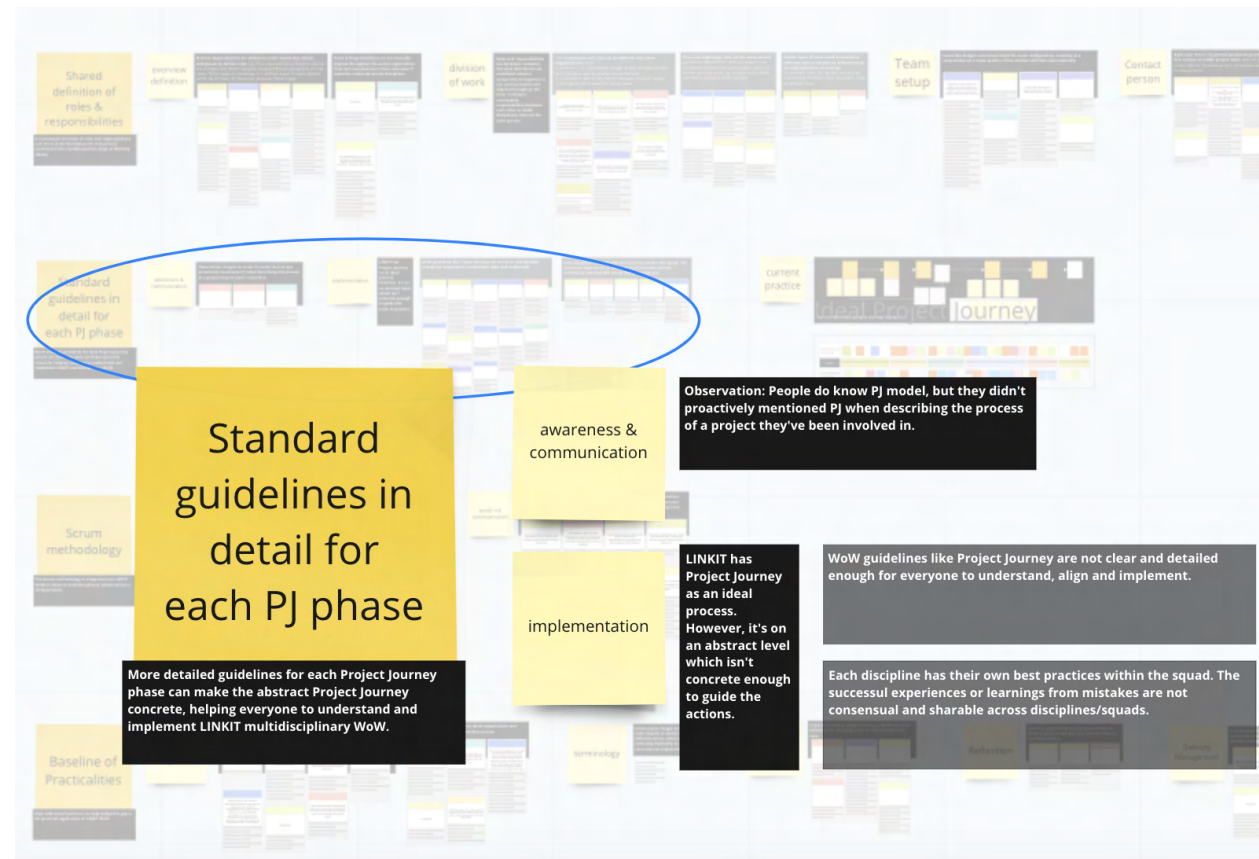
Figure 2.16 Cluster example

Clusters of insights

Once all the statement cards of 11 interviews were generated, they were shuffled and clustered into insights based on conveyed messages. Each cluster corresponded to an insight, and these insights were further grouped into different thematic categories. These categories were then reorganized to create a structural informatics overview (see conclusion in next chapter), assisting the researcher in deriving conclusions from the research. All the insights listed can be found in Appendix 4.

Chapter Takeaway

1. The main goals of the research was to map the current way of working (WoW) about multidisciplinary collaboration throughout Project Journey and recognize significant problems.
2. 5 internal disciplines including Business, Solution Advisor (SA), Design, Technology (Tech/IT), and Quality Assurance (QA) and an extra discipline as Client involved in doing project were identified during preliminary research.
3. Not all individuals within the organization possess a comprehensive awareness of the complete spectrum of disciplines and how others work.
4. A generative design research was conducted. Participants were required to fill in an online sensitizing booklet prior to the interview to recall memories on recent multidisciplinary collaboration. An in-depth interview was followed to investigate their complaints, latent needs, and desires.
5. Sufficient information were gathered and analysis with the help of contextmapping techniques developed by Sanders & Stappers (2012), resulting in a structural overview of categorized insights.

Chapter 03
Mapping the Context

The preceding chapter has introduced how the generative research was executed to investigate the project context. A comprehensive and detailed explanations on the structural findings of the research will unfold in this chapter.

3.1 Current workflow

While Project Journey is supposed to be a unified project procedure and one of the guiding principles for all explorers to follow, it hasn't got enough awareness and implementation in the practical experiences of the entire organization.

During the sensitization, participants were requested to outline the phases of a recently completed project. The researcher anticipated that the description of the process would naturally encompass the mention of Project Journey. However, on the contrary, none of the 11 participants referred to Project Journey or its predefined concept unless explicitly prompted by the researcher during the subsequent interviews. Nevertheless, the current practical pattern of project phases can be derived from the project timelines depicted by the participants, as illustrated in figure 3.1. Even so, some steps (illustrated in grey boxes) are carried out randomly and have not been documented as a recognized procedure on paper.
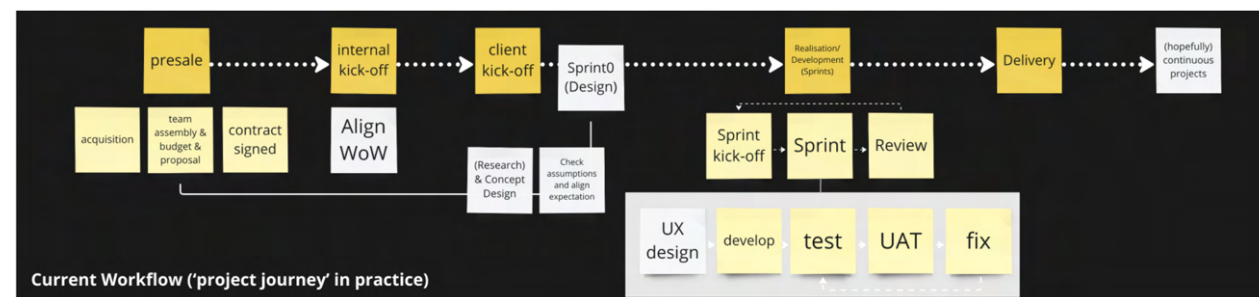

Figure 3.1 Current workflow of a project

In addition, data demonstrated the finding in the preliminary research that the majority of projects primarily focused on Develop phase. Design and Drive phases were only occasionally included. Even if a project went through a Design phase, it did not align with the ideal workflow that LINKIT wanted. For example, designers hoped to conduct research and test concept assumptions before proceeding directly to development. However, due to the compromise that clients can't wait to see tangible outputs to feel the value of their investment, there was often

"We also encounter some challenges in this way of working to get what they (clients) preferred, like not using the design sprints. And what we encountered was that the UX designers were making designs but afterwards, the developers needed to do a lot of rework."
--Participant 3, Business

insufficient time to complete the entire design scheme before development. It is common to see the scrum team including product owners, designers, architects,

developers, and others worked in parallel, designing certain features while concurrently developing them. This is what participants referred to as 'working in agile'. Not to mention the Dream phase, it has never been successfully sold and there has not existed a clear way of working (WoW) for its execution.

Furthermore, during the Develop phase, clients may choose to exclude specific critical steps and/or specialized personnel, such as test automation, citing budget and time constraints as one of their rationales.

"Because of the payments issues, we've had a limited budget. The one that he delivered, so everything is implemented without having a look at making it more sustainable and more adjustable."
--Participant 2, Tech

"After the software really had gone live and we had delivered it to them. There was a period where it was really just me and Solution Advisor in discussion with them. And they would take a long time to come back to us with any issues raised."
--Participant 9, Tech

"All the gaps which have arisen due to the missing of the requirements steps within the waterfall versus agile. We're all mentioned as evaluation points."
--Participant 10, Quality Assurance

However, contrary to their expectations, such omissions can actually pose risks to the quality of the deliverables provided to them. These issues potentially lead to project delays or, in some cases, they only come to light after implementation, resulting in more substantial losses for the client. The crux of the matter is that many of these problems could have been proactively prevented with a modest investment by adhering to the LINKIT Project Journey approach.

3.2 Identifying problems

The research data exposed a series of problems around multidisciplinary collaboration in solution consulting projects. This section will explain what the most significant problems are and how they affect the multidisciplinary collaboration practices, thus leading to profound influence on the organization's strategic transformation.

Ingeneral

When asked to comment on LINKIT's multidisciplinary collaboration, most participants express satisfaction, noting qualities like equality, transparency, efficiency, and mutual support within the LINKIT team. However, upon further questioning about potential misunderstandings or ignorance of the value of their own roles or disciplines, many participants have raised concerns. This suggests that some hidden problems are hindering the smoother operation of multidisciplinary collaboration.

> *"Everybody, every squad has to change their way of working. And there's always like a couple of people that don't want to do it."*
> *--Participant 1, Solution Advisor*

LINKIT envisions itself as the "trusted IT innovator" and aims to transform from a sourcing agency to a trusted IT partner for its clients. This vision entails selling and conducting more projects focused on continuous problem-solving with multidisciplinary teams. **Despite being equipped with the necessary knowledge**

and workforce, not everyone at LINKIT is ready for the transition to a problem-solving mindset and effective multidisciplinary collaboration.

> *"We now sell solutions. The whole organization is set up in silos, and sold as such...As long as you sell technologies like OutSystem and Mendix and all that stuff, you're never going to get this sort of called multidisciplinary cooperation, because you're not selling multi-disciplinary cooperation...I'm not saying it's invalid, but it is I think it is one of the main reasons why we don't work together."*
> *--Participant 6, Design*

After categorizing all the insights, it became evident that two key internal obstacles are impeding the organization transformation: **misunderstandings** among different disciplines and stakeholders, and **discontinuity** in the multidisciplinary WoW.

Misunderstandings among different disciplines and stakeholders

These misunderstandings among different disciplines and stakeholders about value of each other have their roots in three primary sources:

1. Between internal disciplines
2. Especially by sales personnel
3. From the clients

1. Between internal disciplines

Accustomed to working in isolated silos, explorers typically only engage in limited interdisciplinary communication with direct interactive co-workers in temporary project teams. **As a result, there are varying degrees of misunderstanding and even ignorance among the five internal disciplines regarding each other's added value to the project**.

For instance, the role of SA is so vague that almost everyone showed a different perception of their value. There are even different claims on the scope of responsibilities within SA team themselves. Instead, SA takes over whatever there is a gap in-between different stakeholders during projects.

> *"I never worked with the solution advisor within LINKIT so far, so I don't know exactly what is it, what are expected from them."*
> *--Participant 2, Tech*

2. Especially by sales personnel

Not all the squads from the five disciplines are on an equal level. The salespeople from Business discipline and SAs are assigned to bond with one technical squad, while other squads like Design and QA are viewed as sources of 'support' for building technical solutions when there is a need (figure 3.2).
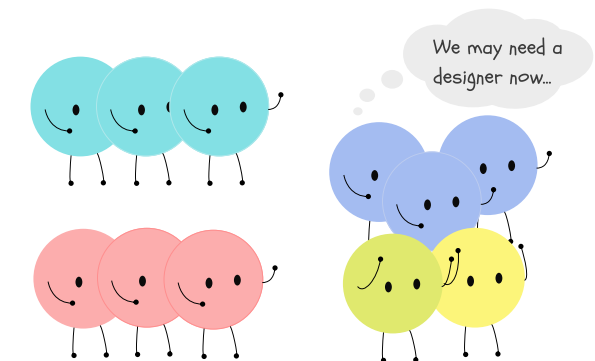
Figure 3.2 Relationships among internal disciplines

Sales have a great understanding on the added value of the corresponding expertise that they're assigned to sell. As for the disciplines that are brought in after a project is sold, they have limited knowledge and motivation to speak for them in front of the client. Consequently, they are easy to sell in silos. This also explains the reason why the entire Project Journey are hardly sold for a project other than Develop phase itself.

3. From the clients

The previous problems directly impacts the client's perception and evaluation of the value provided by different functions, which leads to the third issue:

Clients sometimes misunderstand specific roles and/or disciplines because their value has not been sufficiently and explicitly communicated to them.

Sales representatives often encounter difficulties in convincing clients of the importance of early Project Journey phases and the value brought by relevant disciplines. Consequently, they frequently make compromises with clients to secure contracts, even if it entails initially omitting some essential aspects. This practice, although seemingly a short-term solution to secure the business, can inadvertently jeopardize project outcomes and client satisfaction in the long run. **It highlights the challenge of striking a balance between meeting immediate client demands and adhering to best practices for successful project delivery complying with LINKIT WoW.**

> *"We try to run it without tester to see how it goes. Because they're confused that they don't. I'm convinced that they do. So I was like 'if you think you don't just try without it, then you will come back asking for a tester and that's fine'."*
> *--Participant 1, Solution Advisor*

'Value'

In addition, due to the abstract nature of the term 'value', people can intuitively sense it but may find it difficult to articulate explicitly. This, to some extent, can present challenges in mutual understanding during multidisciplinary collaboration.

During the interview sessions, there were interesting discussions on how to understand the value of a role or discipline. Most participants agreed that 'value' is different from either 'responsibility' or 'contribution'. The former is more abstract, while the latter is more concrete. Value is result-oriented, while contribution pertains to actions in the process. Last but not least, value must be communicated in terms of its significance to the client, whereas responsibilities and contributions delineates roles within the team or organization. In essence, truly understanding the added value of a role and its associated discipline is the key to mutual comprehension.

> *"You can contribute without adding value...So I think value is more about the outcome of what you're doing, while contribution is taking the action."*
> *--Participant 1, Solution Advisor*

> *"If what you're building has no additional value to a client or customer or an end user, then you're not adding value, you're just contributing basically."*
> *--Participant 6, Design*

Discontinuity in LINKIT multidisciplinary way of working (WoW)

Different individuals had varying perceptions and viewpoints of LINKIT culture and WoW. Everyone could provide specific examples to support their perspectives, but it's challenging to arrive at a clear and representative elaboration. **Therefore, the 'LINKIT WoW' remains at an abstract level.**

According to the Capability Maturity Model Integration (CMMI) (Godfrey, 2008) (figure 3.3), LINKIT WoW is on a 'managed level'. The learnings from success are not always repeated in new projects and process is often reactive. To progress to the higher levels, **LINKIT needs to develop a well-defined and more detailed WoW framework including methods, procedures, standards, and tools, etc.**
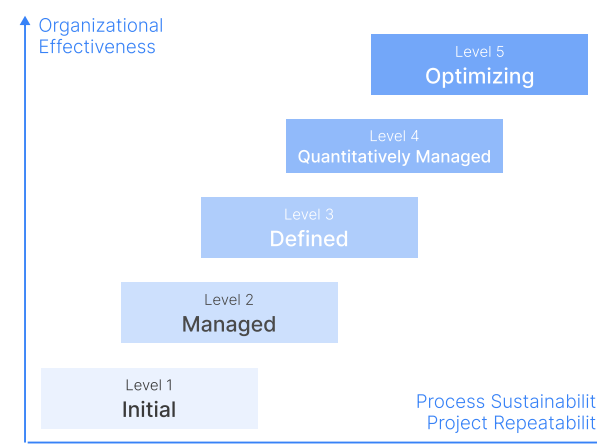
Figure 3.3 CMMI levels (Godfrey, 2008)

Research has revealed that LINKIT has a fundamental need for a consensual project best practice guidelines across all the disciplines on an organizational level. Although LINKIT attempted to introduce Project Journey as the overarching approach to improve the central governance on multidisciplinary WoW, the model itself is not enough to guide its execution. Hence, it has been put on the shelf and projects have been conducted and managed in the personal style of whoever in the leading position so far.

The problem of discontinuity in doing multidisciplinary projects lies in multiple layers regarding different aspects of WoW. To understand the holistic problem, it is necessary to define what LINKIT multidisciplinary WoW entails first. This has been distilled into a structured framework from the research data. Explorers refer to the WoW as 'best practices'. When participants mentioned it, they mainly referred to the following four dimensions:

1. Definition of roles and responsibilities (of a project team)
2. Standard Procedure (throughout a project)
3. Scrum methodology
4. Other practicality baselines

Each dimension containing a series of findings from different angles. There are explanations of representative insights related to each dimensions as follows. See Appendix 4 for the complete list of insights.

1. Definition of roles and responsibilities

An overview of roles and responsibilities can serve as the foundation for everyone to understand the multidisciplinary WoW.

As indicated in the preliminary research, roles and responsibilities are defined to some extent in the form of a RACI table. However, it's the delivery manager's definition and has not been aligned with each discipline. No one except this person has a clear overview of the workforce resources of all disciplines. Besides, previous problems about value misunderstanding have demonstrated that the definition of certain roles like SA remain ambiguous. Moreover, roles and responsibilities are dynamics at LINKIT. An individual can play different roles in different projects, or have multi-layer roles in the same project (figure 3.4). However, the work distribution on undefined areas or inexperienced expertise is not communicated and aligned throughout the team, leading to overlapping responsibilities between each other or multi-disciplinary roles on the same person.

"n general I don't think that roles are well played. Cuz you see that basically most of the time it's a bit of this and that...and then you end up in an area where you don't know who is responsible exactly for what."
--Participant 2, Tech

"There was not a way of working (that) everybody exactly knew what his role was... how do we collaborate... At first, everybody's looking at each other. 'OK, who is doing what?' You cannot immediately start."
--Participant3, Business
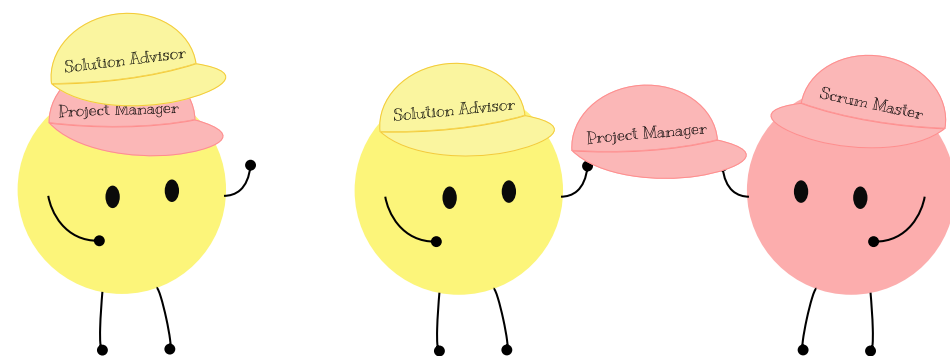
Figure 3.5 Multi-layer roles, and sharing responsibilities

2. Standard procedure for each project

LINKIT has Project Journey as an ideal process. Although it has great potential, it remains abstract, making it difficult to follow in practice. The existing RACI table details every step in the journey. While it only works on adopted on a wider scale. Research participants are still unaware of the different roles and responsibilities, making it difficult to align and implement.

"So it's a way of getting customers to understand what's the value of each role in this project team and how to communicate with them. And also what's the clarity for the team as in what would be expected from who."
--Participant 9, Tech

More detailed guidelines for each Project Journey phase are needed make the abstract Project Journey concrete, helping everyone to understand and implement LINKIT multidisciplinary WoW.

"We do have our LINKIT way of working, but I think it's not detailed enough to use it for every project."
--Participant 5, Quality Assurance

It is important for these guidelines to articulate not only articulate a standard procedure, but also how different roles and disciplines are expected to collaborate, and what value they could bring to the client in this WoW.

"Right now we have best practices from projects in each of the squads. Since we are all doing projects, I think we can all benefit from the learnings and mistakes from other projects, regardless of the squad."
--Participant 5, Quality Assurance

3. Scrum methodology

As LINKIT applies Scrum methodology to manage the team in agile, it also plays a indispensable part in the WoW. One of the most important principles is about communication in the team. Now the unwritten rule of being outspoken was always naturally led by extroverted coworkers, otherwise it depends on the scrum master or the team itself to reach the point with experience-based interventions which could fail.

> *"I think that helps a lot if you have people who are outspoken. I think that was the strong suit of this whole project that we just had a lot of communicative people. So that we knew what was going on."*
> **--Participant 1, Solution Advisor**

4. Other practicality baselines

Even if a series of standard WoW guidelines were placed, adaptions might still be needed in practice, especially when facing different clients and different types of projects. **Aligning additional baselines such as team dynamics can help bridge the gap in the practical application of LINKIT WoW.**

And there's a need for using consistent terminology across disciplines to improve communication efficiency. An observation during the research was that participants were expressing the same objects or similar concepts with different terms, which could be confusing especially to new colleagues and external stakeholders. Language can be the root of misunderstandings, as well as the realization of shared knowledge in multidisciplinary collaboration (Dutton, Carusi, & Peltu, 2006).

> *"The team setups changed over time, so we professionalized that as well... because now we have involved the quick response team, so with multiple developers having knowledge of this client so we can scale up and down where necessary."*
> **--Participant 3, Business**

In summary

This discontinuity in WoW, praised by some participants for its flexibility and agility though, has been proven to also bring some side effects including reduced work efficiency in later periods and a potential impact on the quality of the final delivery to the client. Such issues can have a negative influence on project scalability and business sustainability according to CMMI (Godfrey, 2008). Consequently, it will obstruct LINKIT's strategic transformation into problem-solving IT innovator from a long-term perspective.

The initial problem of misunderstandings among different disciplines (i.e., PaG) does exist. It affects not only the collaborative process within multidisciplinary projects, but also the proof of added value from these disciplines to customers. This constraints LINKIT's business expansion in the expected direction of selling problem solving projects instead of people or technology.

However, the underlying problem behind PaG is the discontinuity in LINKIT multidisciplinary WoW throughout the entire organization. This problem hampers the organizational transition from working in silos towards genuine multidisciplinary collaboration across different squads. Moreover, it plays an essential role in the reasons why even internal disciplines have little knowledge and understanding of each other, and hence indirectly leads to a lack of communication concerning specific expertise.

So the reframed problem (PaP) for this project is to improve "the continuity of multidisciplinary way of working (WoW) in project practices".
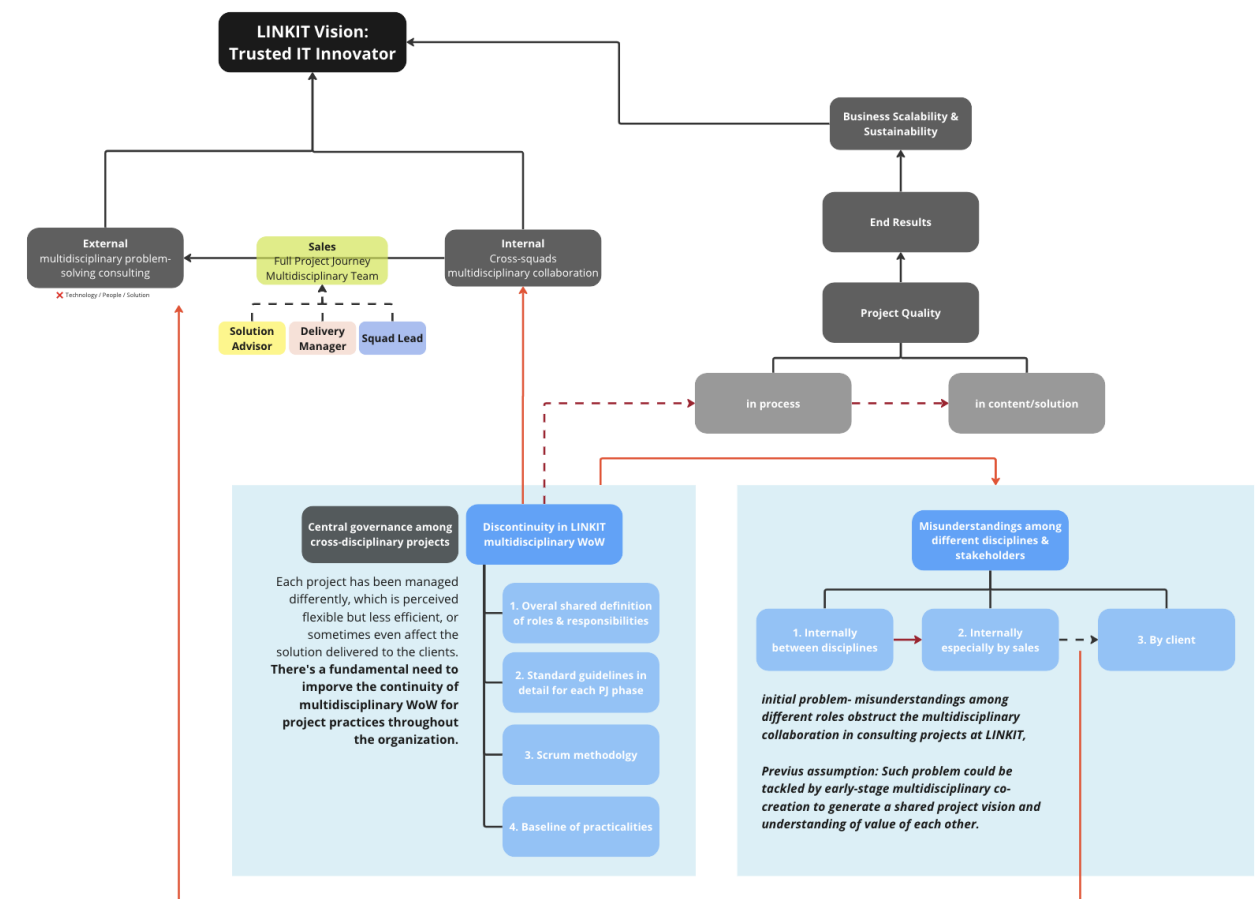
Figure 3.6 Contextmapping informatics

3.4 Potential outcome

The first two dimensions of the discontinuity are the most fundamental and critical. Given the limited duration and workload of this project, the solution will mainly focus on addressing the them in combination. To foster a continuous WoW in multidisciplinary problem-solving projects, the potential outcomes are assumed and aligned with LINKIT as:

1. A generic **framework** of LINKIT multidisciplinary WoW, illustrating what factors included

2. A detailed **guideline** of Project Journey combining roles, responsibilities, and value

3. **Strategy/approach &/toolkits** for mutual understanding and new guideline adoption at an organizational level, i.e., a means to communicate and collaborate on 1&2

It can be stated that for LINKIT to successfully complete the transition towards a problem-solving IT consulting business, it is imperative to establish a clear internal consensus and applicable guideline for multidisciplinary collaboration. This framework should encompass not only standardized project approach and processes but, most critically, an elaboration of the value each discipline and its associated roles contribute to projects. Importantly, the RACI table has proven that a definition generated only by a dominant minority and imposed from the top-down did not work well in practice. Instead, the WoW should emerge as a shared consensus co-created by individuals across all disciplines. The solution aims to encourage a shift in mindset and active participation in multidisciplinary collaboration among all the explorers, aligning with LINKIT's transformation vision.

Chapter Takeaway

1. While Project Journey is supposed to be a unified project procedure and one of the guiding principles for all projects to follow, it hasn't got enough awareness and implementation in the practical experiences across the organization.
2. Not everyone at LINKIT is ready for the transition to a problem-solving mindset and effective multidisciplinary collaboration.
3. Two key internal obstacles are impeding the organization transformation: **misunderstandings** among different disciplines and stakeholders, and **discontinuity** in the multidisciplinary WoW. Each problem has several sub-dimensions.
4. The reframed problem to improve the continuity of multidisciplinary way of working (WoW) in project practice is the fundamental step in addressing the initial problem of interdisciplinary misunderstandings. This, in turn, supports LINKIT's strategic transformation into a truster IT innovator.
5. The potential outcomes include a generic **framework** of LINKIT multidisciplinary WoW, a detailed **guideline** of Project Journey combining roles, responsibilities, and value, and **strategy/approach &/toolkits** for mutual understanding and new guideline adoption at an organizational level

Chapter 04
Literature Review

Once the problem was reframed, a second round of literature review was conducted to explore the successful cases of established frameworks for multidisciplinary way of working (WoW), and theoretical methodologies for organizational transformation regarding multidisciplinary team management, particularly in the IT development industry.

DESIGN

The vision of collaborative problem solving in IT consulting for LINKIT means that the referential solutions should assist the organization in achieving its transformation goals and establishing a mutual understanding of the WoW through employees. Keywords extracted from the research conclusions including "multidisciplinary collaboration", "collaborative problem solving", "team management", "work in silos", "break silos", "organizational transformation", "transition", "IT development", "IT consulting", "project management", "co-creation", "co-creation in business context" and so on were used for searching relevant literature.

In essence, the concepts introduced in the this chapter revolve around several key aspects of the potential solutions. They either encompass well-defined and effective solutions that facilitate multidisciplinary collaboration in addressing IT challenges. Alternatively, some can serve as guiding approach for the organizational transformation and adaption. Additionally, some concepts foster a shared understanding of the preferred WoW among various disciplines within the company, encouraging a collaborative approach.

4.1 Multidisciplinary team in IT industry

Teams are more effective than individuals working alone due to the synergy they create. Optimal team effectiveness is achieved when team composition assembles members from various functions instead of a single department (Menon, Chowdhury, & Lukas, 2002). Organizational structural factors significantly impact the IT development cycle, especially the short-term projects.

One of the biggest challenges that many multi-functional companies face is the organizational structure in silos; that is, the formation of specialized knowledge groups just like the professional squads of different disciplines at LINKIT. This results in less communication across squads which encumbers not only a shared organizational culture but also the ability to bond together for a common goal. Moreover, as work experience accumulates and professional knowledge deepens within each discipline, it is common to see the development of specialized terminology (Gudiksen, & Inlove, 2018). This specialized language can impede mutual understanding and subsequently create challenges for multidisciplinary communication, even within a unified project team.

A standardized formulation of roles and disciplines can provide a foundation for open communication and shared understanding on the same page. Rizzo et al. (1970) approves that lack of standardization causes role ambiguity. The RACI model (figure 4.1) is a tool widely used in IT project management to clarify roles and responsibilities in a team. It stands for Responsible, Accountable, Consulted, and Informed. RACI matrix explicit a task-based overview of the team configuration.

But on the other hand, rigid formulation can result in bureaucracy, where rules dominate the daily operations, inhibiting innovation. Quinn (1985) emphasizes the notion of 'controlled chaos' as a descriptor for a balanced central governance marked by adaptability, dynamism, informal controls, and agility.

Figure 4.1 An example chart of RACI Model

Takeaway

As a verified method for IT development team management, RACI matrix has been used as a roles-responsibilities framework in LINKIT's project operation as demonstrated in the contextmapping research. It is wise to integrate RACI into the solution to maintain consistency in explorers' familiar WoW and facilitate a smooth transition for them to the new framework as much as possible. But the framework and guideline should serve as a flexible standard, providing boundaries without restricting adaptability.

4.2 Organizational transformation

Organizational transformation is approached as a human process of interconnection that unfolds within multiple interactions.

The Plan-Do-Check-Act (PDCA) cycle (figure 4.2), initially formulated by Dr. William Edwards Deming, is originally referred to as Deming Cycle (Moen, & Norman, 2006). Focusing on process improvement, this framework serves as a well-established change management model. PDCA is namely a "cycle" rather than just a model because it is intended to function in a continuous, iterative loop. It is a systematic approach to make sure that organizations learn from experiences while adapting to evolving circumstances.
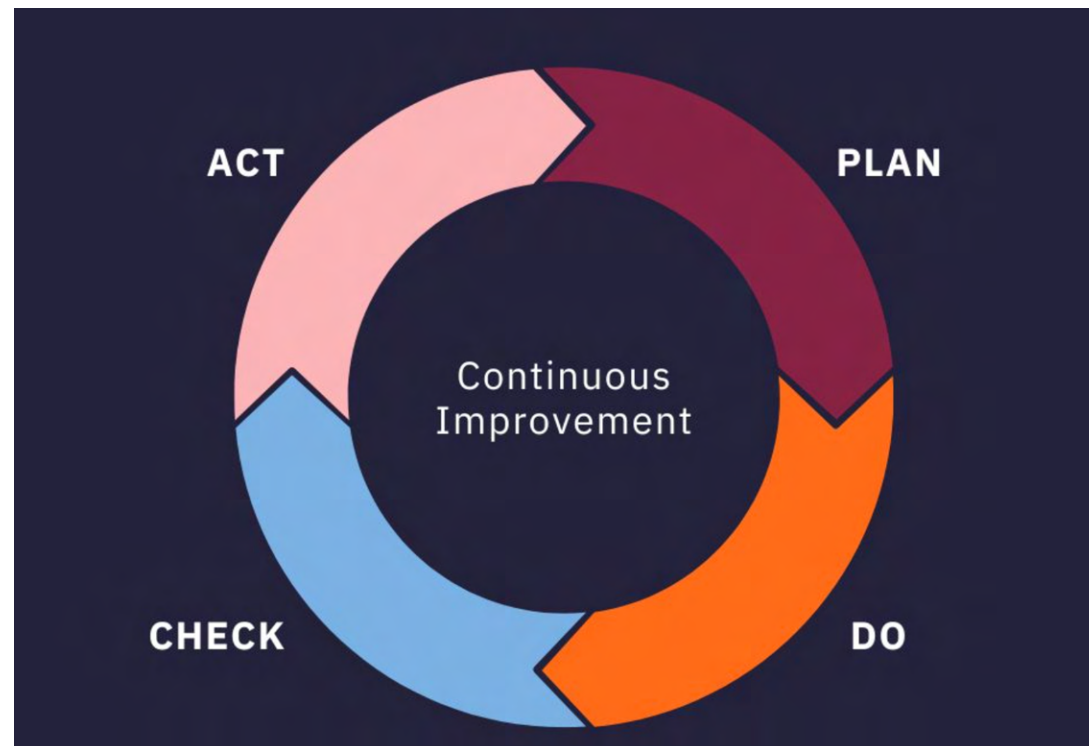
Figure 4.2 PDCA cycle

Takeaway

The PDCA cycle can serve as a mature process reference to promote the widespread acceptance and adoption of the new WoW framework and guideline throughout the organization.

4.3 Co-creation for organizational transformation

In many organizations, transformation and other significant impacts are meticulously orchestrated by top-level management (Twowp, 2021), which is common to be slow and even ineffective. Nonetheless, frontline employees typically possess a deeper insight into the practical workings, their own experiences, necessary changes, and factors that can enhance organizational effectiveness and improve the WoW, compared to leaders. Besides, the role of employees becomes increasingly significant in shaping and implementing change, in order to reduce resistance, and foster a greater sense of "ownership and contribution".

Co-creation is a design practice that encourages active involvement of non-design professionals including users and relevant stakeholders in the creative design process (Ind, & Coates, 2013). Co-creation assumes that participants have the capacity to contribute to and influence matters that are relevant to them, and their expertise is essential in the design process. Stakeholder involvement in problem-solving ensures the solutions to better address relevant issues, and the participants are generally more empowered to implement these self-generated solutions (Salmi, & Mattelmäki, 2019).

The role of design is to facilitate the process by planning activities and engagement, providing tools, etc, to elicit participants' experiences and ideas (Mattelmäki, & Sleeswijk Visser, 2011). The coordinators of co-creation doesn't have to be a design professional, particularly when the setup is well-designed and explicit enough.

Takeaway

It is rationale to invite frontline explorers at LINKIT to co-create the framework and guideline they will implement. Such design approach will ensure the reliability and enhance the adoptability of the solution.

4.4 Gamification for business

There are various formats of co-creation, among which gamification has become a rising trend (Rodrigues, Soares, Lopes, Oliveira, & Lopes, 2021). Gudiksen & Inlove (2018) advocated that game-based design can be an effective approach to address business challenges about siloed working and insufficient engagement, and enhance organizational performance.

By studying 29 cases, they summarized the five core elements of a business game's structure:

1. **Framing metaphor (initial framing)**

   In all games, players explore the meaning of the game with the help of materials. While a game metaphor isn't obligatory for gamification workshops, icebreakers or warm-up activities can achieve the same results. However, a game metaphor can create an informal and intuitive atmosphere, naturally leading players to a mutual understanding, which is the starting basis of the co-creation.

2. **Rules (dos and don'ts)**

   Game rules contains the procedures of the game with dos and don'ts. The format of gameplay is corresponded with designed rules. Therefore, game rules apply direct influences on the outcomes and should be carefully considered.

3. **Materials (functions and aesthetics)**

   The materials should align with the context and game rules. Different types of materials like paper, cardboard, fabric, etc, have different advantages and constraints. In short, physical elements allowing participants to intuitive touch and feel will open up their minds to explore beyond the normal. In contrast, digital games may have less potential for innovation, but can retrieve and save precise information more promptly and in larger quantities.

4. **Challenges (given during gameplay)**

   Six types of challenges are summarized. Among those, "mapping challenges" are typically used to assist players in collectively mapping an organizational process, aiming to achieve a broader and more actionable overview. Commonly, they are employed to break down silos and provide a comprehensive perspective to tackle complex problems. This appears to align well with the context of this project.

5. **Participation (arrangement of people)**

   As the name suggests, "participation" revolves around the players, their abilities, decision-making power, and the relationships between each other. Paying attention to balance certain traits among participants is one of the key factors for the session success.

5. **Participation (arrangement of players)**

   As the name suggests, "participation" revolves around the players, their abilities, decision-making power, and the relationships between each other. Paying attention to the balance of certain traits among participants is one of the key factors for the session success.

Takeaway

Gamified setup for co-creation sessions can break silos between different disciplines and promote participants' engagement in a natural way. When designing the session plan and toolkits, five aspects can be taken into consideration including metaphor, rules, materials, challenges, and participation.

4.5 Summary

From the literatures, there are five arguments dedicated to the researcher's decision during the following solution design processes:

- Integrate RACI into the framework to maintain consistency in existing WoW and foster a smooth transition.

- The framework and guideline should make the standard of multidisciplinary WoW explicit without restricting flexibility.

- The adoption of WoW change is a continuous and iterative process for everyone in the organization, in accordance with PDCA approach.

- Participation of frontline explorers in co-creation guarantees the solution's reliability and strengthens its adoptability during subsequent implementation.

- Gamification can dismantle barriers between different disciplines and naturally enhance participants' engagement during co-creation.

Chapter 05
Conceptualization

In this chapter, you will find the co-creative conceptualization process during the design phase, concluded in the refinement of final deliverables and design criteria.

DESIGN

5.1 Gamified Co-creation workshop

To address the commitment to developing more detailed Project Journey (PJ) guideline as one of the design outcomes for PaP, the initial plan was formed to facilitate collaborative content creation involving colleagues from different departments. As literature shown in the previous chapter, a gamification setup can open up interdisciplinary conversation while immersing participants in a relaxing and active atmosphere. And in-person game will create a more engaging environment and encourage deeper communication (Gudiksen, & Inlove, 2018). **Consequently, the decision was made to organize an offline gamified co-creation workshop.**

While preparing the workshop, an early idea of creating a board game as the toolkit for adoption came up. Thus, apart from serving as the tool for the main purpose of co-creating PJ guideline, this 'board game' was also intended to be tested during the workshop. Additionally, this session itself presented a valuable opportunity to break down functional silos in the organization, foster interaction among colleagues from diverse disciplines, and promote mutual understanding. It achieved multiple objectives simultaneously.

Setup

The task of the workshop was for participants from five internal disciplines to set up actionable goals and assemble project team for a fake case. They were guided to co-create and play on a predefined PJ Map (figure 5.1) using post-its, role cards, and function cards (figure 5.2). All the props they used were color-coded to represent their discipline identities, making it more visually evident to showcase different perspectives among multiple disciplines and identify the source of misunderstandings or unclear communication.
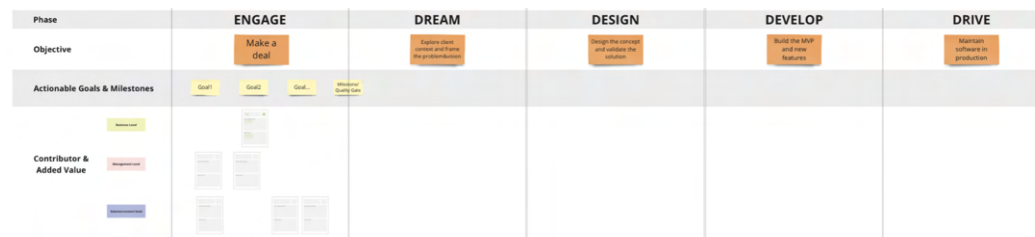
Figure 5.1 Project Journey map

Figure 5.2 Props including role cards, post-its, and function cards

During the 3-hour session, participants were encouraged to speak freely without feeling offended or fearing to offend others. This is because participants only represented their entire discipline rather than themselves as an individual or a specific job title. The workshop went through four stages: Group discussion on goal setting, individual within-discipline assembly task, cross-discipline game play, and reflection with a feedback form.

Implementation

The researcher first presented research findings about the inconsistency in multidisciplinary WoW. The game started after a warm-up activity. The PJ was separated in five phases of Engage, Dream, Design, Develop, and Drive, corresponding to five rounds of game respectively.

Each round began with a group discussion on breaking down predefined phase objective into several actionable goals.

Once reaching alignments, they stepped into nest step of roles assembly. During this within-discipline task, participants from each discipline were required to decide which roles from their respective disciplines are needed to contribute to specific actionable goals. They then filled in the responsibilities and added value of the assembled roles on role cards, and placed them below the corresponding actionable goals. This entire process was conducted in silence, with no communication allowed between disciplines. This was done to reveal each discipline's self-awareness fully and prepare for the 'clash' between disciplines in the next stage.

Once everyone had completed their tasks and placed their assigned roles on the PJ map, the climax of the workshop arrived. At that point, each participant was given a stack of function cards, which included "Remove," "Switch," "Retain," and "Add." They could play these function cards on the assigned roles they wished to influence regardless of their discipline, each with explanations of why they played the function. Different perspectives emerged based on varied personal understanding of roles from other disciplines. And these differences were visually exposed through the interaction while using function cards. Especially when there were different interpretations on the same role or disagreements about how responsibilities should be divided, the use of function cards created a conflicting effect, exposing and magnifying participants' misunderstandings that may have been lurking beneath the surface of daily work.

Figure 5.3 During the workshop

Due to the intensive nature of the discussions across disciplines, each time this step took much longer than anticipated. Participants were only able to went through the first three stages of PJ map. The researcher had to jump into reflection and close the session. However, this workshop successfully achieved the desired goals and received valuable input from various disciplines and participants.

Results

This workshop has undoubtedly demonstrated the necessity of having various disciplines co-create the multidisciplinary WoW guideline. This goes beyond achieving a guiding consensus; the process itself provides a opportunity to reduce misunderstandings among disciplines and roles that might not be familiar with each other previously.

This workshop sparked passionate discussions. However, on the other hand, it did not confirm any conclusions. This was not only due to the time constraint, but it also became evident that participants felt compelled to keep up with the pace of the game even if they still had unresolved doubts. These observations highlighted that the development of LINKIT PJ guideline, combined with roles and responsibilities allocation, cannot be achieved in one go. Instead, **it's a long-term, non-linear, ongoing process.** This finding aligned with the concluded argumentation in literature review. Therefore, it is not realistic of the initial decision to co-create a draft version of PJ guideline contents with multidisciplinary LINKIT explorers within the scope of this project.

Consequently, the final deliverable has been redefined into three solution spaces:

1. **Establishing a LINKIT multidisciplinary WoW framework**

2. **Creating a co-creation toolkit to facilitate PJ guideline generation across all disciplines**

3. **Developing an implementation approach for the organization to adopt the PJ guideline.**

The **framework** embodying Project Journey, will illustrate an applicable blueprint of multidisciplinary WoW during projects. Once LINKIT explorers fill in the framework with the help the **co-creation toolkit**, they are ready to apply the generated outcome as organizational guideline in doing multidisciplinary projects. The **implementation approach** will then help them to continuously reflect on and iterate this set of WoW in practice.

Follow-up development

It is worth noting that LINKIT explorers work in hybrid. Although offline setup aroused a success of multidisciplinary co-creation, it may not be realistic to conduct in-person sessions every time in the future. Therefore, the toolkit needs to enable online co-creation. To test the online configuration and further develop the 'board game', the researcher organized a mini session on Miro for another group of multi-disciplinary participants to cover the rest phases, Develop and Drive.

The learnings and iterations regarding design details distilled from both sessions will be discussed in the subsequent chapter while presenting the design process of each deliverable.

5.2 Design criteria

Design criteria (table 5.1) of the three design outcome are derived from, but not limited to, four insightful sources including researcher's observation, contextmapping research, and co-creation sessions.

Deliverables	Criteria	Interpretation	Source
WoW Framework	Desirability	**Straightforward:** LINKIT WoW framework and guidelines should be simple and clear for every explorer to understand. **Consensual:** LINKIT WoW framework and guidelines should be co-created and aligned among all the disciplines.	*"...We have something But it's not very clear yet..."* *"...I think it's something for the squad leads, but also for the leader of IT & Innovation to make it clear for every squad to do a project the same way..."*
	Feasibility	**Actionable:** LINKIT WoW guideline should provide more details for project member to follow in the real practice.	*"...You should have a minimum setup for any project..."*
	Viability	**Adaptive:** LINKIT WoW framework and guidelines should be flexible to fit different types of projects.	*"...but it's a starting point that we can take to a customer. Because we kind of found our way with the customer and took their lead in some things and we didn't come with a very hard recommendation..."*
Co-creation Toolkit	Desirability	**Easy:** The toolkit should not be too complex or intensive for participants to understand and use.	*Co-creation workshop observation*
	Feasibility	**Clarified:** The toolkit should provide clear instructions and props to guide the process. **Self-explanatory:** The toolkit should be able to use without an experienced facilitator.	*Co-creation workshop observation* *Co-creation workshop observation*
	Viability	**Flexible:** The toolkit can be adjusted to fit the situation.	*"...but it's a starting point that we can take to a customer..."*
Implementation Approach	Desirability	**Sharable:** LINKIT WoW framework and guidelines should be findable and sharable throughout the whole organization.	*"...Since we are all doing projects I think we can all benefit from the learnings and mistakes from other projects, regardless of the squad..."*
	Feasibility	**Responsible:** Roles & responsibilities can be articulated and pointed to responsible individuals for each project.	*"...There was not a way of working (that) everybody exactly knew what his role was... how do we collaborate... At first, everybody's looking at each other. 'OK, who is doing what?' You cannot immediately start..."*
	Viability	**Up-to-date:** LINKIT WoW framework and guidelines should be reflected and refreshed regularly.	*"...Every half year, just to refresh. Most phases are thought thorough a lot already though, there might have some updates..."*

Table 5.1 Design criteria for three solution spaces

DEVELOP

Chapter 06
Multidisciplinary WoW Framework

This chapter will introduce the process of developing the multidisciplinary way of working framework and the final design as Project Journey Blueprint.

6.1 Early concept

Project Journey (PJ) as the concept for multidisciplinary project process that has already been established and published, it is reasonable to continue using its structure as the foundation of the multidisciplinary way of working (WoW) framework. So the aim of the framework is to deconstructing Project Journey from an abstract model into a concrete blueprint.

As concluded in the research findings, LINKIT multidisciplinary WoW has four dimensions:

1. Definition of roles and responsibilities
2. Standard project procedure
3. Scrum methodology
4. Other practicality baselines

With a focus on the first two dimensions, the decision of combining roles and responsibilities into the standard procedure throughout Project Journey was made.

The first version of the framework (figure 6.1) was adapted from the Project Journey map used in the co-creation workshop. It was structured with vertical columns representing each PJ phases and horizontal rows representing essential factors contributing to the guideline for each respective phase. In addition to the existing layers encompassing abstract phase objectives, actionable goals & milestones, and project team roles and responsibilities, an additional factor of quality check was incorporated. The "Quality Check" layer serves as a threshold denoting the completion of each phase, where there is supposed to be a specific role assigned to safeguard the quality in each phase.

It's worth mentioning that in this early concept, roles and responsibilities are not structured in the typical RACI format. Instead, the emphasis is solely on the 'Responsible' roles, who are actually part of the project team and contribute to the project directly. Their responsibilities, along with the added value to the project and customer, are supposed to be articulated in the format of role cards (figure 6.2). This will illustrate an ideal team setup for a client project from LINKIT perspective.

As revealed in the research, LINKIT sometimes need to compromise due to realistic concerns like budget deficit. Hence the decision has been made to highlight the Minimum Viable Team (MVT) among the ideal team configuration. The MVT puts an emphasis on LINKIT's bottom line to deliver the solution with an acceptable quality. This will avoid the situation of useless application caused by blindly reducing the team and steps from happening again.
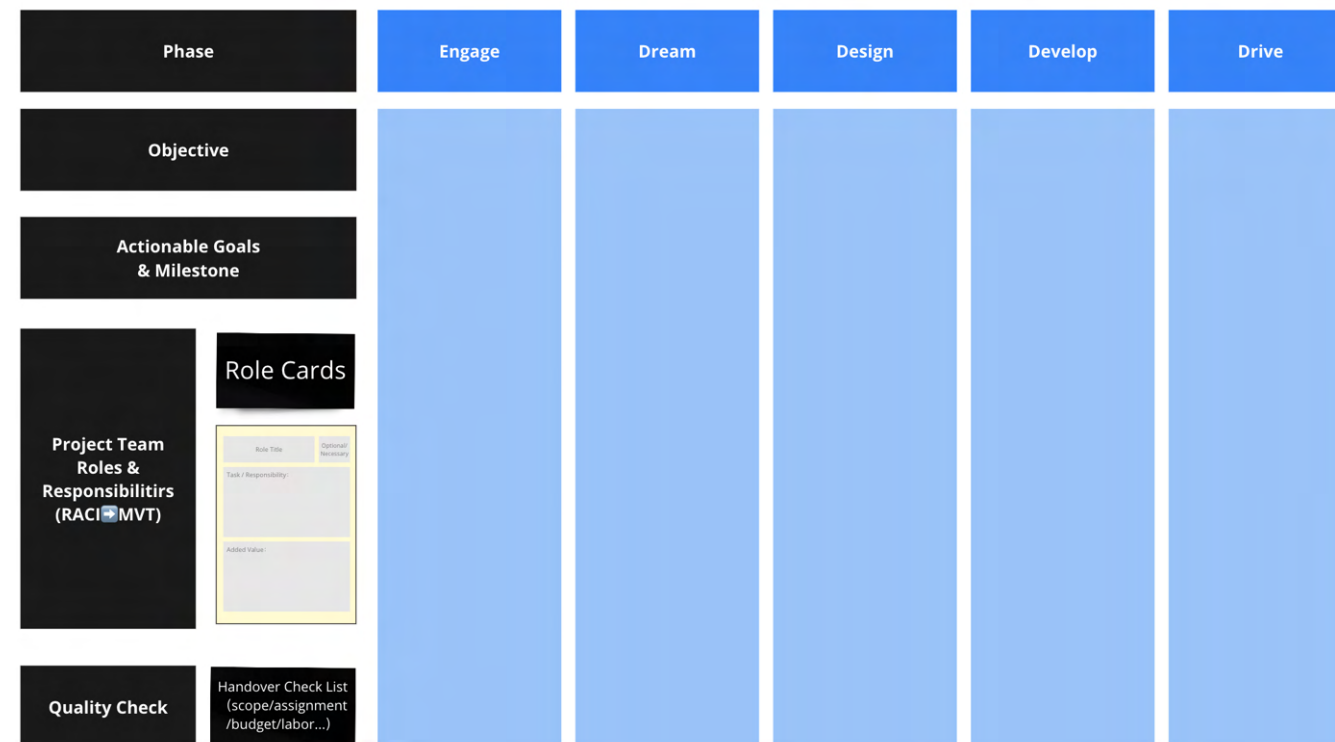

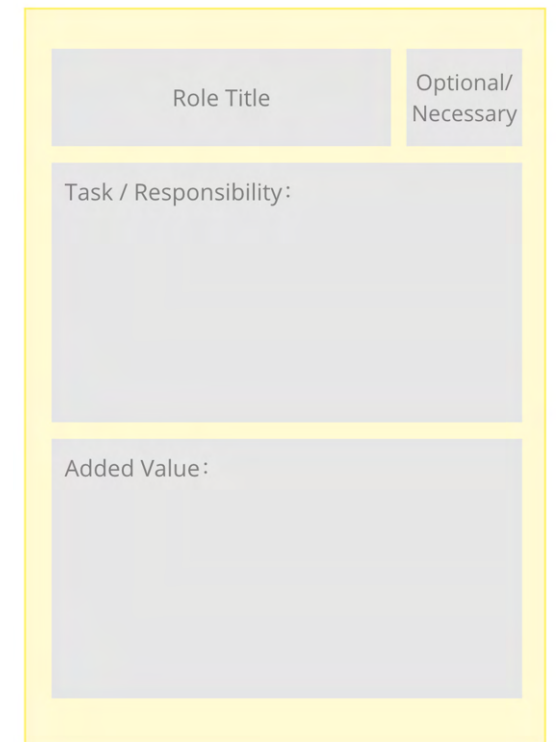Figure 6.1 First version multidisciplinary WoW framework

Figure 6.2 Color coded role card

6.2 Fast validation

A round of fast validation was conducted with three Solution Advisors who have sufficient experience in multidisciplinary project management and a thorough understanding of PJ. They approved of the idea of linking roles and responsibilities with actionable goals, as it is the most essential part to put LINKIT WoW into practice (*criteria 'actionable'*). And especially the highlight of MVT can provide LINKIT people a clear boundary on to what extent can they adapt to the client (*criteria 'straightforward'*). However, they also shared their concerns for adoption:

- Emphasis more on the value added towards customer
- Break down steps of team assembly
- Bridge towards RACI

During previous co-creation workshop where participants were asked to assemble team for a fake case, the researcher heard the statement 'this might be different if it's another project' multiple times. There are different kinds of clients that LINKIT have to compromise more or less. And LINKIT will do different types of projects, among which not all cover the entire Project Journey. Thus, it is important for the framework and guideline to be flexible for explorers to adapt to different circumstances (*criteria 'adaptive'*).

Another feedback about having an example case to elaborate the guideline from the participants inspired the researcher to embed a 'best practices' space. It functions as a repository for successful cases in a scenario base, where project experiences could spread the entire organization. This addition aims to enhance the clarity and persuasiveness of LINKIT WoW by furnishing practical examples for reference (*criteria 'sharable'*).

A significant change was decided that responsibilities are no longer tied to specific roles, and there are several reasons for this shift. Firstly, previous research revealed that practical constraints often force some project members to take on additional responsibilities that may not have originally belonged to their roles. There are also situations when some responsibilities need to be shared among multiple roles. As a project evolves, the specific responsibilities may remain relatively consistent, but the roles involved can switch. Moreover, separating roles from responsibilities allows people to focus their understanding and attention on the value of the roles and disciplines, rather than getting caught up in the potentially shifting nature of responsibilities within a project.

The researcher also carried out a self-reflection and discovered an insight that was previously overlooked: Each of the five disciplines plays a dominant role during each Project Journey phase. For example, business people are leading the Engage phase which is the pre-sale stage. They are the perfect choices to advocate LINKIT's Ways of Working within their respective phases.

In summary, five points of iteration was concluded:

- Add a 'Phase Ambassador' factor in the framework to reinforce the ownership of Project Journey within each discipline.

- Lay an emphasis of the value to the customer onto the Phase Objective

- Separate roles and responsibilities to not only have more space for team dynamics but also emphasize the added value of each role.

- Integrate RACI matrix into the framework with a highlight on roles' added value

- Add 'Best Practices Showcase' layer for the the future development after this project

Phase Ambassador	Business	Solution Advisor	Design	Quality Assurance	Tech
Phase	Engage	Dream	Design	Develop	Drive
Client-centric Objective					
Actionable Goals					
Responsibility					
Project Team Roles & Added Value (RACI & MVT)					
Milestone Quality Check	Handover Check List & safeguard individual				
Best Practices Showcase (Scenarios)					
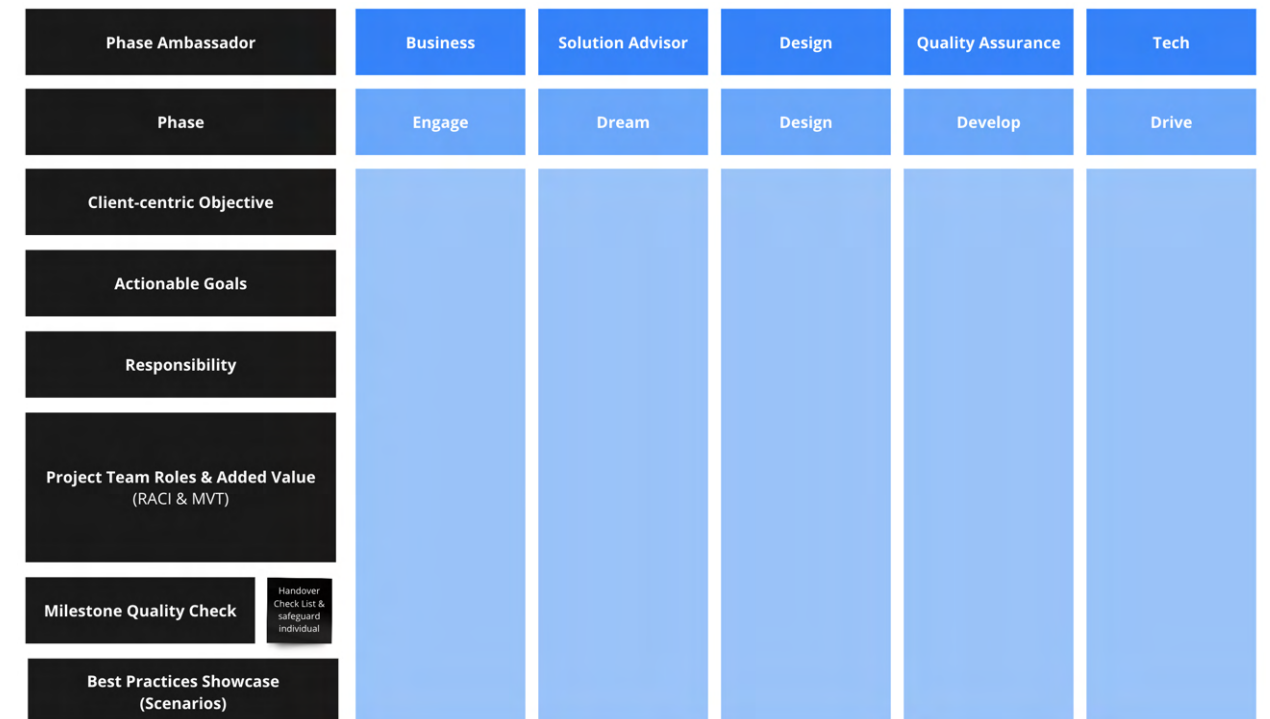
Figure 6.2 Iterated framework

6.3 Project Journey Blueprint: multidisciplinary WoW guideline

Named the 'Project Journey Blueprint' , the final design of the framework (figure 6.1) combines the integral RACI model with the format of service blueprint, building upon the LINKIT Project Journey. Once the content has been aligned and generated by explorers from all five internal disciplines, this framework will serve as a modular, value-based multidisciplinary WoW guideline for LINKIT in doing problem-solving projects. And the essence of the guideline will be the team configuration of roles and added value.

The framework unfolds much like a service blueprint, built upon layers of building blocks.

In each phase, there was originally one discipline taking the lead during project. Now, that discipline not only leads the project implementation, but also serves as the Phase Ambassador for the LINKIT WoW within that phase. They act as advocates in front of other stakeholders, especially the external clients, and ensure the smooth progress of multidisciplinary collaboration.

Each phase has a customer-centric objective which present the value LINKIT want to deliver to the customer. The objective is converted into several actionable goals LINKIT project team must accomplish to achieve the objective.

As the next layer, all the responsibilities that need to be taken are broken down from the actionable goals.

As the team assembly has been decided to separate from the responsibilities, roles with elaboration on added value were positioned in the next layer. Correspondingly, the RACI matrix is integrated but follows a value-based format rather than the classic task-based approach. The emphasis remains on highlighting the 'Responsible' roles, which fall within the scope of the project team.

Last but not least, milestone quality check contains a checklist to ensure the quality of phase outcome and corresponding roles pointed to safeguard the quality.

As a supplement, the best practices showcase is a space leave for LINKIT to develop examples of WoW in the future and thus is not within the scope of this project.

Figure 6.4 in the next page elaborates the blueprint further layer by layer. Design phase is taken as an example to illustrate how the filled blueprint will look like. *Note that this figure only provides a simulated showcase without confirming the content to be correct.*

In the following chapters, the researcher will introduce the online toolkit 'Project Journey Embassy'. You can learn how it will facilitate LINKIT explorers to fill in this Project Journey Blueprint step by step to co-create the multidisciplinary WoW guideline.

Figure 6.3 Unfilled Project Journey Blueprint

5 internal disciplines is assigned to represent one phase respectively, responsible for **co-creating the corresponding guidelines of the phase and designating someone from this discipline as the Phase Ambassador to take care of the phase execution during projects**. The designated role will be the actual lead and the first contact of the project team from LINKIT side during this phase.

Phase Ambassador	Design

Project Journey model comprise 6 phases in all whereas this blueprint focuses only on first 5 during-project phases. See here for further explanation on Project Journey.

Phase	**3 Design**

Customer-centric Objective is **an abstract qualitative goal of the entire phase demonstrating the importance (why) of doing this phase for customers**, i.e., what value LINKIT will deliver to the client through this phase and what risks may occur without doing this phase.
Make only one objective each phase, write it sharp and explicit.

Customer-centric Objective	Design the concept & validate the solution to increase the ROI during subsequent development phase for the customer. Otherwise, a lot of adjustments may pop up during the Develop phase.

Actionable Goals are multiple targets that **LINKIT project team must accomplish** to achieve the phase objective.
It's not a long list of specific tasks, but people should be aware of what to do once they see these goals. 3 is enough, 5 at most.

Actionable Goals	**Actionable Gaol** Design and validate the solution

Each Actionable Goal can be broken down into **several specific responsibilities which are the maximum sum that needs to be taken care of to complete a goal, regardless of specific roles or personnel.** Because some responsibilities may always be handled by fixed roles, but some may be shared by several roles or handled by different roles in different projects.
You may already recognize roles while filling in responsibilities, but please separate them and save the ideas of roles assembly for the next step.

Responsibilities break-down	**Responsibility** Participate in the design sprint / **Responsibility** User research / **Responsibility** Gather feedback from the client / **Responsibility** Design the solution

Roles & Added Value is a space **illustrating the ideal team configuration of each phase following RACI model**

Roles & Added Value is a space **illustrating the ideal team configuration of each phase following RACI model** (Responsibility Assignment Matrix) where 'Responsible' does the work to complete the task; 'Accountable' refers to someone who delegates work and is the last one to review the task or deliverable before it's deemed complete; 'Consulted' provides input based on either how it will impact their future project work or their domain of expertise on the deliverable itself; 'Informed' needs to be kept in the loop on project progress, rather than roped into details of every deliverable.

*The assembled roles with RACI indication, role title and color code of discipline are mapped out corresponding to the responsibilities above. Be aware that 'roles' are not necessarily same with job titles. Besides, **be explicit in what added value each role can bring**.*

Discipline color codes:
Business in green, Solution Advisor (SA) in yellow, Design in blue, Quality Assurance (QA) in pink, Technical (incl. Mendix and OutSystem for now) in purple.

External stakeholders like Product Owner (PO), Business Analyst (BA) and so on from the customer sometimes also play an important role in the project team. So it's necessary to also map out these roles as a seperate discipline in orange.

This blueprint shows the **maximal team configuration** with every needed roles to make the best performance of an entire project. However, it's not realistic to always have everyone on board. So the pinned roles also indicate a **Minimal Viable Team (MVT)** who are neccessary even in extreme circumstances from LINKIT IT&Innovation perspective.

Milestone Quality Check is a results checklist assessing if it's ready to close the current phase and hand over to the next phase.
Composed of what results to achieve and who're responsible for the results if something goes wrong, the checklist should be ambitious but achievable to meet the quality LINKIT wish to deliver to the customer.

Future recommendation: Success case stories can be centralized and integrated as part of Project Journey guidelines. It showcased as strong proof of the value of the LINKIT way of working following the Project Journey. This will not only assist internal explorers in better understanding these guidelines but also enhance persuasiveness with clients. However, it requires long-term accumulation.

Roles & Added Value
(connected to RACI incl. project team external stakeholders)

Responsible (Project Team)

Execution

Line of Decision Power

management / business

Line of Visibility

Accountable

Line of Internal Interaction

Consulted

Informed

R Designer
Added Value:
1. Design filled solution
2. Provide manual for developers

R Client PO
Added Value:
1. Understand what is a proper problem
2. Provide use stories
3. Communicate on behalf of the client

R Business Manager
Added Value:
1. Align expectations between clients and LINKIT

R Solution Advisor
Added Value:
1. Fit the solution to the customer's landscape

I Client PO
Added Value:
1. Communicate the business requirements on behalf of the client

Milestone Quality Check

✓ Lead Designer
Handover:
Validated design concept

Best Practice Showcase
(Scenario-based)

Figure 6.4 Example filled Project Journey Blueprint

DEVELOP

Chapter 07
Co-creation Toolkit

This chapter will introduce the process of developing the co-creation toolkit for multidisciplinary WoW guideline generation and the final design as an online gasified toolkit namely Project Journey Embassy.

7.1 Ideation

During conceptualization, an early concept of 'board game' has been created to facilitate LINKIT explorers to discuss and co-create multidisciplinary WoW guideline. In the offline co-creation workshop, the prototype of this initial idea was tested. Participants were playing on the Project Journey map to define actionable goals, roles with responsibilities and added value of each project phase.

The essence of the game consisted of two step: a within-discipline task of roles-responsibilities assembly using Role Cards, and an across-discipline task followed to align ideal team configuration by reactions to each other's idea with the help of Function Cards (figure 7.1). The five phases of Project Journey were separated as five rounds of game. During each round, participants will repeat the two tasks.

The aim of the four types of Function Cards including 'remove', 'switch', 'retain', and 'add' is to stimulate discussion about different perceptions of specific roles from different disciplines. All the props were color coded (figure 7.2), allowing an anonymous identification of thoughts and information collection. In this interactive way, the misunderstandings between disciplines could be exposed and solved in a joyful vibe.
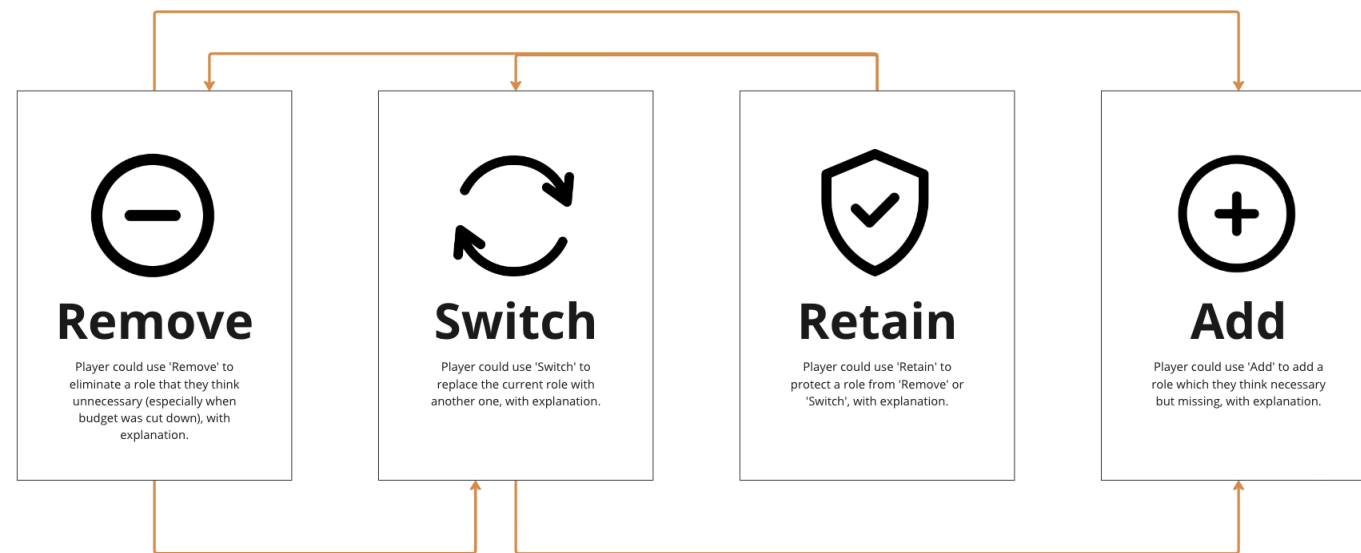
Figure 7.1 Function cards mechanism

Figure 7.2 Color coded post-its, role cards, and function cards

Phase	ENGAGE	DREAM	DESIGN	DEVELOP	DRIVE
Objective	Make a deal	Explore client context and frame the problem&vision	Design the concept and validate the solution	Build the MVP and new features	Maintain software in production
Actionable Goals & Milestones	Goal1 Goal2 Goal... Milestone/Quality Gate			Goal1 Goal2 Goal... Milestone/Quality Gate	
Contributor & Added Value	Business Level Management Level Solution/content level				

The workshop has proven the success of this point. However, it also exposed deficiencies of the toolkit:

- The workshop was very time-consuming. There were too much to discuss and align in one-go, which is not possible. Even being pushed by the researcher several times, participants were only able to complete the first three phases of Project Journey out of the five within a 3-hour session.

- Although strongly encourage communication between disciplines and promote discussion on roles and value misunderstandings, participants can hardly draw conclusions or document final alignments in the end.

- The toolkit required an experienced facilitator. The group discussion went into chaos during the cross-discipline task, as the rules were not simple and clear enough for participants.

- The imbalanced participants' levels of experience affect the equality among disciplines. For example, A designer participant who has only 3-month work experience found himself difficult to join the conversation. As a result, the voice of Design discipline was partly missing during this session. This reduced the credibility of the final output as a consensual standard across all the disciplines.

- The existence of a fake case limited potentials of an ideal team configuration. Originally, this fake case was intended to help participants understand the significance of creating a Project Journal guideline and to bridge their ideation processes. However, participants couldn't help assigning personnel to this project, rather than roles as a typical standard.

After the offline workshop, the researcher also test the prototype in an online configuration. These participants also affirmed the idea of aligning WoW through interdisciplinary co-creation and the form of gamified interaction. Similar shortcomings like long time consumption and the need of facilitator were reinforced in the online environment.

Participants also commented that the workshop would be 'more interactive and engaging in-person'. However, **researcher decided to deliver the toolkit in an online format**.

There are two reasons for this decision:

1. LINKIT is a company working in hybrid. Explorers are accustomed to collaborate online. It is more feasible to provide online toolkit. Because they can still meet and discuss in person while using online tools, but the opposite may not be applicable.

2. The purpose of the toolkit is for participants to reach alignments. It means nothing if there's no conclusion or at least documentation to trace back. With the online toolkit, LINKIT can gain graphical and informational feedback. It is easier to retrieve and save information during and after the session - and on a large scale (as it will be an continuous discussion).

Other points of improvement are:

1. **Split the one-go workshop into two separate sessions, including a generative workshop within discipline, and an alignment workshop across discipline.**

2. **Provide precise and self-explanatory instructions.**

3. **Prescribe the requirements of participants regarding multidisciplinary project experience**

4. **Emphasize on the ideal standard while leave space for adaption in practice**

7.2 Project Journey Embassy: co-creating multidisciplinary WoW

Metaphor

Project Journey Embassy serves as a workshop where participants from various disciplines are gathered to co-create the desirable Project Journey guideline in an online gamified setup.

With the metaphor of 'embassy', every explorer plays the role of ambassador of LINKIT multidisciplinary WoW in doing projects while filling in the Project Journey Blueprint. The workshop is composed of two-part sessions: first generating assumptions internal each discipline, then align WoW including especially the team configuration across discipline.

During the workshop, explorers on behalf of their own discipline speak for the value of themselves and reach alignments on the standard WoW guideline. After the workshop, they are the spokesmen of the LINKIT WoW in front of the client and safeguard the guideline implementation, especially during the project phase they represent. The following sections will introduce the setup of each session unfolded by a variation of business game factors summarized by Gudiksen & Inlove (2018).
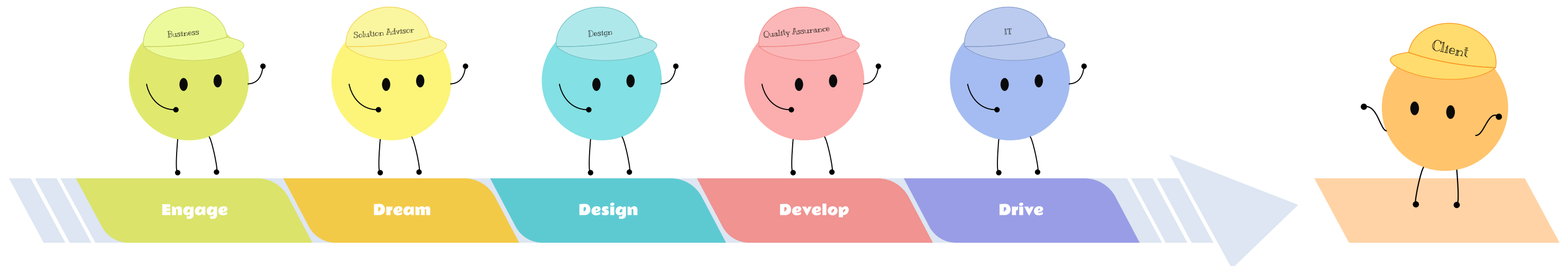
Figure 7.3 Each discipline being the ambassador of respective Project Journey phase

Part I generative workshop within discipline

Purpose

The generative workshop has two goals:

1. Create the maximal team configuration for assigned phase within each discipline respectively. This will prepare all the possible responsibilities and valuable roles for the following session to discuss.

2. Force each discipline to expose their perceptions on other disciplines, especially on the added value of other roles. Each discipline is required to assemble team including roles from other disciplines. The results are based on their assumptions. If there are misunderstandings, it will be proposed during the subsequent cross-disciplinary session by others. It will provide chances to communicate with each other and resolve misunderstandings between different disciplines.

Participation

The fist step of guideline generation takes place within each internal discipline, i.e., each squad at LINKIT. Each squad is the ambassador of one Project Journey phase where they're leading the project in practice. Several explorers who have sufficient experienced in such multidisciplinary project from will be invited by the squad lead to co-create the draft version guideline for their own phase. The squad leads will facilitate this discussion within their squad. They will also ensure that all the conclusions and questions are recorded and bringing to the subsequent session to discuss with other disciplines.

Challenge

The task of this session is a mapping challenge. Participants are supposed to go through 6 steps on the Project Journey blueprint to break down each phase and map the ideal team configuration in order to build the guideline.

Rules

Every discipline has an allocated color code. Participants are asked to use color coded props to emphasize the representative of discipline. This makes it easier (criteria easy) for participants to differentiate roles from each discipline and capture the discussed point during discussion.

Apart from the color coded rule, there are several codes of conduct:

- Be active in groups, speak out your thoughts
- Listen to others by heart
- Roles are not real person. Don't feel or mean offensive to anyone personally when talking about a certain role.

Materials (figure 7.4)

- Online collaborative platform Mural (LINKIT has license)
- Project Journey 2.0 as reference
- Project Journey Blueprint working space
- Color coded props including post-its, role cards, bench list etc...
- Elaborate process and toolkit instructions with a simulated example
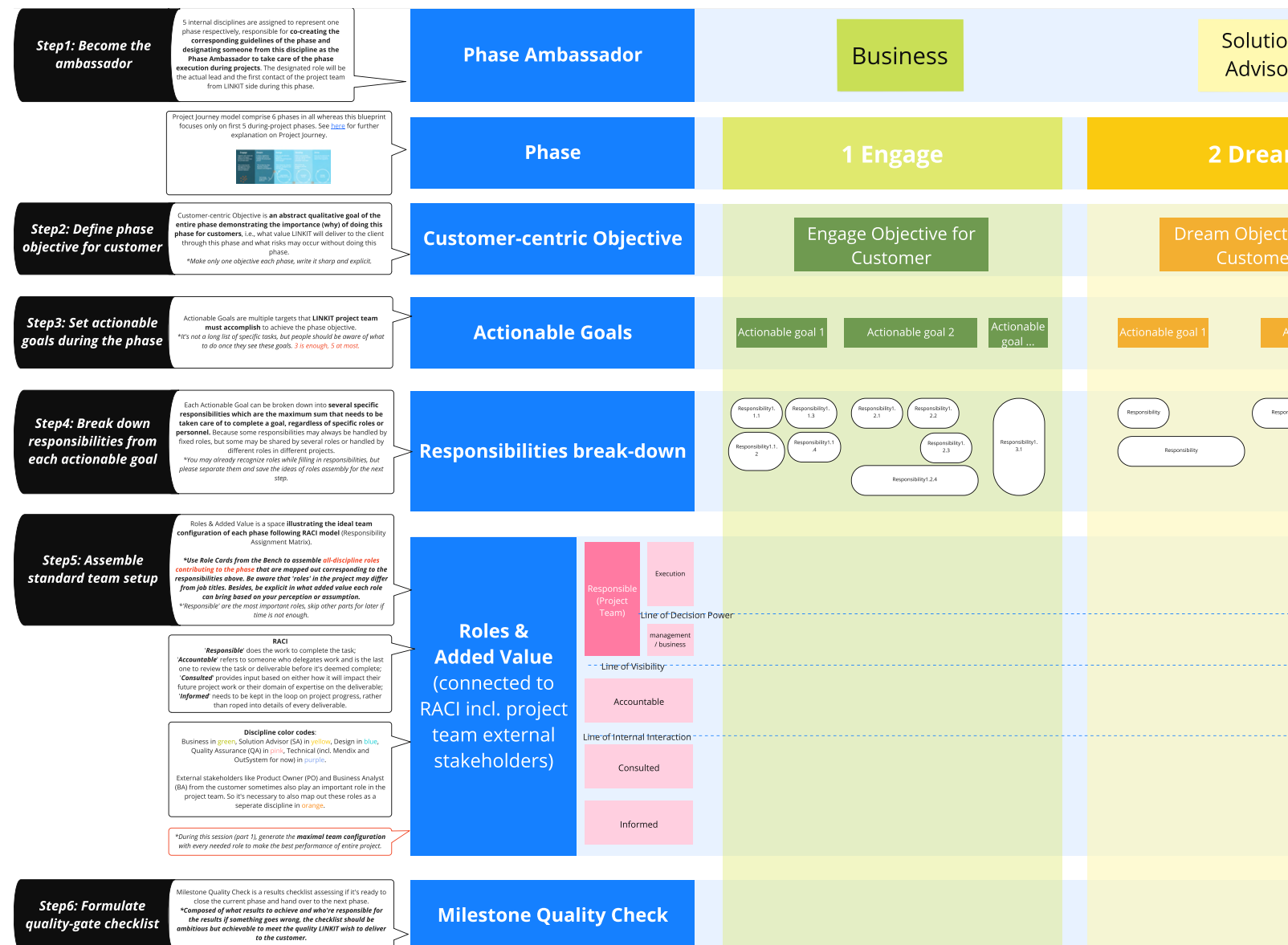
Figure 7.4 Generative workshop setup

Part II alignment workshop across discipline

Purpose

The alignment workshop has two goals:

1. Reach mutual agreements on the entire multidisciplinary PJ guidelines across five internal disciplines, including both ideal team configuration and a minimum viable team (MVT) setup.

2. Create a space for cross-discipline communication to mitigate and resolve misunderstandings, improve value understandings between different disciplines.

Participation

This session of guideline alignment takes place among five internal disciplines. All the squad lead are supposed to join the session on behalf of their discipline. They have facilitated the previous session, they are familiar with the outcome and where there are doubts and uncertainties. More importantly, they are with a balanced sufficient professional experience.

Besides, an extra explorer who is responsible for Project Journey development must join to facilitate the process and ensure that participants reach alignments to some extent. The facilitator also needs to make sure all the conclusions are documented on the blueprint.

Challenge

This session unfolds as a decision challenge. Participants are supposed to complete 3 missions (figure 7.5): review phase elaboration, align ideal team configuration, and a simulated team assembly practice. Mission 3 has an actual purpose of voting on Minimum Viable Team (MVT) which is hidden from the participants. In this way they make an easier decision on excluding certain roles.

Each comprises an individual task followed with a group discussion to reflect on and revise the outcomes of previous-part sessions. Participants are supposed to interact with the help of color coded props to discuss and align the guideline. In the end, a complete Project Journey Blueprint will come out illustrating LINKIT multidisciplinary WoW.

Rules

Rules are the same as the first session. The color codes are relatively important at this stage to capture thoughts from each discipline in an intuitive way for continuous discussion after this session.

Materials

- Online collaborative platform Mural (LINKIT has license)
- Project Journey 2.0 as reference
- **Filled-in** Project Journey Blueprint as working space
- Color coded props including post-its, role cards, bench, function dots, pins, etc
- Elaborate process and toolkit instructions with a simulated example

Figure 7.5 Missions of alignment workshop

7.3 Group evaluation

Session

To verify whether the toolkit can meet the design criteria, the researcher organized a mini session. Three explorers from Design, Quality Assurance, and Tech discipline respectively participated in the simulated co-creation. A solution advisor was invited to observe the session and gave feedback. On the basis of a pre-generated WoW guideline for Design phase, participants went through part II workshop, i.e., the cross-discipline alignment on Design phase guideline.

Figure 7.6 shows the outcome of this session, clearly indicating the points of intense discussion. Although the conversation hasn't reached to any decision level due to the time limitation, this try-out demonstrated the effectiveness of the toolkit as a facilitation of interdisciplinary communication and WoW alignment.
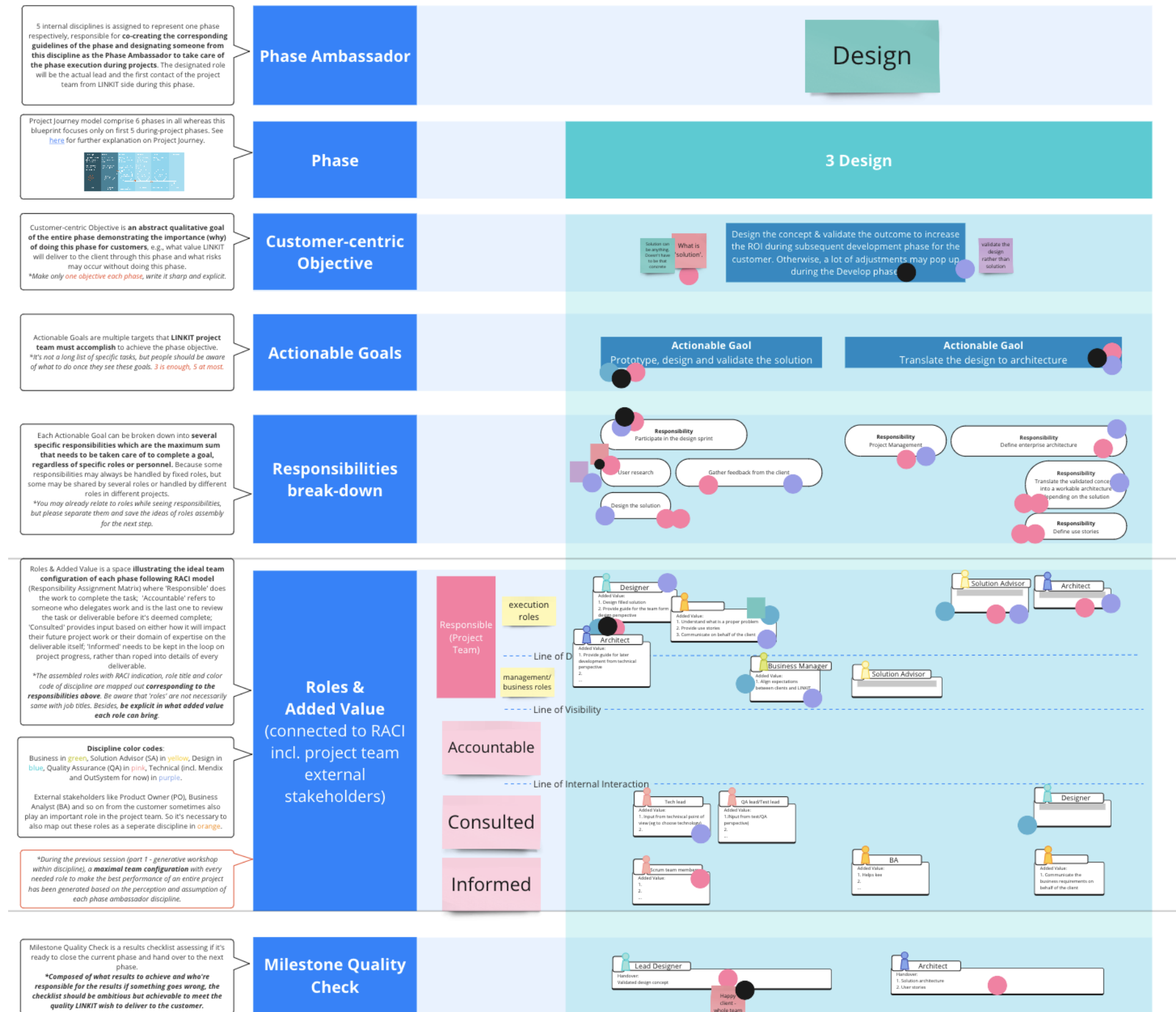
Figure 7.6 Simulated session outcome

Results

A participants mentioned that 'there are many people willing to help in promoting multidisciplinary projects, but don't know how'. And the Project Journey Embassy workshop could provide the chance for these people.

After going through all the missions, all participants including the observer were asked to fill in an assessment form (Appendix 6) reflecting on the design criteria of the framework and the toolkit separately. The researcher also carried out 1v1 conversational reflection with each of them after the session.

They all agree that Project Journey Blueprint serves as a straightforward and consensual multidisciplinary WoW framework, and Project Journey Embassy workshop provides an easy-to-use toolkit for them to co-create the WoW guideline under guidance. They also held a positive attitude to use the toolkit for other purpose apart from guideline generation.However, they raised neutral feedback or concerns for other design requirements.

Looking into the future implementation, 3/4 participants worried whether LINKIT could act and adapted as the guideline formulated when doing projects. The blueprint itself worked well in elaborating the actionable multidisciplinary WoW. But they felt the influences from customers, especially larger client, may decline the effect of this guideline to foster the continuity of LINKIT WoW. And current organizational hierarchy of squads and operating model of salesforce might become an obstacle for adoption. Furthermore, even though the blueprint had embodied the abstract Project Journey, convincing the clients would remain challenging without a compelling example case.

> *"I believe this blueprint can work but influences from customers, especially larger clients can (and will affect) the roll out within the project. I hope that LINKIT is able to sell this blueprint to customers."*
> *--Developer, Tech*

The researcher had framed the instructions to be as self-explanatory as possible. However, due to the massive amount of information, 3/4 participants found the process of the session smooth because of the facilitator's guidance rather than the clarification with written instructions. This indicates the necessity of having a facilitator to guide the process. Besides, it is essential to have someone stop participants from distracting on topics unrelated to WoW and drag the conversation back on track. In addition, This session once again confirmed the significance of having participants from each discipline with rich and balanced experience. This will ensure that discussions can occur on an equal and smooth footing.

A participant also made a comment on terminology. He suggested to provide upfront explanation on keywords to prevent misinterpretation from affecting the communication. This coincides with the necessity of language unification found in previous research.

> *"Keywords can be misinterpreted. Maybe providing upfront an explanation on what they mean can help envision the main topic. I think at the beginning, I confused the word Design and Design concept. I was looking into it as a Designer perspective. As I understood along the session it was more of a mutli-role approach."*
> *--Tester, Quality Assurance*

Future development

Combining the observation and participants' feedback, the researcher made some recommendations for future development of the toolkit and the multidisciplinary WoW:

- Call for volunteers across the organization on Project Journey development

- Familiarize the facilitator who might not be experienced enough with the toolkit by a playbook or a walk-through training

- Hold the workshop either online or in-person. The hybrid is not recommended because it makes communication harder and may cause misunderstanding about purpose of the session. Physical setup will encourage more interaction than digital ones.

- Create an example case through an internal project as concrete showcase to train explorers and a strong proof to convince the customer.

- Consider establishing a universal term index for communication between different disciplines as part of the WoW framework in the future.

- Adjust the organizational structure and operating model to increase the incentive of frontline explorers to sell and carry out multidisciplinary Project Journey projects covering more than Develop phase.

Chapter 08

Implementation Approach

In this chapter, the researcher will introduce a 3-stage approach to assist LINKIT in adopting the Project Journey Blueprint in project practice, and to continually reflect on and update the WoW guideline to foster the continuity of multidisciplinary collaboration for problem-solving business goal in the long term.

8.1 3-stage implementation approach

Even with LINKIT's formulation and publication of the detailed, actionable multidisciplinary WoW framework and guideline for problem-solving projects, their effectiveness relies on the awareness and adoption by the explorers. Without their buy-in, the Project Journey Blueprint would remain a mere gimmick, serving no practical purpose. If LINKIT continues to conduct projects in the current reactive manner, they will continue to face difficulties when it comes to scaling up projects and building a more sustainable business. This would not only render the project meaningless but also fail to address the transformation challenges LINKIT currently encounters in its journey toward problem-solving innovation. To motivate explorers to embrace the blueprint, the implementation process, inspired by the change management model PDCA from the literature, is structured into three distinct steps.

Stage 1: Bottom-up co-creation

Starting from the conclusion of this project, LINKIT can enter the first stage: drafting the initial version of the multidisciplinary WoW guideline. With the assistance of the Project Journey Embassy toolkit, LINKIT's explorers can reach a consensus on multidisciplinary WoW from the bottom up. Those who have had thoughts and opinions about a consistent way of working will have the opportunity to express their views and be partially accepted through organizational interdisciplinary discussions. This will motivate them to adopt and promote LINKIT WoW more actively in subsequent implementations.

Stage 2: Organization-level PDCA

Once the initial guideline is unanimously approved by all disciplines, it will be disseminated and promoted across the organization, with a particular focus on the IT&Innovation division involved in consulting business. This will take place through various channels, including but not limited to bi-weekly company gathering, team meetings, and online information portals, to raise awareness among all relevant explorers (*criteria 'sharable'*).

Subsequently, the implementation of the guideline will be gradually rolled out across the organization, following a quarterly cycle of Plan-Do-Check-Act. The 'Plan' phase aligns the latest WoW practices during Quarterly Business Review (QBR). The 'Do' phase involves putting multidisciplinary WoW into practice and carrying out retrospective during projects. The 'Check' phase involves monitoring and reflection, with the 'Act' phase refreshing the guideline on a quarterly basis. Iterations of the WoW will be made as the company's business evolves, creating an ongoing development loop (*criteria up-to-date*).

Stage 3: Project-level PDCA

Organizational-level 'Do' phase encompasses the PDCA of each project. LINKIT currently employs the Scrum methodology, naturally aligning with the PDCA process. The Project Journey Blueprint serves as a multidisciplinary collaboration manual, supporting task planning, project management, and process impediments discovery and resolution. With an intuitive team configuration and responsibility distribution, team members know whom to contact when issues arise (*criteria 'responsible'*). Each phase ambassador discipline will have one team member taking care of this process during their leading phase. For example, the Scrum Master for QA squad will manage the Develop phase.

Notably, at the end of each project, a dedicated process retrospective identifies recurring issues related to multidisciplinary WoW and deviations from the guideline. These findings should be reported to the relevant ambassador disciplines (preferably squad lead) respectively to expose areas for improvement during the next organizational update.

Given the Blueprint's complexity, testing early versions in a couple of projects is recommended, and gradually expanding them as the guideline matures.

8.2 Future development

There are different types of projects covering different Project Journey phases. An in practice, no project will be exactly the same as the standard guideline. Even though the Project Journey Blueprint offers a modular reference, it doesn't comprehensively differentiate approaches for various service outcomes. LINKIT could further develop the blueprint into several versions to articulate boundaries for different circumstances.

Besides, LINKIT does projects for diverse customers. There are bigger clients who have more influence in adapting LINKIT's WoW, rather than the other way around. Therefore, LINKIT can consider creating customized guidelines for these important clients, while maintaining a degree of continuity in WoW.

Chapter 09
Conclusion and discussion

This chapter will wrap up the project with conclusions and discussion. Concluded in research findings and delivered solution, the limitation and future directions of the solution are discussed. In addition, there is a self-reflection of the project execution from the researcher.

DRIVE

9.1 Conclusions

The researcher conducted generative design research to explore the context of LINKIT's solution consulting business. This research revealed an essential need to enhance a continuous multidisciplinary way of working (WoW) in project practices under the guidance of Project Journey, aligning with the company's business transformation goal towards problem-solving innovation. After context mapping analysis, LINKIT WoW was concluded in four dimensions:

1. Definition of roles and responsibilities of a project team
2. Standard project procedure in details
3. Scrum methodology
4. Other practicality baselines

With the decision of integrating the definition of roles and responsibilities into Project Journey procedure, a three-part solution has been designed for the organization to align and implement a comprehensive and consistent multidisciplinary WoW:

Project Journey Blueprint, a multidisciplinary WoW framework

Unfolding the five-phase Project Journey in the form of a service blueprint, the researcher delineated seven factors to interpret the multidisciplinary WoW framework.

Compared to the previously used RACI matrix, Project Journey Blueprint is more concise, intuitive, and actionable. It replaces the task-based structure with a value-based illustration, making it more effective in conveying the value of each role to the customer.

The blueprint serves in reducing misunderstandings between different disciplines, fostering a more efficient and effective multidisciplinary collaboration, and enhancing the quality of project outcomes.

Project Journey Embassy, a two-part co-creation toolkit for WoW guideline making

Aligning WoW from the bottom up can promote awareness and continuous implementation across the organization. The researcher developed an online gamified toolkit called Project Journey Embassy. It aims to evoke a sense of ownership among individuals in each discipline regarding the Project Journey.

The toolkit consists of two sessions. First during a generative workshop within each discipline, they creates an ideal team setup for their respective Project Journey phase based on their understandings of all disciplines and roles. The outcomes are then discussed in an alignment workshop involving all discipline leads. Ultimately, they will reach a consensus on the ideal multidisciplinary project practice and a Minimum Viable Team (MVT) that can ensure solution quality even in extreme cases. The filled Project Journey Blueprint, agreed upon across disciplines, will serve as the company's multidisciplinary WoW guideline in future projects.

A three-stage implementation approach to bridge the guideline into practice

The first stage is the bottom-up co-creation as mentioned above. Once the first version of the guideline comes out, it will be published and promoted through various channels across the organization. This leads to the second stage, the organizational-level PDCA.

In the second stage, the Project Journey Blueprint will undergo testing in real-world cases, reflection, and adjustment on a quarterly basis. As the company develops in the long term, this stage becomes an ongoing cycle. The multidisciplinary WoW will achieve a resilient continuity.

The third stage expands on the 'Do' in the second stage, which is the project-level PDCA. Project Journey Blueprint will be tested and reflected upon in actual projects. Insights about multidisciplinary WoW gained during project processes will be reported to the assigned discipline ambassadors and discussed at in the next organizational-level 'Check' moment.

9.2 Limitation

The Project Journey Blueprint serves as a standardized WoW for problem-solving projects, but it does not imply that every project must strictly adhere to this guideline. Each project has its own circumstances, and the blueprint provides a reference for the majority of situations. The specific WoW may need adjustments based on the type of project and the specific circumstances at hand. However, this project did not define the scope of acceptable deviations from the guideline or address how to preserve LINKIT WoW when dealing with demanding clients.

Furthermore, when creating the framework, several technical squads covering different technologies were treated as an identical discipline. And the project procedure was simplified based on the low-code squad, which is currently the most involved in consulting projects. In reality, projects utilizing different technologies may have variations in their processes. LINKIT envisions to also take on multi-technology projects in the future, and the current guideline may not fully apply to them.

Given that many of LINKIT's explorers often work remotely, the Project Journey Embassy toolkit has been tailored for online setup. However, the workshops during the design process have proven that face-to-face co-creation is more interactive than digital ones. It fosters more focused and in-depth discussions, and deeper engagement, allowing issues to be more prominently exposed and effectively addressed. The online setup may limit the efficiency of the WoW alignment to some extent.

9.3 Implication

For LINKIT

As mentioned in the limitation, no project is exactly the same. Thus, a potential future direction to further development can be distinguishing between various approaches for different types of project, especially those involving different technologies. Another direction could be the customization of multidisciplinary WoW for different types of clients. This would necessitate further studies focusing on the target market.

The established Project Journey Blueprint can serve as an internal project execution guideline and a training manual. Project Journey Embassy toolkit can also be used as a simulated training tool for explorers who haven't done any projects. Externally, it can be used as a demonstration when sales personnel introduces and promotes problem-solving services and LINKIT WoW to customers. To enhance credibility and client understanding, LINKIT can consider conducting a sample project that closely follows this blueprint, offering a more concrete showcase of its value.

For the industry

Project Journey Blueprint offers a potential WoW framework for multidisciplinary projects within the whole IT industry. This framework can be applied to most problem-solving projects, as they often share a common structure and process flow. This blueprint aims to enhance collaboration and efficiency, making it a valuable resource for IT organizations seeking to improve their project practices and deliver innovative solutions.

9.4 Personal Reflection

During the entire process of my graduation project, I have reflected my execution from time to time and identified several areas where I performed well and areas that require improvement.

The strengths of my project include effective stakeholder management, particularly in managing client's expectations. I maintained a clear line of communication with the client, ensuring their needs and objectives were addressed but within a practical scope. Additionally, I was responsive to feedback and could adapt and take action based on the received input.

However, there are several areas in which I can improve:

Firstly, my interviewing technique needs improvement. Instead of interrupting interviewees sometimes upon hearing interesting points, I should practice more patience and allow them to complete their sentences before delving into follow-up questions. This will lead to more comprehensive and insightful conversations.

The duration of the project was relatively long. At times, I found myself losing track of the initial project scope and focus, almost deviating from the intended path. Luckily I addressed the problem by looking back. However, I should make it a habit to regularly review key conclusions and ensure the project's consistency and alignment with the original scope and focus.

Another area for growth is my communication skills. Some of the insights I presented came across as too direct and harsh. Initially, I did not consider the audience's feelings and reactions. I need to learn how to frame my insights in a more positive tone to improve the receptivity of my ideas. I became aware of this issue toward the end of the project, thanks to the feedback from the supervisor team.

Lastly, my storytelling skills require refinement. Sometimes, I included an overwhelming amount of details, causing the audience to lose sight of the main message. I need to work on presenting the project in a more structured and focused manner to ensure that the main points are highlighted without causing confusion.

In summary, my graduation project journey was a valuable learning experience. By recognizing these strengths and points for improvement, I can continue to develop and refine my skills for future career.

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Glossary

PJ	Project Journey, LINKIT's concept for consulting project best practices
WoW	Wow of working
PJ Blueprint	Multidisciplinary WoW framework
PJ guideline	Multidisciplinary WoW guideline
PJ Embassy	Co-creation toolkit for Project Journey guideline generation
MVT	Minimum Viable Team
squad	LINKIT functional team
explorer	LINKIT employee
Sales	Business (Development) Manager, job title
SA	Solution Advisor, discipline and job title
QA	Quality Assurance, discipline and squad title
PM	Project Manager, job title
SM	Scrum Master, job title
Tech /IT	Technology discipline including 4 technical squads
PO	Product Owner, a role usually from clients
BA	Business Analyst, a role usually from clients

Appendix

Appendix 1 Project brief

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DESIGN FOR *our* future

IDE Master Graduation
Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT
Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME
Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy".
Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name	Liu	Your master programme (only select the options that apply to you):
initials	T. given name Tongshu	IDE master(s): ( ) IPD ( ) DfI (★) SPD
student number	5335744	2nd non-IDE master:
street & no.		individual programme: _ _ - _ _ (give date of approval)
zipcode & city		honours programme: ( ) Honours Programme Master
country		specialisation / annotation: ( ) Medisign
phone		( ) Tech. in Sustainable Design
email		( ) Entrepeneurship

SUPERVISORY TEAM **
Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair	Giulia Calabretta	dept. / section: DOS/MCR
** mentor	Katrina Heijne	dept. / section: DOS/MOD
2nd mentor	Jimmy Iliohan	
	organisation: LINKIT	
	city: Utrecht	country: Netherlands

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

Second mentor only applies in case the assignment is hosted by an external organisation.

Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

comments (optional)

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Procedural Checks - IDE Master Graduation

APPROVAL PROJECT BRIEF
To be filled in by the chair of the supervisory team.

chair _____ date 20 - 04 - 2023 signature _G. Calabretta_

CHECK STUDY PROGRESS
To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair.
The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: 36 EC   (★) YES   all 1st year master courses passed

Of which, taking the conditional requirements into account, can be part of the exam programme 30 EC   ( ) NO   missing 1st year master courses are:

List of electives obtained before the third semester without approval of the BoE

name Robin den Braber   date 21 - 04 - 2023   signature _RdB_

FORMAL APPROVAL GRADUATION PROJECT
To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **.
Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: (V) APPROVED ( ) NOT APPROVED

Procedure: (V) APPROVED ( ) NOT APPROVED

comments

name Monique von Morgen   date - KB 2/5/2023   signature _MvM_

Initials & Name T. Liu   Student number 5335744

Title of Project Early-stage Multidisciplinary Co-creation in LINKIT Project Journey

Appendix

Appendix 1 Project brief

Early-stage Multidisciplinary Co-creation in LINKIT Project Journey   project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date   12 - 04 - 2023   15 - 09 - 2023   end date

INTRODUCTION ✱✱
Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

It has became a trend to see experts across functions collaborating in business context (Schaubroeck, Tarczewski & Theunissen, 2016). More and more companies has started to build up innovation centre composed of employees from diverse disciplines. Some of them like Philips even generate and publish their own models to guide co-creative innovation (Figure 1). However, the conflict value and misunderstanding among different stakeholders become one of the biggest obstacles to innovation (Mele,2011). The value of design facilitating such multidisciplinary co-creation to accelerate and promote innovation (Leavy, 2012) has been approved in academic research and professional practices. Nevertheless, companies do not always have in-house design professionals in the role of innovation facilitator, especially those that claim to be technology-driven.

LINKIT is a knowledge-driven IT partner, that is specialized in solving IT challenges for their clients. A widespread problem they see from the whole industry is that the IT manager feels misunderstood by the general manager about the solution they come up with while the general manager sees the IT perspectives lack of proven business value. LINKIT believes that these misunderstandings are caused by no shared vision on a future-proof IT landscape and failing governance on large-scale IT initiatives. Besides, the value of design in the early stages is often underestimated in an IT project, where design could help bridge the gap between IT and business by facilitating joint collaboration to build a shared vision of the project and mutual understanding among stakeholders.

LINKIT IT&Innovation department has developed a co-creative innovation process namely Project Journey (Figure 2) to combine Design Thinking and Agile Development in a multidisciplinary team involving employees in business, IT technology, design and organization management to increase the understanding of the value of users and other stakeholders and also to accelerate the value delivery to their clients. Their clients often come to them with a problem where the solution seems to be clear already. To challenge that for innovation, LINKIT wants to start the project with a Dream and Design phase to explore the real problem behind the request and potential solutions before going directly into development. While the ideal scenarios seem promising, most projects implementing Project Journey now as sold as part of Development and Drive phase so the earlier stages are only covered partly in many cases in practice. In addition, the project members are sometimes mixed up of employees from both LINKIT and their clients. So the responsible roles in the early stages and way of working could be different from project to project, making it even more difficult to organize a seamless collaboration among stakeholders.

Schaubroeck, R., Tarczewski, F. H., & Theunissen, R. (2016). Making collaboration across functions a reality. Mckinsey Journal.
Mele, C. (2011). Conflicts and value co-creation in project networks. Industrial marketing management, 40 (8), 1377-1385.
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Initials & Name   T.____ Liu   Student number 5335744
Title of Project   Early-stage Multidisciplinary Co-creation in LINKIT Project Journey

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introduction (continued): space for images

Discover
We immerse ourselves in people's daily lives and explore the wider context of their challenges.

Ideate
To transform insights into ideas, we explore creatively, then analyze and converge on potential solutions.

Frame
Based on the current situation, we define the challenges and opportunities at hand.

Build
To make ideas tangible, we build prototypes, test them with users and draw insights to move forward.

image / figure 1:   CoCreate Approach of Philips
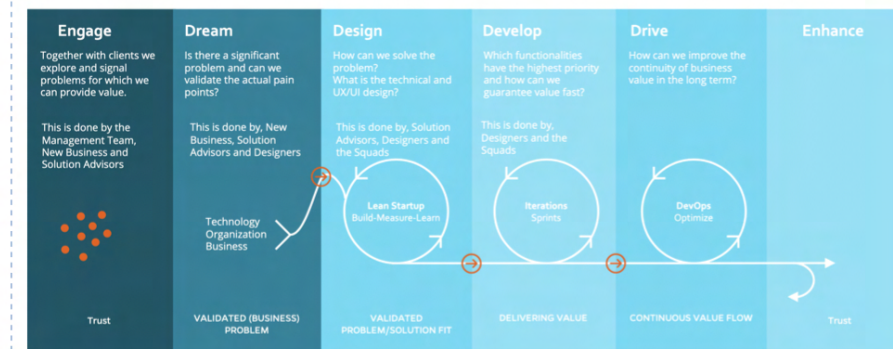
image / figure 2:   Project Journey of LINKIT

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Title of Project   Early-stage Multidisciplinary Co-creation in LINKIT Project Journey

Appendix

Appendix 1 Project brief

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PROBLEM DEFINITION **
Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Innovation is one of the three strategic pillars of LINKIT. IT&Innovation is an innovation department in LINKIT that provides IT consulting services to their external clients. They would like to improve their earlier involvement in new projects and facilitate multidisciplinary co-creation to accelerate innovation and promise the success of end results. This is the reason why they introduce Project Journey as a desired working process. They hope to always start a project with a Dream and Design phase where LINKIT explores the problem behind the client's given problem and the potential for innovative solutions. However, project members from different disciplines (like IT, business and etc) sometimes consist of employees from internal LINKIT and clients and hold various perspectives which sometimes brings misunderstanding or even conflict between each other, making it not as smooth as imagined during the collaboration, and thus could affect the end results delivered and value convincing to their clients. LINKIT believes such a problem could be tackled by early-stage co-creation among these stakeholders to generate a shared project vision and understanding of the value and impact of each other. But there are currently no specific steps or methods to coordinate these activities. Though Solution Advisor is positioned as the leading role of a project at LINKIT and takes ownership, the actual responsibilities and working methods and processes could greatly differ among projects and different people in charge, which takes much time and effort to coordinate. So LINKIT needs to have a standard guideline and corresponding tools supporting Solution Advisor in the multidisciplinary co-creation facilitation in the early stages.

ASSIGNMENT **
State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

This graduation aims to explore the current co-creation practice at LINKIT (mainly in IT&Innovation department) and the misunderstandings about the value and/or impact of different roles (mixed from internal LINKIT and their clients) in a project team, and to propose solutions to address the multidisciplinary co-creation during early stages of the innovation process.

This graduation project will explore and research on the whole Project Journey (Figure 2), but focus on early stages - Dream and Design phase to generate a practical solution for Project Journey at LINKIT to mediate the misunderstanding among different disciplines involved in the project team.

Potential outcomes:
A set of co-creation guidelines with an applicable toolkit about how to engage multidisciplinary stakeholders to reach shared understandings/agreements on the value/impact of each discipline that they could contribute to the end results in an IT project.

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Title of Project   Early-stage Multidisciplinary Co-creation in LINKIT Project Journey

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TUDelft

PLANNING AND APPROACH **
Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 12 - 4 - 2023   15 - 9 - 2023 end date
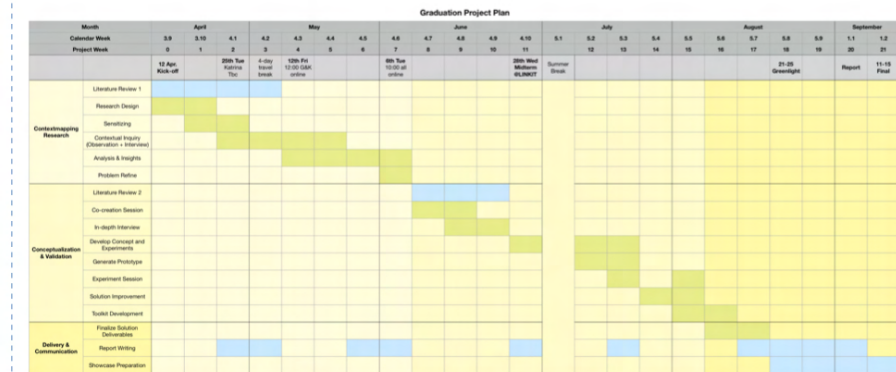
*The schedule includes some public holidays and travel break, so the 100 working days last 22 weeks instead of 20 weeks.

Approach:

1 Contextmapping research
1.1 Explore the current collaboration among stakeholders in each phases at LINKIT, reframe the problem if needed
1.2 Mapping out the common collaboration patterns, identify roles and disciplines involved
1.3 Recognize the value/impact of different roles to the end results

2 Conceptualisation & Validation
2.1 Explore when and how to define the contribution of each discipline/role in a project in co-creating with each other
2.2 Develop solutions and fast validate in ongoing projects
2.3 Finalize the solution and develop tookits

3 Delivery & Communication
3.1 Finalize deliverables to the client
3.2 Thesis writing
3.3 Public showcase

IDE TU Delft - E&SA Department /// Graduation project brief & study overview /// 2018-01 v30   Page 6 of 7
Initials & Name   T.   Liu   Student number 5335744
Title of Project   Early-stage Multidisciplinary Co-creation in LINKIT Project Journey

Appendix

Appendix 1 Project brief

TUDelft

MOTIVATION AND PERSONAL AMBITIONS
Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... Stick to no more than five ambitions.

During my bachelor when I was studying Industrial Design, there were many times that I was inspired for my design by my friends who are non-designers while we're chatting relevant or sometimes irrelevant topics. There were also moments when a single sentence of interviewee brought me a brilliant idea. I conducted such unconscious "co-creation" when I even have no idea about the method and the term itself.

After I started my master's study of Strategic Product Design at IDE, I learned and discussed co-creation methods during the course Design Theory and Methodology in the first semester. I remember there was a week with the topic of participatory design. My interest in the power of co-creation/co-design grew from there. But I haven't had a chance to try it in a non-designers world until later during my internship as a service designer at Philips, where I saw the value of design facilitating co-creation among stakeholders from different functions in the business context to promote future-oriented innovation. However, there are problems about bridging the gap among different disciplines and stimulate these non-designers' bold innovation. Without clear guidelines and/or tools, I was experimenting and exploring in practice. This was where I came up with the initial idea of my graduation project.

Besides the topic itself, I would like to prove and learn several competences as a strategic designer:

Firstly, I want to apply my contextmapping skills acquired here at IDE to my graduation project. This project is a design consulting project for my client - knowledge-driven IT consultancy LINKIT and important stakeholders are employees in different functions within the company. So it's essential to first immerse myself in their context and understand their daily life at work to empathize with them deeply. The contexmapping will be the solid foundation of the solution I'm going to develop.

Secondly, I've been conducting several research or design consulting projects in teams in the past few years. This is the first time that I can individually lead a project and design for a client. I can imagine that it would be a good chance to practice project management and stakeholder management on my own. Both competences are important soft skills for my future career.

Last but not least, IDE is famous for methodology and design toolkits. I'm excited to generate a co-creation toolkit during my graduation in the name of IDE student.

FINAL COMMENTS
In case your project brief needs final comments, please add any information you think is relevant.

Initials & Name   T.   Liu   Student number 5335744

Title of Project   Early-stage Multidisciplinary Co-creation in LINKIT Project Journey

Appendix

Appendix 2 Sensitizing booklet

Hi

Happy to see you here! Thank you so much for participating in my research.

This research is for my graduation project about early-stage multidisciplinary co-creation in LINKIT solution consulting projects (i.e., projects under LINKIT management). I would like to investigate in the **current ways of working in project teams and collaboration among team members from different functions here at LINKIT.** The whole project (incl. this research that you will be involved) is following LINKIT code of conduct. Your participation is an important add-on for LINKIT to improve multidisciplinary team collaboration in the future!

This research will be composed of this **short online sensitizing booklet** on the right and a following **1-hour interview**. Feel free to contact me via Teams chat or email me to tongshu.liu@linkit.nl when you have any questions.

While filling in this booklet, please write down the actual practice rather than the ideal way it should be. And please **finish it at least 1 day before the interview**, so I could use it for better preparation. Are you ready? Let's go!

Sincerely,
Tongshu

1 Personal Profile

[My Name]
[Job Title]

Concrete examples always help researchers to understand your daily experiences. Therefore, let's start with reflecting on a concrete project, a **finished IT solution consulting project** (under LINKIT management)...

Maybe a recently finished project, or a project that I participated where the **collaboration** among team members are memorable was: _____

My **role(s) in this project** was/were _____

I was also **pointed** as _____ in this project

I also **perceived myself** playing the role of _____ in this project

People that I collaborated with in this project were:

* You can use following titles while filling in the blanks on the right, or create new ones if not listed:

Solution Advisor	New Business	Account Manager
Designer	Architect	Developer
platform maintainer	Test Automation Engineer	Project Manager
Scrum Master	Product Owner	...

[Name]
[Job Title]
[Role in the project]

[Name]
[Job Title]
[Role in the project]

[Name]
[Job Title]
[Role in the project]

[Name]
[Job Title]
[Role in the project]

[Name]
[Job Title]
[Role in the project]

Me
[Role in the project]

[Name]
[Job Title]
[Role in the project]

[Name]
[Job Title]
[Role in the project]

[Name]
[Job Title]
[Role in the project]

[Name]
[Job Title]
[Role in the project]

LINKIT

CLIENT

Appendix

Appendix 2 Sensitizing booklet

2 Project Process Map

What phases did you go through during this project? Could you map them below? (Feel free to shuffle the phase cards)

What are the critical moments when there's a blocker/issue or accelerator/enabler **about collaboration or way of working** during the project? Map out on the timeline.

Put your figure where you showed up among these moments.

Phase 0
Project selling & contract sgining

Phase 1
[Title / Description]

Phase 2
[Title / Description]

Phase ...
[Title / Description]

Phase n
[Title / Description]

Project Team set up

Accelerator /enabler

Blocker/ issue

Solution delivered to client

3 Reflection on collaboration scenarios

Could you recall your previous experiences on the way of working among project members, are there any other sharable blocker and/or accelerator moments **in other projects?**

Blocker/issue Scenario

When did it happen:

What happened:

How did you feel at the moment:

What roles were involved in this blocker:

Why it happened:

How it was solved & by whom:

What did you learn from it / What do you think could be improved in the future:

Accelerator/enabler Scenario

When did it happen:

What happened:

How did you feel at the moment:

What roles were involved in this positive practice:

Why it went well:

What did you learn from it / What do you think could be repeated in the future:

4 Speak out

Do you have anything else to express or questions about multidisciplinary collaboration or relevant topics? Feel free to leave any comments here ❤

Appendix

Appendix 3 Interview script

Research Goal:
1. Mapping out current way of project team collaboration
2. Identify roles and cluster the discipline
3. Recognize value/impact of different roles/disciplines, especially the ignored&misunderstood ones

Scope:
- Innovative solution consulting projects (LINKIT wants to grow on), exclude sourcing projects (current main earnings), i.e., Low-code projects & squads (OutSystem & Mendix)
- Roles and processes 'under LINKIT management', i.e., after signing the contract with client, starting from project team setting up until solution delivered
- Within project team

Focus:
- Roles rather than person
- Way of working rather than project contents/deliverables
- Responsibility rather than accountability, i.e., participants are people who really conduct projects and collaborate in the project team
- Self-perceived vs Others perceived contribution/value/impact
- Ignored/misunderstood contribution/value/impact

Research Question Topics:
- Roles & Responsibility in projects
- Actual Practice:
  · Collaborate with whom (roles)
  · Way of collaboration (especially about alignment)
  · Contribution
- Value/impact of a role: self-perceived vs others' comment

⓪ Opening 5min
- Greetings & self-intro
- Intro of research
- Consent: participation, photo, recording etc
- 'Demographic': Job title, professional level, etc

- Empathise focus and scope of the research* *(only once, then follow the intuition)*

---

① Personal Profile (Refer to sensitizing) 10min
- Job title & working years @LINKIT
- What's your daily work as a [Job title] ? What's your unique value for a solution consulting project as a [role]?
- Which roles do you often deal with at work? What's the way you collaborate? How do you feel about it?

[Purge]
- In general how do you feel about the way of working at LINKIT in solution consulting projects?
- Is there anything you think that should be done differently to improve collaboration and teamwork among project members?

---

③ Recent ongoing projects 10min `Skip this part if the participant is talkative`
- What was a project that you recently have been working on??
- What types of project? What is the project team set-up?
- How does it goes so far?
    · Well → What good practice the project team did?
    · Not well → What blocker/issue happened? Why it happens? How to [solve for now] / [improve next time]?

Appendix

Appendix 3 Interview script

④ **Past finished project** (refer to sensitizing) 25-30min
- What's your responsibility in this project? / What are you supposed to do as a [role] in this project?
  · Ask follow-up Qs to differentiate layers of roles and responsibilities if the participant have multiple roles
- Look at [Sensitizing Process Map]
  · Could you introduce these phases a bit?
  · What did you (actually) do during each phase /between phases?
  · **What could you do better?**
- Who did you collaborate with during this project? How?
  · **What kinds of alignments did you have? When&how did you align?**
  · What's their contribution/value/impact in this project?
  · What other value do they have but was ignored/misunderstood?
  · What else do you think they should do (but not)?
- **What're necessary roles for a project? Why they're improtant?**
- Look at [Critical Moment Star]
  → positive
    · What happened?
    · How did you feel at the moment?
    · Why do you think it went well?
    · Who played important roles at that moment? What did they do?
    · What do you think could be repeated for future practice?
  → negative
    · What went wrong? / What happened
    · How did you feel at the moment?
    · Are you there as [role] ? Who else are involved? How?
    · Why this happened / it went wrong? What caused this issue?
    · How it was solved at last?
    · Who solved it? How do you think of his/her reaction?
    · What do you think could be improved for future projects?
  → Also ask what did they do as which role in these critical moment
- How does their/ project members' performance being assessed?
- **We have talked a lot about contribution and value/impact of yourself and your colleagues, how do you understand the terms? What do you think is the differences between them?**

⑤ **Other projects** (Refer to sensitizing) depends
- Discuss [other scenarios] if there's enough time
  · Who played important roles? What did they do?
  · What did you learn from it?

> Skip this part if the participant is talkative

⑥ **Future desire** 5-10min
- In general how do you feel about the way of working at LINKIT in solution consulting projects? What're your suggestions for future improvement?
- **What are the important/unique value of your [role] that you felt ignored/misunderstood by other colleagues? How do you want to raise awareness about this point?**
  (*Ask if they don't mention this in earlier answers*)

Have you ever saw or felt someone's value was ignored or misunderstood in a project team?

Appendix

Due to confidential concern, raw data and statement cards including sensitive information will not be open to the public. Clustered insights are listed here.

Dimension	Category	Cluster	Insights	Message
General	Vision		LINKIT is striving to shift from selling people and/or technology to undertaking more problem-solving projects with multidisciplinary teams.	
			While LINKIT possesses the necessary knowledge and workforce, not everyone has embraced a problem-solving mindset and genuine multidisciplinary collaboration, as some still work in silos.	
Value Perception	Misunderstanding	Between internal disciplines	Internal disciplines don't fully understand each other, bringing obstacles to a seamless multidisciplinary collaboration.	
		Especially by sales	Business roles are structured to be bound to a single technical squad. This limited exposure to other 'support' disciplines like Design and QA can result in unfamiliarity with their value. onsequently, it becomes challenging for them to articulate the value of each role to the client, leading to a tendency to operate in silos rather than as a multidisciplinary team.	
		By clients	Clients can sometimes misunderstand or even underestimate certain roles because their value was not sufficiently and explicitly communicated by LINKIT personnel.	
	The term 'value' interpretation		'Value' differs from 'responsibilities' and can be the same as or different from 'contribution' in various aspects, depending on personal perception.	'Value' is abstract while 'contribution' is concrete.
				'Value' has positive positive meaning while 'contribution' is more neutral
				'Value' is related to results while 'contribution' is actions
				'Value' emphasizes on delivering to the customer
Way of working (WoW)	Continuity of WoW	Communication of WoW	Organizational WoW need to be communicated explicit and well enough to both client and internal people.	
			Clients sometimes misunderstand and even underestimate certain roles because their value was not convey properly by LINKIT people	
		Consensus of WoW	Most participants felt satisfied about the multidisciplinary team collaboration in doing projects at LINKIT because of the agile, natural outspoken communication and etc. But they couldn't explain for sure how they align on the way of working. Because there're seldomly a clear certain alignment moment, some even attribute to luck of having communicative colleagues.	
	Shared definition of roles and responsibilities	Overview definition	Roles & responsibilities are defined to some extent but remain ambiguous in certain roles. E.g., The responsibilities of Solution Advisor are so vague that almost everyone showed different perceptions of their value. There's even no consensus on a defined scope of responsibilities within the SA team. SA takes over wherever there's a gap.	
		division of work	Roles and responsibilities are dynamics. However, the work distribution on undefined areas or inexperienced expertise is not communicated and aligned throughout the team, leading to overlapping responsibilities between each other or multi-disciplinary roles on the same person.	There are multi-layer roles on the same person: sometimes different from different projects, but sometimes several in the same projects, which co-workers are easy to mix up and don't know which role they're playing at which moment
				Similar types of work could be shared by different roles or divided on different level, so responsibilities can overlap: for example, Sales, SA, SM/DM, tech lead all communicate between client and LINKIT, while on different level
		Team setup	Issues like budget sometimes limits the team configuration, resulting in a compromise on a lower quality of the solution with less roles assembly.	
		Contact person	Right now there's no pointed project head who represents the official first contact of LINKIT project team. both SA and sales perceive themselves responsible for the whole project, sometimes clients even contact tech lead for new projects.	

Dimension	Category	Cluster	Insights	Message
Way of working (WoW)	Standard guidelines in detail for each PJ phase	Awareness & communication	Observation: People do know PJ model, but they didn't proactively mentioned PJ when describing the process of a project they've been involved in.	
		Implementation	LINKIT has Project Journey as an ideal process. However, it's on an abstract level which isn't concrete enough to guide the actions.	WoW guidelines like Project Journey are not clear and detailed enough for everyone to understand, align and implement.
				Each discipline has their own best practices within the squad. The successul experiences or learnings from mistakes are not consensual and sharable across disciplines/squads.
	Scrum methodology	Teamwork	Team needs several sprints to adapt to a stable velocity	
			Act as a team. solve as a team	
		Speak-out communication	Agile WoW with scrum methodologies requires team members to be communicative. Now the unwritten rule of being outspoken was always naturally led by extroverted coworkers, otherwise it depends on the scrum master or the team itself to reach the point with experience-based interventions which could fail.	
	Baseline of Practicalities	Agreement / Alignment	The agreements/alignments are not always discussed and written down or updated with everyone related.	
			It's necessary to align with clients about expectations and requirements to safeguard a seamless process.	
		Terminology	Observation: People are expressing the same objects or similar concepts with different terms, which could be confusing especially to new colleagues and external stakeholders.	
		Team dynamics	Team may need to change in setup or WoW and so on following the changing scope or requirements over time	
		Reflection	There's a need for more structured review on WoW to guide people give and receive feedback, and learn from it.	
		Delivery Management	It is immature for delivery management to overly rely on a single personnel as the delivery manager for all the projects.	

Appendix

Appendix 5 Co-creation sessions during conceptualization

Appendix

Appendix 5 Co-creation sessions during conceptualization

Appendix

Appendix 6 Group evaluation session

Phase		3 Design
Customer-centric Objective		Design the concept & validate the outcome to increase the ROI during subsequent development phase for the customer. Otherwise, a lot of adjustments may pop up during the Develop phase
Actionable Goals		**Actionable Gaol** Prototype, design and validate the solution / **Actionable Gaol** Translate the design to architecture
Responsibilities break-down		Responsibility: Participate in the design sprint; User research; Gather feedback from the client; Design the solution / Responsibility: Project Management; Responsibility: Define enterprise architecture; Responsibility: Translate the validated concept into a workable architecture depending on the solution; Responsibility: Define use stories
Roles & Added Value (connected to RACI incl. project team external stakeholders)	Responsible (Project Team) / execution roles / management/ business roles; Accountable; Consulted; Informed	Designer; Client PO; Architect; Business Manager; Solution Advisor / Solution Advisor; Architect / Tech lead; QA lead/Test lead; Scrum team members; BA; Client PO; Designer; Client PO
Milestone Quality Check		Lead Designer; Architect

Project Journey Blueprint

This Project Journey Blueprint provides a straightforward framework for me to understand LINKIT multidisciplinary way of working guideline in doing projects.

○ Strongly disagree   ○ Disagree   ○ Neither agree or disagree   ○ Agree   ○ Strongly agree

This Project Journey Blueprint is the result of co-creation across all disciplines.

○ Strongly disagree   ○ Disagree   ○ Neither agree or disagree   ○ Agree   ○ Strongly agree

I know how to act as LINKIT expected with these guidelines while doing projects in the future.

○ Very unlikely   ○ Unlikely   ○ Neutral   ○ Likely   ○ Very likely

To what extent do you think the you can adapt to different types of projects or circumstances without violating this multidisciplinary WoW guideline?

○ To no extent   ○ To little extent   ○ To some extent   ○ To a large extent   ○ To a very large extent

Project Journey Embassy session

I could understand what task I was supposed to complete during this session.

○ Strongly disagree   ○ Disagree   ○ Neither agree or disagree   ○ Agree   ○ Strongly agree

I could understand what operation I could conduct during each task.

○ Strongly disagree   ○ Disagree   ○ Neither agree or disagree   ○ Agree   ○ Strongly agree

I got sufficient guidance during the session to go through the process.

○ Strongly disagree   ○ Disagree   ○ Neither agree or disagree   ○ Agree   ○ Strongly agree

If there's no host/facilitator, I can still understand what we're supposed to do during the session by reading the instructions.

○ Strongly disagree   ○ Disagree   ○ Neither agree or disagree   ○ Agree   ○ Strongly agree

I agree this toolkit (session set up) can be used for different purposes besides generating guidelines.

○ Strongly disagree   ○ Disagree   ○ Neither agree or disagree   ○ Agree   ○ Strongly agree

Appendix

Appendix 6 Group evaluation session

Project Journey Blueprint

This Project Journey Blueprint provides a straightforward framework for me to understand LINKIT multidisciplinary way of working guideline in doing projects.

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- ○ Disagree
- ○ Neither agree or disagree
- ● Agree
- ○ Strongly agree

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Appendix

Appendix 6 Group evaluation session

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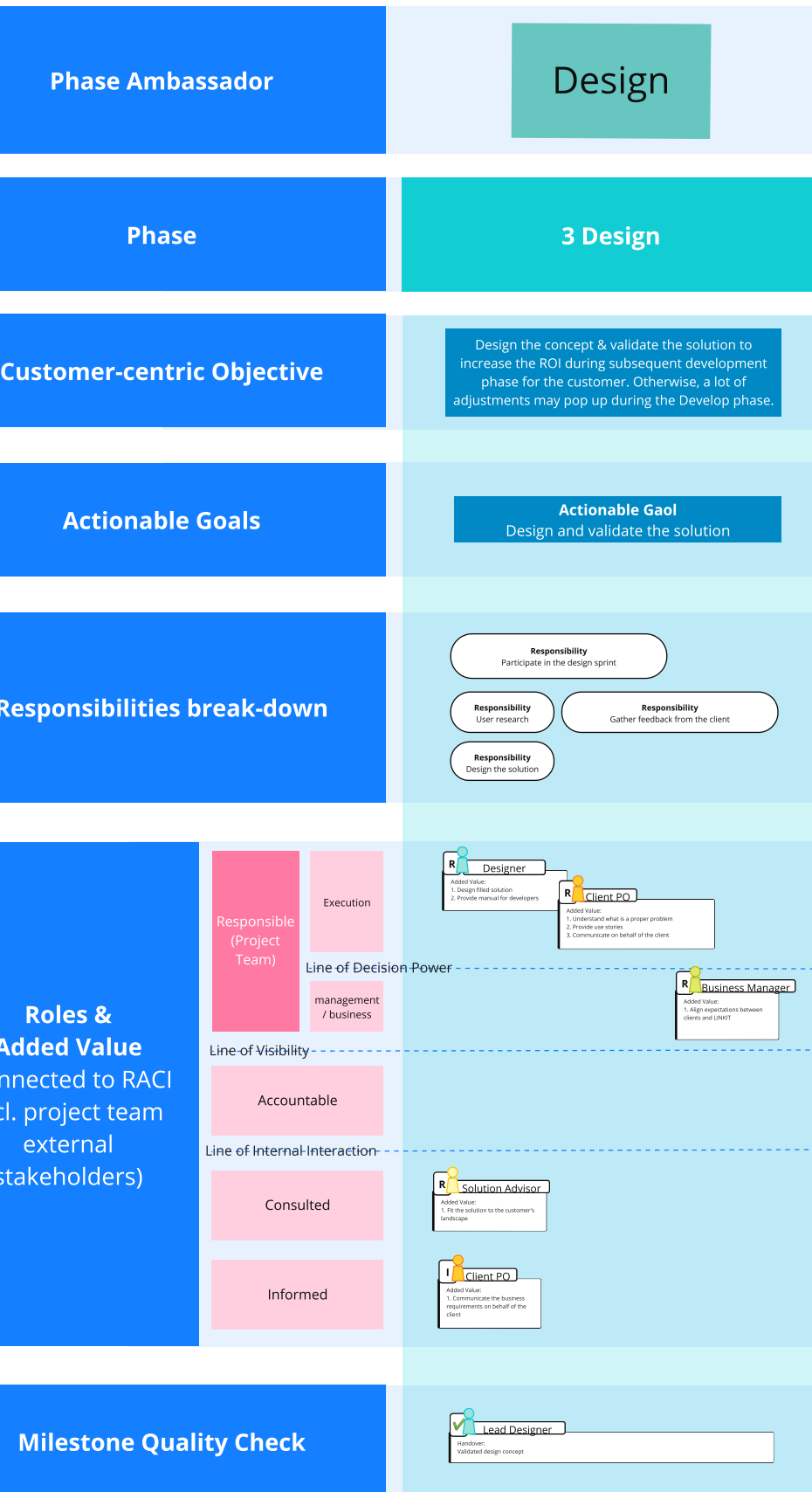
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Appendix

Appendix 7 Project Journey Embassy toolkit

Left panel (swim-lane)

Phase Ambassador	Design
Phase	3 Design
Customer-centric Objective	Design the concept & validate the solution to increase the ROI during subsequent development phase for the customer. Otherwise, a lot of adjustments may pop up during the Develop phase.
Actionable Goals	**Actionable Gaol** — Design and validate the solution

Responsibilities break-down:
- Responsibility — Participate in the design sprint
- Responsibility — User research
- Responsibility — Gather feedback from the client
- Responsibility — Design the solution

Roles & Added Value (connected to RACI incl. project team external stakeholders):

- Responsible (Project Team)
  - Execution
  - R Designer — Added Value: 1. Design filled solution 2. Provide manual for developers
  - R Client PO — Added Value: 1. Understand what is a proper problem 2. Provide use stories 3. Communicate on behalf of the client
  - management / business
  - R Business Manager — Added Value: 1. Align expectations between clients and LINKIT

Line of Decision Power
Line of Visibility

- Accountable

Line of Internal Interaction

- Consulted
  - R Solution Advisor — Added Value: 1. Fit the solution to the customer's landscape
- Informed
  - I Client PO — Added Value: 1. Communicate the business requirements on behalf of the client

| Milestone Quality Check | ✓ Lead Designer — Handover: Validated design concept |

Middle panel

Welcome to Project Journey Embassy

Part 1 : generative workshop within discipline

Dear Ambassadors,

Glad to see you gathered here!

We're here to discuss and generate the multidisciplinary WoW guideline in doing project. The outcome will be a desirable ideal team configuration including all disciplines for your Project Journey phase. Make use of your impression and understanding of the value of others!

Please work together through 6 steps on the right with the help of instructions and/or the facilitator's guidance. Remember, you are the representative and spokesman for your own discipline. Besides, there are some code of conducts during the game, please have a look below before you jump into the missions.
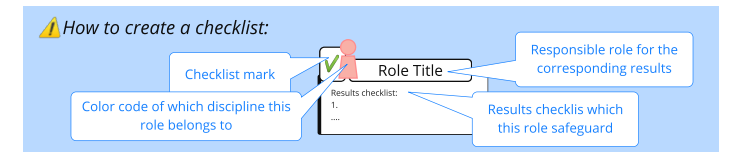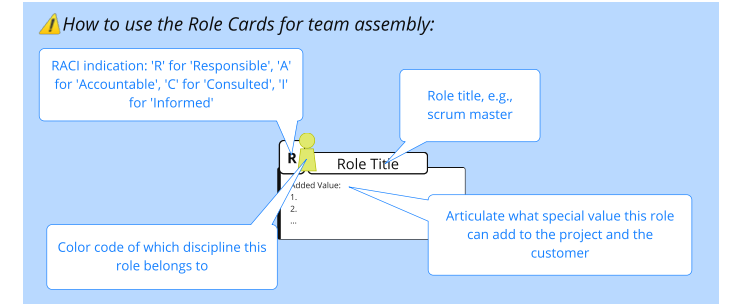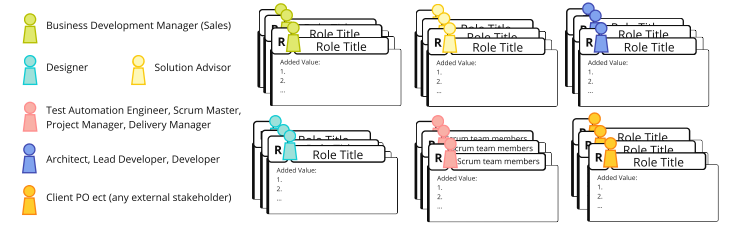
Still no idea how it will go? No worries, you can check the fill-in example on the left. *Note that this example only provides a simulated showcase of how it will look like without confirming the content to be correct.*

Have fun!

Code of Conducts

1. Use assigned color codes in representative of your discipline
2. Be active in group discussion, speak out your thoughts
3. Listen to others by heart
4. Roles are not real personnel.
   Don't feel or mean offensive to anyone personally when talking about a certain role.

⚠️ **Color Code:**
- Business aka. Sales
- Solution Advisor
- Design
- Tech (OS&Mendix)
- Quality Assurance
- External Stakeholders

Role ench

- Business Development Manager (Sales)
- Designer
- Solution Advisor
- Test Automation Engineer, Scrum Master, Project Manager, Delivery Manager
- Architect, Lead Developer, Developer
- Client PO ect (any external stakeholder)

(Role Title cards with R, Added Value: 1. 2.)

⚠️ **How to use the Role Cards for team assembly:**

RACI indication: 'R' for 'Responsible', 'A' for 'Accountable', 'C' for 'Consulted', 'I' for 'Informed'

Role title, e.g., scrum master

R Role Title — Added Value: 1. 2. ...

Color code of which discipline this role belongs to

Articulate what special value this role can add to the project and the customer

⚠️ **How to create a checklist:**

✓ Role Title — Results checklist: 1. ...

Checklist mark

Color code of which discipline this role belongs to

Responsible role for the corresponding results

Results checklis which this role safeguard

Right panel (steps)

Step1: Become the ambassador — 5 internal disciplines are assigned to represent one phase respectively, responsible for **co-creating the corresponding guidelines of the phase and designating someone from this discipline as the Phase Ambassador to take care of the phase execution during projects**. The designated role will be the actual lead and the first contact of the project team from LINKIT side during this phase.

Phase Ambassador

Project Journey model comprise 6 phases in all whereas this blueprint focuses only on first 5 during-project phases. See here for further explanation on Project Journey.

Phase

Step2: Define phase objective for customer — Customer-centric Objective is **an abstract qualitative goal of the entire phase demonstrating the importance (why) of doing this phase for customers**, i.e., what value LINKIT will deliver to the client through this phase and what risks may occur without doing this phase.
Make only one objective each phase, write it sharp and explicit.

Customer-centric Objective

Step3: Set actionable goals during the phase — Actionable Goals are multiple targets that **LINKIT project team must accomplish** to achieve the phase objective.
It's not a long list of specific tasks, but people should be aware of what to do once they see these goals. 3 is enough, 5 at most.

Actionable Goals

Step4: Break down responsibilities from each actionable goal — Each Actionable Goal can be broken down into **several specific responsibilities which are the maximum sum that needs to be taken care of to complete a goal, regardless of specific roles or personnel**. Because some responsibilities may always be handled by fixed roles, but some may be shared by several roles or handled by different roles in different projects.
You may already recognize roles while filling in responsibilities, but please separate them and save the ideas of roles assembly for the next step.

Responsibilities break-down

Step5: Assemble standard team setup — Roles & Added Value is a space **illustrating the ideal team configuration of each phase following RACI model** (Responsibility Assignment Matrix).
*Use Role Cards from the Bench to assemble all-discipline roles contributing to the phase that are mapped out corresponding to the responsibilities above. Be aware that 'roles' in the project may differ from job titles. Besides, be explicit in what added value each role can bring based on your perception or assumption.
'Responsible' are the most important roles, skip other parts for later if time is not enough.

RACI
'*Responsible*' does the work to complete the task;
'*Accountable*' refers to someone who delegates work and is the last one to review the task or deliverable before it's deemed complete;
'*Consulted*' provides input based on either how it will impact their future project work or their domain of expertise on the deliverable;
'*Informed*' needs to be kept in the loop on project progress, rather than roped into details of every deliverable.

Discipline color codes:
Business in green, Solution Advisor (SA) in yellow, Design in blue, Quality Assurance (QA) in pink, Technical (incl. Mendix and OutSystem for now) in purple.

External stakeholders like Product Owner (PO) and Business Analyst (BA) from the customer sometimes also play an important role in the project team. So it's necessary to also map out these roles as a seperate discipline in orange.

*During this session (part 1), generate the **maximal team configuration** with every needed role to make the best performance of entire project.*

Roles & Added Value (connected to RACI incl. project team external stakeholders)

- Responsible (Project Team)
  - Execution
  - Line-of-De
  - management / business
- Line-of-Visibility
- Accountable
- Line of Internal Interacti
- Consulted
- Informed

Step6: Formulate quality-gate checklist — Milestone Quality Check is a results checklist assessing if it's ready to close the current phase and hand over to the next phase.
Composed of what results to achieve and who're responsible for the results if something goes wrong, the checklist should be ambitious but achievable to meet the quality LINKIT wish to deliver to the customer.

Milestone Quality Check

Appendix

Appendix 7 Project Journey Embassy toolkit

Phase Ambassador	Business	Solution Advisor	Design	Quality Assurance	Tech
Phase	**1 Engage**	**2 Dream**	**3 Design**	**4 Development**	**5 Drive**
Customer-centric Objective	Engage Objective for Customer	Dream Objective for Customer	Design Objective for Customer	Engage Objective for Customer	Engage Objective for Customer
Actionable Goals	Actionable goal 1 Actionable goal 2 Actionable goal ...	Actionable goal 1 Actionable goal ...	Actionable goal 1 Actionable goal ...	Actionable goal 1 Actionable goal ...	Actionable goal Actionable goal
Responsibilities break-down	Responsibility1.1.1 Responsibility1.1.3 Responsibility1.2.1 Responsibility1.2.2 Responsibility1.1.2 Responsibility1.1.4 Responsibility1.2.3 Responsibility1.2.4 Responsibility1.3.1	Responsibility Responsibility Responsibility Responsibility	Responsibility Responsibility Responsibility	Responsibility Responsibility	Responsibility Responsibility1 Responsibility1
Roles & Added Value (connected to RACI incl. project team external stakeholders)	Responsible (Project Team) Execution Line of Decision Power management / business Line of Visibility Accountable Line of Internal Interaction Consulted Informed			Line of Decision Power	
Milestone Quality Check					

Appendix

Appendix 7 Project Journey Embassy toolkit

Welcome to Project Journey Embassy!

Part 2：alignment workshop across discipline

Dear Ambassadors,

Glad to see you gathered here!

As you all know, each phase ambassador discipline has already generated the concrete guidelines with their assumed team configuration for their phase respectively. Now it's time to review their work and align among all of you:)

Please complete the following 3 missions with the help of instructions and/or the facilitator's guidance. Remember, you are the representative and spokesman for your own discipline. Besides, there are some code of conducts during the game, please have a look below before you jump into the missions on the right.

Have fun!

Code of Conducts

1. Use assigned color codes in representative of your discipline
2. Be active in group discussion, speak out your thoughts
3. Listen to others by heart
4. Roles are not real personnel.
   Don't feel or mean offensive to anyone personally when talking about a certain role.

⚠️ **Color Code:**
Business aka. Sales
Solution Advisor
Design
Tech (OS&Mendix)
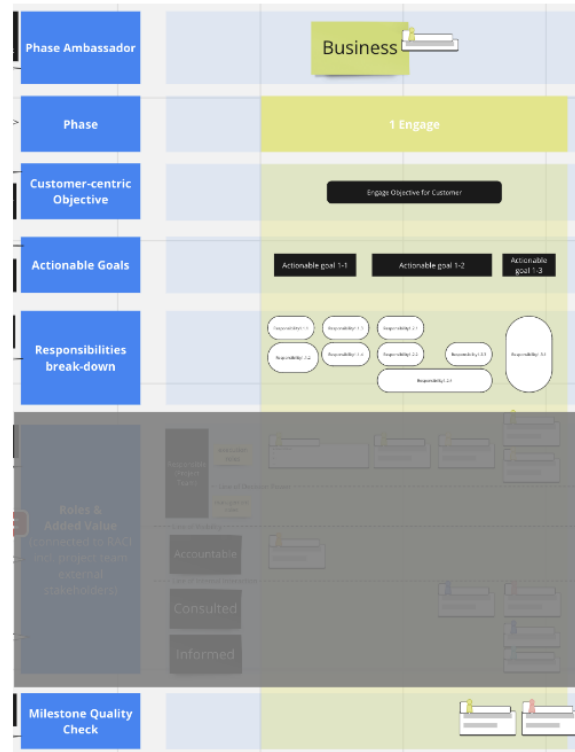Quality Assurance
External Stakeholders

Appendix

Appendix 7 Project Journey Embassy toolkit
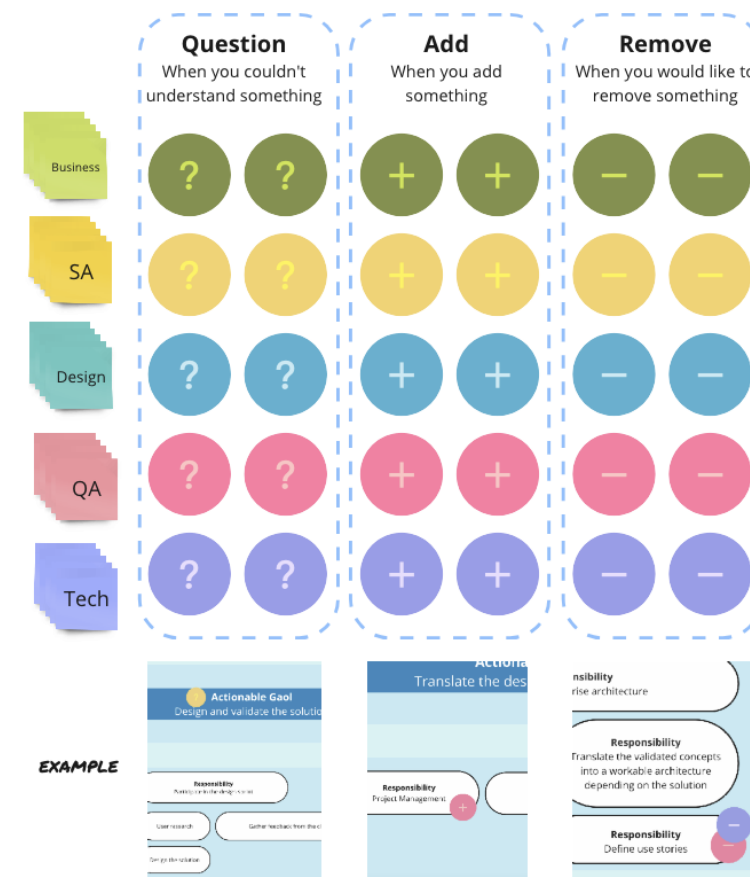
Mission 1: Review phase discriptions (25min)

Scope
Customer-centric Objective,
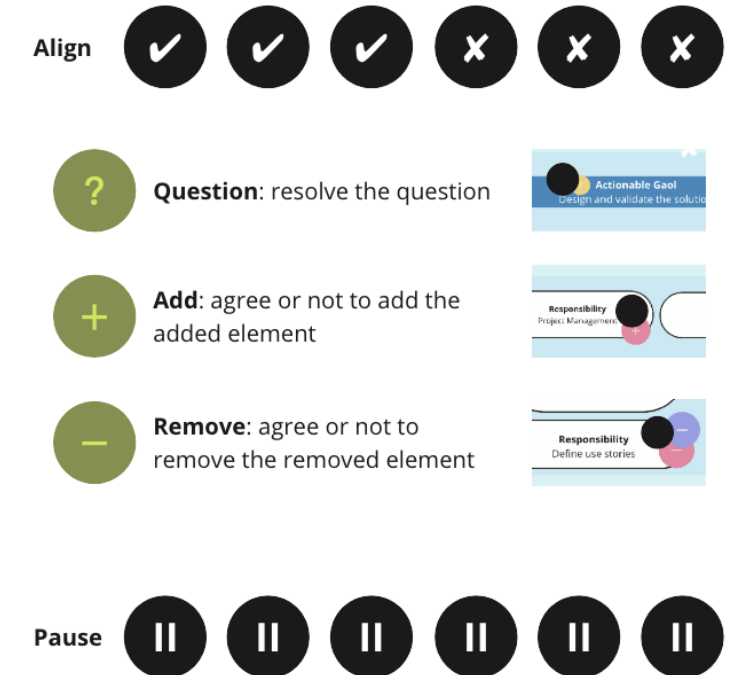Actionable Goals, Responsibilities
Break-down, Milestone Quality check

Step 1: Individual query (10min)
Read through the contents in silence, place a
'Function Dot' wherever you have a different opinion.

	Question	Add	Remove
	When you couldn't understand something	When you add something	When you would like to remove something

EXAMPLE

Step 2: Group Discussion (15min)
Discuss the query spots and reach alignments one
by one. Facilitator will mark the results. There might
be two kinds of results: Reach alignment either
agree or not; or pause the decision.

Align ✔ ✔ ✔ ✘ ✘ ✘

? **Question**: resolve the question

+ **Add**: agree or not to add the added element

— **Remove**: agree or not to remove the removed element

Pause ⏸ ⏸ ⏸ ⏸ ⏸ ⏸

Appendix

Appendix 7 Project Journey Embassy toolkit
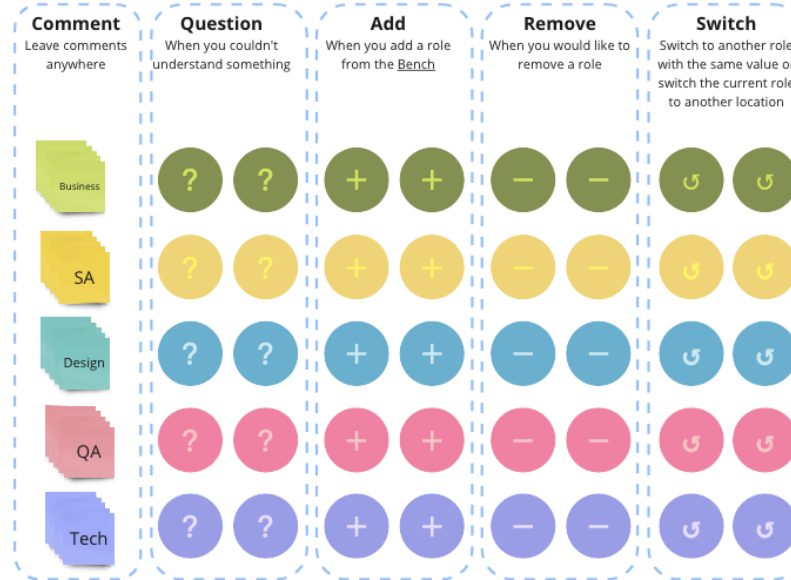
Mission 2: Align ideal team configuration (35min)

Scope
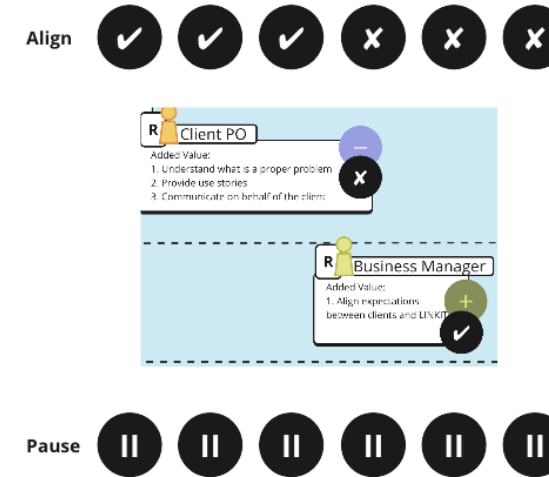Responsibilities Break-down, Roles & Added Value, Milestone Quality Check

Step 1: Individual query (10min)
Read through the team configuration in silence, place a 'Function Dot' wherever you have a different opinion. You can use the Role Cards from the Bench below to assemble extra roles with explaining their added value.
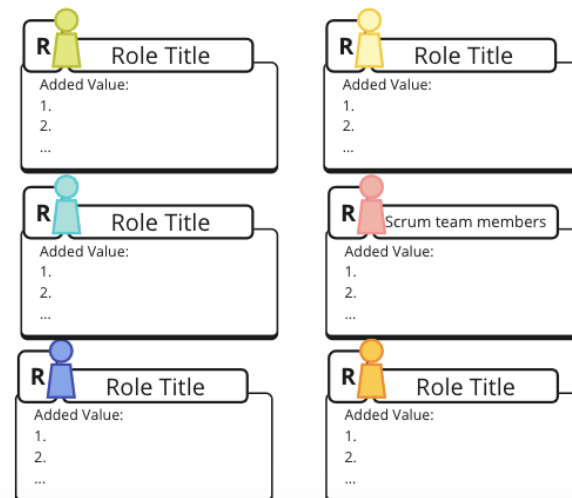
Comment
Leave comments anywhere

Question
When you couldn't understand something

Add
When you add a role from the Bench

Remove
When you would like to remove a role

Switch
Switch to another role with the same value or switch the current role to another location

- Business
- SA
- Design
- QA
- Tech

Step 2: Group Discussion (25min)
Discuss the query spots and reach alignments one by one. Facilitator will mark the results. There might be two kinds of results: Reach alignment either agree or not; or pause the decision.
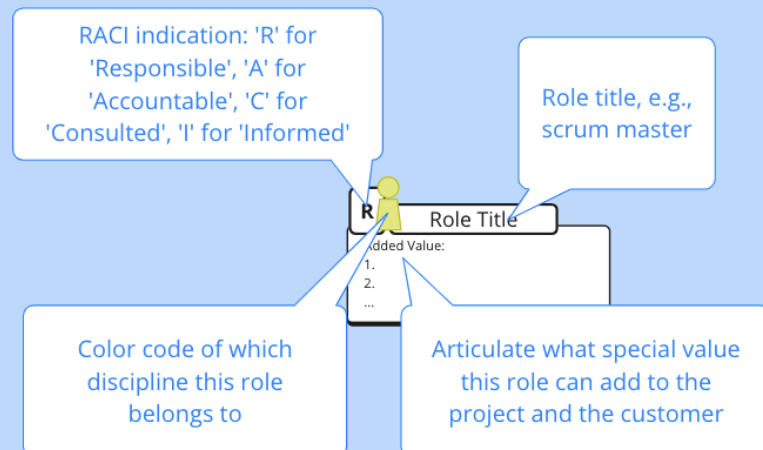
Align

Pause

Client PO
Added Value:
1. Understand what is a proper problem
2. Provide use stories
3. Communicate on behalf of the client

Business Manager
Added Value:
1. Align expectations between clients and LINKIT

Role Bench

- Business Manager (Sales)
- Designer
- Solution Advisor
- Test Automation Engineer, Scrum Master, Project Manager, Delivery Manager
- Architect, Lead Developer, Developer
- Client PO, Client BA, ect (any external stakeholder)

R Role Title
Added Value:
1.
2.
...

R Role Title
Added Value:
1.
2.
...

R Role Title
Added Value:
1.
2.
...

R Scrum team members
Added Value:
1.
2.
...

R Role Title
Added Value:
1.
2.
...

R Role Title
Added Value:
1.
2.
...

? How to use the Role Cards:

RACI indication: 'R' for 'Responsible', 'A' for 'Accountable', 'C' for 'Consulted', 'I' for 'Informed'

Role title, e.g., scrum master

R Role Title
Added Value:
1.
2.
...

Color code of which discipline this role belongs to

Articulate what special value this role can add to the project and the customer

Appendix

Appendix 7 Project Journey Embassy toolkit

Mission 3: Team Assembly Practice (20min)

The client has agreed to pay for the full ideal team configuration. Design phase is about to begin, but the client suddenly cuts their budget significantly. In order to reduce costs and ensure project profitability, LINKIT decides to downsize the project team. What roles do you think the new team will consist of?

⚠️ Note: The new team configuration should ensure that the output during the design phase can still meet the minimum quality standards.

Challenge   ⟳ To do

Step 1: Individual assembly (5min)
Vote on the new team members (roles).

Business

SA

Design

QA

Tech
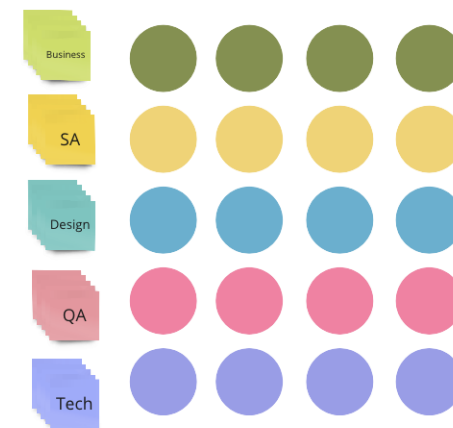
Step 2: Group Discussion (15min)
Which role(s) has most votes? Include them.
Which role(s) has less votes? Discuss whether to include them or not.
Which role(s) has no votes? Exclude them.
Pin the group decision on new team configuration.

📌 📌 📌 📌 📌 📌 📌 📌

EXAMPLE

Roles & Added Value (connected to RACI incl. project team external stakeholders)

Accountable

Consulted

Informed