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**Towards an understanding  
of the outcomes of Rapid Design  
Interventions on participants  
and organisations.**

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Doctor of Philosophy, PhD

2022



**Towards an understanding  
of the outcomes of Rapid Design  
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A thesis submitted in partial  
fulfilment of the requirement  
of the award of Doctor of Philosophy  
of the University of Northumbria  
at Newcastle

Faculty of Arts, Design & Social  
Sciences; School of Design

December 2022



# Abstract

This study explores Rapid Design Interventions and their outcomes on participants and organisations. Rapid Design Interventions (RDI) involve high-paced and intense workshops delivered by design facilitators according to design principles, using design methods and tools, in a hands-on fashion. It differentiates Rapid Design-Driven Interventions (RDDI) from Rapid Design-Led Interventions (RDLI). The former are aiming at the development or betterment of a product, service, or system; the latter, exploration of potential futures for an organisation aiming at the creation of a strategy to achieve preferred future(s).

Although numerous studies highlight the business value of design, most are interested in quantifiable results - the outputs. As such, there is still limited knowledge about the softer change that occurs as a result of design, the outcomes, and specifically as a result of Rapid Design Interventions. This study addresses this gap.

This study addresses the research question *'How do organisations and individuals recognise and sustain the outcomes of RDI and what are the influencers of these outcomes?'* through a Constructivist Grounded Theory (CGT) approach. It draws on data gathered from participants of RDI, design facilitators and design thinkers, as well as leaders of organisations using RDI in the United Kingdom, Armenia and the United States. In line with the principles of CGT, the author was embedded in the research situation as a practitioner-researcher.

The findings from this study indicate that RDI deliver three main outcomes. They help the participants develop an enhanced (1) entrepreneurial agency and creative confidence and (2) a strategic understanding of their organisation. Further, the participants start to integrate a design innovation approach into their day-to-day practice and their teams', leading their organisations (3) towards a Design Innovation culture.

The theory developed from this study contextualises these outcomes as being influenced by interactions between the DFs and their designerly approach, and the RDI participants, their organisational context and the external environment within which the organisation sits. Further, it identifies factors supporting the sustainment of these outcomes, from a supportive organisational culture, to a regular Design Innovation practice and exposure as well as the establishment of long-term relationships between participants and Design Facilitators.

The study contributes to the understanding of Design Facilitation as a practice by identifying the phenomenon of Design Listening, which the author proposes as a key skill in enabling the creation of outcomes. Further, by focusing on the outcomes of Rapid Design Interventions, the research demonstrates that Design Facilitation aids in

better understanding of the role of such activities in relation to the innovation readiness of an organisation as well as the role of RDI participants as key catalysts for innovation.

Finally, the contribution of this research is significant to academics interested in the field of design facilitation, to practitioners and design facilitators to enable a more purposeful design and deployment of RDI and to organisations in developing the potential power of design practice and directing their resources towards it. To this end, RDI stakeholder recommendations based on the study's findings are offered.

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### iii. Acknowledgements

This PhD is the outcome of a long journey that would not have been possible without the support of Northumbria University, its School of Design and the Head of Design School, Dr Heather Robson. The Get Ready To Innovate programme designed and delivered by Creative Fuse North East, an Arts and Humanities Research Council and European Regional Development Fund funded project, and its further iterations in Armenia and the US, and the people involved have inspired me to initiate, pursue and complete this study.

I owe my gratitude to the many participants, organisations, design practitioners and members of my community of practice who have contributed to this doctoral study but must remain anonymous. The depth of your generosity humbles me.

I am indebted to my two super-duper supervisors, Dr Mark Bailey and Dr Nicholas Spencer, for their expertise, their support, their honesty, our long debates, and all the laughter throughout this study. You went above and beyond and I could not have imagined a better team to pursue this PhD. A memo I wrote on March 15th, 2021, captures your invaluable contribution;

*I left the session inspired by our conversation. It was insightful & enlightening to have Mark's & Nick's views on my findings. Also, I am feeling immensely grateful to have these two incredible human beings supporting me & contributing to my journey. They set the standards really high, which helps me overcome my own expectations. (Z25-m)*

A gigantic thank you to Mark Jennison-Boyle for his invaluable contribution. Your comments and challenging questions have helped me refine the language used in this thesis and get the true meaning of my sentences across.

I would like to acknowledge Dr. Stuart English, Prof. Joyce Yee, and Prof. John Vines for their guidance, advice, and critique as panel experts throughout this study. I also want to express my immense gratitude to my colleagues, past and present. You have supported, guided and challenged me throughout this journey, especially Dr Oliver Hemstock, Dr Nkumbu Mutambo, Tor Alexander Bruce and Brogan Ogilvie, Charlie Richardson, Sophie Coombs, Helen Simmons, Baraa Albaqali and Neil Smith.

Finally, I would like to thank my family and friends who have been there along the way, offering me love, support and positivity in challenging times. Papa, my most shiny lucky star, thank you for believing in me when you had already lost faith in yourself. Luc, I am ever so grateful for you. The depth of your love and hard work have guided me when I needed it the most. And Mam, you are the most incredible and resilient person I know, I could never thank you enough for being my rock and my inspiration.





## iv. Publications & Research Dissemination

### Book chapter in the proceedings of a conference

**Carrion-Weiss, J.**, Bailey, M., & Spencer, N. (2022). Design Listening: What Designers Hear and How They Respond. In G. Bruyns & H. Wei (Eds.), [ ] *With Design: Reinventing Design Modes. Proceedings of the 9th Congress of the International Association of Societies of Design Research (IASDR 2021)* (pp. 585–600). Springer. ISBN 978-981-19447-1-0

### Published peer reviewed conference papers

Bailey, M., Spencer, N., **Carrion-Weiss, J.**, Arakelyan, A., & Carter, A. (2022). Design-led Innovation Readiness: Priming micro SMEs for strategic innovation. *23rd DMI: Academic Design Management Conference*. Design Management as a Strategic Asset, Toronto, Canada, 3-4 August, 2022.

Bailey, M., Spencer, N., Arakelyan, A., & **Carrion-Weiss, J.** (2022). Multidisciplinary Innovation Armenia: Explorations in design-led multidisciplinary enterprise education. *International Conference on Engineering and Product Design Education*, London South Bank University, London, UK, 8-9 September 2022.

Hemstock, O., Bailey, M., Simmons, H., Coombs, S., **Carrion-Weiss, J.**, & Richardson, C. (2022). Three degrees of influence in virtual workshops: towards an understanding of co-creative facilitation practice in technologically mediated settings. In Lockton, D., Lenzi, S., Hekkert, P., Oak, A., Sádaba, J. & Lloyd, P. (eds.), *Proceedings of DRS2022 Bilbao: Design Research Society International Conference*. London: Design Research Society, 23 p. 419. (DRS Biennial Conference Series).

Spencer, N., Simmons, H., Bailey, M., Hemstock, O. & **Carrion-Weiss, J.** (2022) Innovation Constellations as a systems approach to social design infrastructuring. *23rd DMI: Academic Design Management Conference*. Design Management as a Strategic Asset, Toronto, Canada, 3-4 August, 2022.

### Other conference activities

**Carrion-Weiss, J.** (2022) The power of Rapid Design Interventions. *European Cooperation in Science and Technology (COST) Conference on Multidisciplinary Innovation for Social Change (COST Action 18236): Design: Shaping Social Innovation*. Northumbria University, Newcastle-upon-Tyne, UK, 20-21 June, 2022.

**Carrion-Weiss, J.** (2021) *Design Listening - what designers hear and how they respond*. YouTube. Proceedings of the 9th Congress of the International Association of Societies of Design Research (IASDR 2021). [ ] With Design: Reinventing Design Modes. Available at: [https://www.youtube.com/watch?v=1iANvlzfg4I&ab\\_channel=NorthumbriaSchoolOfDesign](https://www.youtube.com/watch?v=1iANvlzfg4I&ab_channel=NorthumbriaSchoolOfDesign).

**Carrion-Weiss, J.** (2019) *Identifying indicators & developing measures for non-design enterprises to recognise effective discontinuous design-led innovation*. Poster for the 9th ISBE Conference. Newcastle-upon-Tyne, UK, November 14-15, 2019.

### **In preparation**

Bailey, M.; Spencer, N.; Simmons, H.; Hemstock, O.; **Carrion-Weiss, J.**; Sams, P. (2023) *Responsible Innovation Thinking: implications for education and practice*.

### **Special guest presentations for academia and industry**

April 2021- By invitation, presentation of my research and its correlation with GRTI-US programme, to the Cornell University InfoSci PhD Seminar (online) - *Ithaca, New York, US*.

November 2020 - By invitation, presentation of my methodological approach to the Design Masters of Research at Northumbria University (online) - *Newcastle-upon-Tyne, UK*.

April 2020 - By invitation, presentation of my research to the Graft Design & Innovation team (online) - *Edinburgh, UK*.

March 2020 - By invitation, presentation of my research to the Grid Smart Cities design team (online) - *Newcastle-upon-Tyne, UK*.

February 2020 - By invitation, presentation of my research to the MA/MSc Multidisciplinary Innovation at Northumbria University (in person) - *Newcastle-upon-Tyne, UK*.

## v. Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been granted. Approval has been sought and granted by the Faculty Ethics Committee on June 22, 2020.

I declare that the word count of this Thesis is 67,856 words (excluding tables).

Name: Justine Camille Carrion-Weiss

Date: December 16th, 2022

Signature:



## vi. Glossary of terms

**Creative Confidence** | the ability to come up with new ideas and the courage to try them out (Kelley & Kelley, 2013).

**Design Facilitators** | designers trained through a design education where design principles and practices were established and fundamental and who apply Design Thinking and Design Innovation knowledge in collaborative, participatory and co-design contexts (Minder & Lassen, 2019, p.3; Kimbell, 2012; Mosely et al., 2021).

**Entrepreneurial Agency** | the capability of an individual in adopting a more entrepreneurial attitude towards innovation and experimentation in order to develop or adapt organisational functionality (Bailey et al., 2018), leading to value creation and/or venture creation (Jones, 2019).

**Expert Facilitators** | trained design practitioners, academics and researchers (Lampitt Adey et al., 2019) who have developed facilitation skills and mastery over time (Brown, 2019).

**Innovation Readiness** | the capacity of an organisation to maintain their ability to innovate over time (Bailey et al., 2022b; Gribbin et al., 2018; Zerfass, 2005).

**Novice Facilitators** | professional Design Facilitators in training, often design students or recent design graduates (Lampitt Adey et al., 2019).

**Rapid Design Interventions** | high-paced and intense workshops (or series of workshops) delivered according to design principles, tools and methods by design facilitators. They can be design-led or design-driven.

**Rapid Design-Driven Interventions** | rapid design interventions aiming at the development or betterment of a product, service or system.

**Rapid Design-Led Interventions** | rapid design interventions focusing on the exploration of potential futures for an organisation aiming at the creation of a strategy to achieve preferred future(s).



## vii. List of abbreviations

**ADHD** | Attention Deficit Hyperactivity Disorder

**ACE** | Arts Council England

**AHRC** | Art and Humanities Research Council

**CFNE** | Creative Fuse North East

**CGT** | Constructivist Grounded Theory

**DF** | Design Facilitator

**DT** | Design Thinking

**EF** | Expert Facilitator

**ERDF** | European Regional Development Fund

**GRTI** | Get Ready to Innovate

**GRTI-A** | Get Ready to Innovate Armenia

**GRTI-US** | Get Ready to Innovate United States

**GT** | Grounded Theory

**GV** | Google Ventures

**MSMEs** | Micro, Small and Medium Enterprises

**NF** | Novice Facilitator

**RDI** | Rapid Design Interventions

**RDDI** | Rapid Design-Driven Interventions

**RDLI** | Rapid Design-Led Interventions

**SMEs** | Small and Medium Enterprises





# 01

## *Introduction*



# 1. Introduction

## 1.1. Research background and area under investigation

Historically, design and the role of designers has been understood as giving form (Alexander, 1971) and meaning (Verganti, 2009) to the ‘materials of a design situation’ (Schön, 1992) as opposed to giving form to dynamic materials like organisations, for example (Carrion-Weiss et al., 2022). In the context of this study, Design Innovation is referred to as the practice of innovating and bringing about change by giving new form, and/or new meaning to the materials of the situation, whether they are dynamic or not. It is a collaborative, participatory and co-creative approach that allows designers and stakeholders of an organisation to “come together to generate new ideas, try new things, see what sticks” (Architecture, Design & Planning, 2020). Here, ‘design’ implies responding to stakeholders’ needs (Norman, 2013) by embracing the world of abduction (Martin, 2009), where possibilities and opportunities are explored and consequences are mindfully considered.

Unfortunately, not all organisations have the resources (human, financial, material, etc.) (Kaufmann & Tödtling, 2002), nor the design maturity (Sheppard et al., 2018) to engage with a design approach to innovation. Instead, high-paced and intense workshops (or series of workshops) called Rapid Design Interventions (RDI), delivered according to design principles, tools and methods (Aguirre et al., 2017; Bird, 2019) by Design Facilitators (DFs) taking a hands-on approach have emerged in recent years as a way of addressing this. To support organisations in adapting to the constantly evolving world (Bessant, 2005; Ireland & Webb, 2007; Corso & Pellegrini, 2007), “creating and sustaining organisational competitive advantage” (Essmann & Du Preez, 2009; Ireland & Webb, 2007) design consultancies and internal design teams have started using RDI, allowing organisations to address the ‘wicked’ problems and complex challenges they face (Lai, 2016) in a reduced timeframe (Bessant, 2005).

The purpose of these RDI is varied and may include driving organisational change (Lai, 2016), or generating new products or new services ideas (Knapp et al., 2016). This has led to the distinction between Rapid Design-Led Interventions (RDLI) and Rapid Design-Driven Interventions (RDDI). Rapid Design-Led Interventions (Gribbin et al., 2018) are an exploration of the potential futures of organisations, leading to the creation of a strategy (Design Council, 2021) designed to realise their preferred future (Simon, 1996). Rapid Design-Driven Interventions are aimed at the development or betterment of a product, a service or even a system (Verganti, 2009) and allow

organisations to rapidly go through a design cycle.

A recent publication by Moseley, Markauskaite and Wrigley (2021) defined design facilitation as a “a highly complex, integrative, emergent practice that is innately linked to design process knowledge and understanding”. However, there is currently little known about the role and the practices of designers as Design Facilitators (Tan, 2012) and how they influence Rapid Design Interventions (Minder & Lassen, 2019). Furthermore, capturing the impact of Design Innovation and Rapid Design Interventions from the literature revealed a gap in knowledge about RDI outcomes.

In the context of this doctoral study, Rapid Design Interventions are a means to create sustainable outputs - strategies, products, services, systems, etc., through the active participation of organisations’ stakeholders, assisted by Design Facilitators (Aguirre et al., 2017). However, and in order to address the gaps in knowledge, this study is more interested in what these interventions leave behind, the *outcomes*, and why they occur, as opposed to the result of their delivery, the *outputs*.

## 1.2. Research aim & objectives

The aim of this doctoral study is to build a better understanding of Rapid Design Interventions as an approach to innovation by addressing the following research question:

*How do organisations and individuals recognise and sustain the outcomes of RDI, and what are the influencers of these outcomes?*

To achieve this, this doctoral research incorporates three strands of enquiry; (1) developing an understanding of Design Facilitation practice in the context of Rapid Design Interventions, (2) investigating the RDI outcomes and establishing how they are generated, and (3) understanding the deployment of RDI and their implementations in an organisational setting. Subsequently, the research objectives are focusing on:

- Engaging with a breadth of individuals that are either experts by training - design professionals, or experts by experience - RDI participants and their organisations, in the area of enquiry.
- Using a Constructivist Grounded Theory approach to design research that will enable me to build upon my prior knowledge and experience in the area of enquiry in a rigorous manner, recognise my biases and put strategies in place to mitigate them.
- Developing and growing as a design practitioner and Design Facilitator through interactions with the experts referenced above and the results and theory constructed as part of this doctoral study.

Finally, it is essential to reiterate that this is a study investigating Rapid Design Interventions outcomes, which are “the change that occur as a result of an activity” over time, and therefore, it will not be focusing on RDI outputs, which are “a quantitative summary of an activity” (Slay, n.d.), such as ideas, a product, a service or a strategy generated as a result of these interventions.

### 1.3. Methodological approach

To investigate Rapid Design Interventions (RDI), I take a Constructivist Grounded Theory approach.. First introduced in 1967 by Glaser and Strauss, Grounded Theory (GT) “refers to both the research product and the analytic method of producing it” (Charmaz, 2008, p. 397). Constructivist Grounded Theory (CGT) (Charmaz, 2000, 2006, 2017a, 2017b, 2020) or Constructionism (Charmaz, 2008) was developed by Kathy Charmaz and is based on GT, with the approach of giving more flexibility to its use. Specifically, it redefines the relationship between researchers and research participants, and redefines the concept of reality as “social constructions of the mind” (Guba & Lincoln, 1989, p. 43), which implies the existence of realities and truths, unique for each human (Mills et al., 2006b.; Charmaz, 2006; 2008; 2017b). As a consequence, the role of researchers is pivotal, and their reality should be captured to appreciate the product of their study, a theory (or theories) (Charmaz, 2000; 2006; 2017b). Consequently, this doctoral thesis is written using the first person, capturing my reality as the main researcher of this study.

The flexibility of CGT led to the use of a theoretical, as well as convenience sampling approach. The former is an iterative and ongoing process allowing data and the analytical process to guide where further data must be collected to inform the development of emerging theory(ies) (Glaser, 1978). The latter, involving picking a non-random sample (Neuman, 2014) from organisations I or the research team - my two supervisor and I, had an established relationship with, allowed me to address the difficult organisational climate resulting from the Covid-19 pandemic. Further, the flexibility of CGT influenced data collection activities, leading to the implementation of a planned and an opportunistic approach. I designed the planned activities and specifically recruited participants for these, scheduling and conducting them myself throughout the study. Conversely, the opportunistic activities are events I attended, either as doctoral researcher or as design practitioner. Data was captured there when the event was addressing the area of enquiry. To balance the flexibility offered by the constructivist approach to Grounded Theory and complete a rigorous study, I applied mindsets and practices recommended to achieve quality in CGT research, namely; recognising the power of doubt, practising methodological self-consciousness and writing as a strategy.

## 1.4. Duality of the practitioner-researcher role

Since the completion of my Masters in Multidisciplinary Innovation in 2016, I have been a Design Innovation practitioner within an organisation, at Northumbria University, and within my own businesses, *Nuhj*, and subsequently, *The Blooming Platypus*. As a consequence, prior to the beginning of this study, I first and foremost identified as a design practitioner. It was my work as Innovator-in-Residence at Northumbria University that triggered a deep curiosity in Rapid Design Interventions and facilitation as a design practice, having witnessed the potential of such activities. When offered the chance to pursue a doctoral study investigating RDI, I recognised an opportunity for growth (Corbin & Strauss, 2015b), not only as a practitioner, but also as a researcher.

Because I was so deeply embedded in the area of enquiry as a practitioner and as a researcher (Costley, Elliott & Gibbs, 2010), Constructivist Grounded Theory presented as the preferred methodological choice. Instead of rejecting bias, it recognises the existence of prior knowledge, experience and expertise of researchers within their area of research, and invites them to unpack these insights, acknowledge them and consider their implications. Thus, given my background, and my role in this study, I positioned myself as a practitioner-researcher.

The duality of this position came with dilemmas, such as the development of a personal relationship with the participants and an awareness of the potential consequences of the study on them and their environment (Fraser, 1997). However, it also offered some advantages, such as a better connection with the professional field (Arber, 2006). To address the ambivalence of this position, Arber (*ibid.*, p.154) recommends that practitioner-researchers identify and implement strategies to enable reflexivity and “keep track of theoretical perspectives and assumptions as well as keeping track of emotional reactions”. In line with CGT and addressing Arber’s recommendations, I implemented tactics such as memo-writing (Charmaz, 2014; Mills et al., 2006) to capture “the frontier of [my] thinking” (Glaser, 1978, p. 83) throughout the study. This approach allowed me to embrace CGT mindset and principles, and quickly respond to arising research opportunities. Overall, my position as practitioner-researcher gave more depth and nuance to the data collected, its subsequent analysis and the construction of the theory.

## 1.5. Audiences

### 1.5.1. Design research community

The design research community is the primary audience for this doctoral study, as the Rapid Design Interventions Theory constructed as part of it, will enable it to better understand RDI as a mechanism and the outcomes they generate. As a subject that is

under-studied and under-discussed, this thesis, focusing on the emergence of Design Facilitation as a practice, is initiating a conversation about the possible approaches to RDI, differentiating Design-Led from Design-Driven interventions. Further, it highlights the value of specific models of RDI, namely Get Ready to Innovate (GRTI) and Design Sprints, and will allow the design research community to have more certainty about some of their approaches, which will ultimately help them build trust amongst the people they are trying to engage.

### 1.5.2. Design practice community

This study makes a contribution to the design professions by shining a light on Design Facilitation as an emerging practice and on designers as enablers, or facilitators of innovation. The results and product of this study are likely to be of interest to the design community, as they not only give more credibility to Rapid Design Interventions, but also offer the Rapid Design Interventions Theory as a framework for the design and delivery of such activities. The identification of the RDI outcomes will help Design Innovation practitioners and Design Thinkers demonstrate the value of such activities for organisations, their employees and their stakeholders. The factors influencing RDI outcomes will enable the design practice community to better prepare itself as well as the organisations and the participants prior to the delivery. It will encourage Design Facilitators to be more alert to the factors that might influence the delivery of RDI, and act upon them when they occur. The identification of the factors supporting the sustainment of RDI outcomes sustainment will help them in supporting organisations in the establishment of strategic RDI as part of a more continuous Design Innovation practice.

### 1.5.3. Organisations using or considering using RDI

This study highlights the potential value of Rapid Design Intervention and develops an understanding of the impact these activities can have on participants and their organisations in a much broader sense than new products and services, or new ideas. Specifically, this study advocates for the delivery of strategic interventions as a platform for individual growth and organisational transformation, by demonstrating that RDI have the power to impact people, who then have the potential to impact their organisation. Eventually, this piece of work encourages organisations to build an understanding of Design Innovation practice and create a culture that supports its implementation in order to reap the benefits of RDI and thrive.



## 1.6. Chapters overview

Writing Constructivist Grounded Theory research has been proven challenging, especially in the context of a doctoral thesis, as the linearity of the traditional format literature review, findings, discussion, poses some issues (Dunne, 2011). To address these, Dunne suggests writing the thesis in a format that aligns best with the way the theory - which is the key finding in CGT- was developed. For that reason, it is essential for the reader to keep in mind that although the thesis has to be written linearly, the steps leading to the theory were iterative, entwining and overlapping. In addition, images of visualisations and post-it notes have been included in the thesis to convey this non-linear sense-making process, but it is not intended that the reader of the thesis should be able to read the content of these images.

### ***Chapter 2 / Understanding design within the context of the study***

This chapter considers the different design terms around Rapid Design Intervention, specifically Design Thinking, Design (-Led and -Driven) Innovation, as well as design maturity. After exploring the known and proven business value of design for organisations, I contrast a continuous innovation design practice with an episodic design practice, through the exploration of Design Facilitation as an emerging practice. Finally, this chapter clarifies and defines the area under investigation, Rapid Design Interventions (RDI). To develop an understanding of the term, some RDI frameworks and models are reviewed.

### ***Chapter 3 / Background of the researcher & implications***

In line with Constructivist Grounded Theory, which recognises the existence of prior knowledge and experience of researchers who play the major role in constructing meaning and theory from the data, this chapter captures my disciplinary upbringing (Bailey, 2021). Here, my scientific, military, linguistic, and design backgrounds are reviewed and their implications for this study are discussed.

### ***Chapter 4 / A Constructivist Grounded Theory Approach to Design Research***

This methodology chapter introduces the historical development of Grounded Theory and its evolution, which led to Constructivist Grounded Theory (CGT). Here, I summarise the implications of a CGT approach on this doctoral study and explain the rationale for using such an approach in a design research context. Additionally, I present an overview of the data collection activities - planned or opportunistic, that contributed towards the data set, as well as an overview of the research participants and other data set contributors. Finally, this chapter highlights the flexibility of a constructivist approach in relation to both data collection activities and research samples.

**Chapter 5 / Constructing meaning & theory from the data**

In this chapter, I firstly introduce the process employed to construct meaning from the data according to Constructivist Grounded Theory, using memo-writing, initial, focused and theoretical coding, as well as triangulation. I position each of these methods in the literature, introduce my analytical procedure, and present my findings. Secondly, I present the results of the analytical process through the lens of three themes; the factors influencing RDI outcomes, the RDI outcomes, and the factors supporting RDI outcomes sustainment. Finally, I introduce the main outcome of this study: the Rapid Design Interventions Theory.

**Chapter 6 / Discussion**

This chapter locates the results and the outcome of this study in relation to existing bodies of knowledge. In particular, I discuss the role of Rapid Design Interventions as a directive practice, through which participants develop their entrepreneurial agency and creative confidence. Further, I investigate the requirements for Design Facilitators to deliver 'successful' RDI. Lastly, I argue for the strategic delivery of RDI within organisations.

**Chapter 7 / Conclusion**

This final chapter spells out the contributions to knowledge of this study, and the limitations and challenges of this doctoral research. Alongside this, I capture key recommendations for Design Facilitators, RDI participants and organisations using RDI, and set the scene for further research.



# 02

## *Understanding Design within the Context of the Study*



## 2. Understanding design within the context of the study

### 2.1. Introduction

This literature review chapter situates and locates this doctoral study in relation to existing and relevant bodies of knowledge. It considers the different uses of design terms in the area of enquiry, specifically Design Thinking, Design-Led and Design-Driven Innovation, as well as design maturity. Further, it discusses the business value of design for organisations.

After differentiating a regular from an episodic design practice, this chapter focuses on clarifying the area under investigation, Rapid Design Interventions (RDI). To develop an understanding of the term, I review Design Facilitation as a practice as well as some popular RDI frameworks. Additionally, indicators and measures that have been developed by organisations to gauge the success of these interventions will be discussed.

However, my PhD study is specifically investigating the outcomes of Rapid Design Interventions, which are high-paced and intense workshops delivered by Design Facilitators according to design principles, using design methods and tools. These interventions can be designed according to two different types of approaches; they can be either 'design-driven' or 'design-led'.

Rapid Design-Driven Interventions bring together a very diverse group of stakeholders and focus on the development or betterment of a product, a service or even a system. Design Sprints usually fall under this category. On the other hand, Rapid Design-Led Interventions are more exclusive and usually bring leaders of an organisation together with carefully selected members of their organisation and sometimes stakeholders to explore some of the challenges the organisation is facing, identify key opportunities and develop a strategy to realise these opportunities.

## 2.2. What on earth is design?

Design is a concept notorious for its ambiguity and difficulty in grasping, as it is both a noun and a verb, and “could simultaneously refer to a process, an object and a function” (Michlewski, 2006, p. 23). When asked about design and the role of designers, executives usually have two understandings of the term; design to style or make an idea attractive and design to come up with ideas that will bring you closer to the user.

Historically, the act of designing has been perceived as the process of giving form (Alexander, 1971) to inanimate materials like products and services through a reflective conversation with ‘materials of a design situation’ (Schön, 1992) as opposed to giving form to dynamic materials like organisations (Carrion-Weiss et al., 2022). This traditional understanding of design is tactical and reduces the role of the designer as someone who is making aesthetically pleasing things. However, in his doctoral thesis, Bailey nuances Alexander’s view of design and act of giving form, “whatever form the output takes” (Bailey, 2021, p. 8). This latter understanding highlights the potential applications of design in giving form literally to objects (product, services, systems), or metaphorically to subjects (individuals, collectives and organisations).

A more recent understanding of design allows to step away from design as an act of giving form to a strategic role application of design, which allows designers (and by extent companies) to better understand the needs of their customers (Brown, 2019; Verganti, 2003, 2009) and give to products new meaning (Verganti, 2006; 2009).

### 2.2.1. Designerly ways of knowing

Introduced by Cross (1982, p.221), *‘Designerly ways of knowing’* focuses on design education, differentiating the design education ‘culture’ from two other pre-established cultures; “education in the sciences” and “education in the arts”. Indeed, Design stands outside these two cultures as it investigates the *‘artificial world’*, ‘inventing things’ that do not yet exist and speculating about them in order to develop new knowledge, uncover the most appropriate solution and identify preferred futures (Cross, 1982; Simon, 1969; Martin, 2009). Design is “concerned with how things ought to be, with devising artefacts to attain goals” (Simon, 1996). In this context, ‘Designerly ways of knowing’ (Cross, 1982) is about the “things to know, the ways of knowing them, and ways of finding out about them” (Royal College of Art, 1979) in design practice. Specifically, Cross (1982, p. 226) identifies “five key aspects of the designerly ways of knowing”:

- “Designers tackle ‘ill-defined’ problems.”
- “Their mode of problem-solving is ‘solution-focused’.”
- “Their mode of thinking is ‘constructive’.”

- “They use ‘codes’ that translate abstract requirements into concrete objects.”
- “They use these codes to both ‘read’ and ‘write’ in ‘object languages’.”

Further, Cross (ibid.) justifies the use of design in education as an enabler to develop “a wide range of abilities in nonverbal thoughts and communication”. These qualities, perceived as ‘soft skills’, are essential in supporting individuals addressing the increasingly ill-defined, complex, networked and dynamic challenges society and organisations face (Bailey, 2021; Dorst, 2015). These messy problems that designers face, often lacking clarity, were designated ‘wicked problems’ by Rittel & Webber (1973).

### 2.2.2. Design Thinking

Design Thinking is an ill-defined term (Bailey, 2021) and can be understood through different frames. Two of them are particularly relevant in the context of this study; ‘Design Thinking as a cognitive style’ and ‘Design Thinking as an organizational resource’ (Kimbell, 2015).

The older and most established understanding of the term, ‘Design Thinking as a cognitive style’ focuses on on “thinking as a designer would” (Martin, 2009, p.62). Specifically, it is about the designer as an individual, and their capability to address ‘ill-structured’ problems that co-evolve with solutions (Lawson, 1997; Cross, 1982, 2006; Schön, 1983). There, design sits within design disciplines and is aimed at solving problems. The most recent framing of the term, ‘Design Thinking as an organizational resource’, finds its foundations in the need for organisations and businesses to innovate. In this context, design problems are organisational challenges (Martin, 2009; Brown, 2009).

Over the years, various Design Thinking models have emerged, in an attempt to capture a Design Thinking process. Amongst the most popular and most recognised by commercial organisations, we can find the global design firm IDEO’s model (Stanford University, 2010), the IBM Design Thinking ‘*Loop*’ (IBM, 2021), as well as the Design Council’s ‘*Double Diamond*’ (2005; 2021). Although helpful in understanding the potential stages of Design Thinking, these models fail to capture the iterative and non-linear nature of the process.

As a new approach, Design Thinking challenged design practice. It shifted the paradigms in the field, and diversified professional design practice (Mosely et al., 2021), which led to an expansion of what is understood as design practice (Leerberg, 2009). Further, “the evolution from Design Doing to Design Thinking reflects the growing recognition on the part of today’s business leaders that design has become too important to be left to designers” (Brown, 2019, p.14). Indeed, in his reintroduction to Design Thinking, Brown (2019) discusses the journey IDEO have been on since the



publication of the first edition of his book (Brown, 2009), and the range of challenges they have addressed in education, governments and social organisations, as well as start-ups. Specifically, Design Thinking is moving towards a more responsible practice that addresses the most ‘wicked’ challenges the world is facing, from climate change through to poverty and health (Brown, 2019).

### 2.2.3. Design innovation

Design Innovation is the practice of innovating and bringing about change by creating something that either has a new form, or a new meaning. It is a collaborative, participatory and co-creative approach that allows designers, members of an organisation and stakeholders to ‘come together to generate new ideas, try new things, see what sticks’ (Architecture, Design & Planning, 2020). Design Innovation finds its roots in Design Thinking principles and can be divided into two categories; *Design-Driven Innovation* (DDI) and *Design-Led Innovation* (DLI). The former is about building an innovation strategy that supports the creation of products and services that have a radical new meaning for customers (Verganti, 2009). The latter focuses on working closely with organisations and stakeholders to understand their potential futures and create a strategy to achieve their vision.

#### 2.2.3.1. Design-driven innovation

Rooted in Krippendorff’s (1989) work, Design-Driven Innovation (DDI) is a meaning-making activity. It is the act of building an innovation strategy for an organisation “that leads to products and services that have a radical new meaning for customers” (Verganti, 2009, p. viii). Design-Driven Innovation is a commercial approach to design which focuses on giving new meaning to uncover or create new markets. It mostly interacts with customers and users, as opposed to stakeholders (Architecture, Design & Planning, 2020; Design Council, 2010; Verganti, 2009). In the context of this doctoral study, Design-Driven Innovation is about the *object of design*. Its output is physical and tangible.

#### 2.2.3.2. Design-led innovation

Design-Led Innovation (DLI) is at the merging point of Design Thinking and strategy (Wrigley, 2017) and is a means of solving problems and focusing on the challenges faced by organisations (Brown, 2009; Martin, 2009). By addressing the “situation[s] outside of [their] ‘normal’ operating conditions” - called ‘discontinuities’, and seeking external help from design consultancies “to take advantage of these conditions” (Bessant, 2005), enterprises focus on three strategic stages; understanding their situation, developing their opportunities and leading change (Galavan, Murray & Markides, 2008). Here, design is used to drive organisational change, build cultures revolving

around design principles and put practices based on design thinking techniques at the heart of the business model (Lai, 2016; Doherty et al., 2014). In the context of this doctoral study, Design-Led Innovation is about the *subject of design*.

#### 2.2.4. So what is design about in this study?

If historically the emphasis of design was focused on the materiality of the form rather than on its meaning (Krippendorff, 1989), the act of designing has now shifted towards a more balanced practice, where form and meaning co-exist and complement each other (Bailey, 2021; Krippendorff, 1989). This definition and the expansion of the design discourse have led to the concept of Design in the Expanded Field, introduced by Leerberg (2009, p. 1):

*“As contemporary design increasingly transcends the idea of merely tangible, material objects to include more elusive creations such as interactions, strategies and systems, we might also note that contemporary designers are no longer the sole contributors to the creative process of designing; often designers participate in interdisciplinary communities of practice.”*

By including more and more individuals to participate in design activities, designers can address *wicked* problems and better respond to the needs of stakeholders, either after having understood or uncovered them (Design Council, 2010; Norman, 2013).

In this study, design is about giving meaning to the tangible - products and services, etc - and the intangible - enterprises and communities, etc. It is also about business, searching for the possibilities and opportunities, navigating the abductive world of designers and uncovering what the world could be (Martin, 2009) while being mindful of the consequences. Here, Design-Driven Innovation is a strategy aimed at creating sustainable competitive advantage for businesses, and Design-Led Innovation is a strategy aimed at creating sustainable organisations that stand the test of time and adapt to the constantly-evolving world.

## 2.3. The business value of design

Amongst the extensive literature referencing innovation, one aspect is reiterated by many: “innovation is crucial for creating and sustaining organisational competitive advantage” (Essmann & Du Preez, 2009; Ireland & Webb, 2007). Small and Medium Enterprises (SMEs) and sole traders have historically been characterised as lacking both the human and financial resources to carry out innovation projects (Kaufmann & Tödtling, 2002) as they tend to focus on completing their business’s core activities. This behaviour has resulted in some cases in Micro, Small and Medium Enterprises (MSMEs) - but also bigger organisations - missing out on chances and opportunities, but more importantly, they may have failed to adapt to the discontinuities their enterprises were facing in a fast-changing world (Bessant, 2005; Corso & Pellegrini, 2007; Daalhuizen et al. 2019).

In this context, design can be, and often is, championed as supporting innovation and increasing competitive advantage (Brown, 2008; Verganti, 2009). When facing a peculiar situation, some organisations are calling in design consultancies and design teams to focus on and bring more clarity to the challenges and ‘wicked’ problems they are facing (Martin, 2009; Brown, 2009). Over the past decade, academics and practitioners have conducted numerous studies and created different tools focusing on the different forms of design practice within organisations. This study identifies some of them, such as design maturity and design value models as relevant to the topic.

### 2.3.1. Design Models

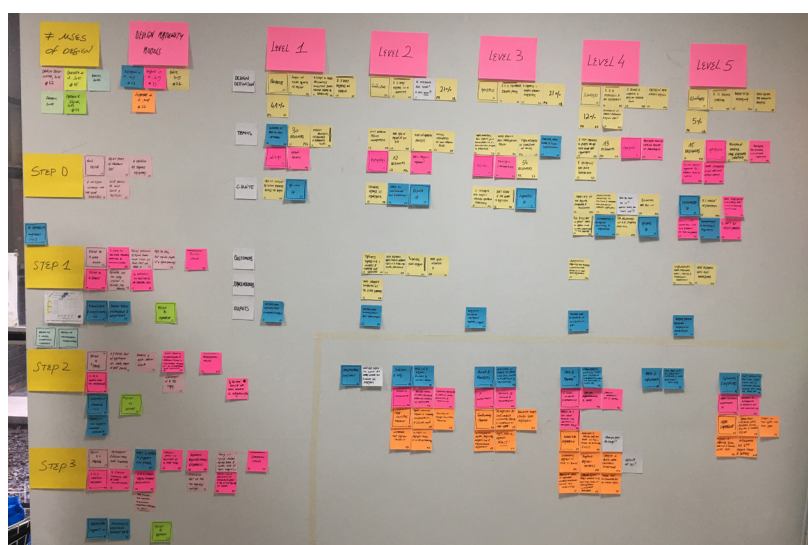
Over the past decades, different design models have emerged. They aim to capture and understand the different uses of design within organisations, as well as the organisation’s level of maturity, which represent how well design is embedded within the business. The *Danish Design Ladder* specifically captures four steps of design uses (Danish Design Center, 2015; Kretzschmar, 2003).

The *Design Maturity Models* focus on how embedded design is within organisations. The two Design Maturity Models explored here, namely the *Design Maturity Universe* (Buley, 2019) and the *Design Function Grid* (Gardien & Gilsing, 2013; 2014) capture the embedment of design through five different levels. The *Design Maturity Universe* by InVision was created after they conducted the largest study to date investigating design maturity within organisations (Buley, 2019). Surveying 2,200 companies across 24 industries and 77 countries, InVision identified the different positions organisations towards design, each of the positions corresponding to a level of design maturity (Buley, 2019). Similarly, the *Design Function Grid* was created by Philips in order to capture the relationship Philips Design has with the other fourteen businesses of their organisation. The broader and the more complex the business issue the Philips Design team is

tackling, the deeper their relationship is with the organisation (Gardien & Gilsing, 2013). Through this grid, Philips can assess the design maturity of each of their businesses. This tool is essential for their business, as they believe that “the design discipline itself has to work at the heart of a business in order to make an impact” (Gardien & Gilsing, 2014). However, it is important to note that there are some limitations in InVision’s study as the research participants were recruited using a convenience sampling strategy. Indeed, the 2,200 participants were organisations InVision have worked with, or who signed up to their marketing list (Buley, 2019). In addition, the study was done within the space of digital product design, which in itself can be a limitation (Buley, *ibid.*).

The Design Value Models are a combination of the Design Ladder and the Design Maturity Models. The first one, the dmi: Value Scorecard (Westcott et al., 2013), appears to align perfectly with the models and the ladder, although it nuances some uses of design. Similarly, and in spite of being the oldest model issued from an engineering study, the *Innovation Capability Model* (Essmann & DuPreez, 2009) aligns perfectly with the content of the Design Value Models and the Design Ladder. If the language used is slightly different, the content and the meaning behind it is similar. Lastly, the *Philips Maturity Grid* (Gilsing, 2012), is a bit more complex, capturing three uses of design with three sub-uses in each of them, and three levels of maturity.

As a non-native speaker, I found navigating these similar models challenging. If the look of these models appeared to align in form, it was unclear whether the content aligned as the language used was different. In addition, coming from a linguistic background, words matter to me (see 3.3, p. 70). For these reasons, I decided to entirely deconstruct all of these models, to understand where they overlapped and if they differed. As a result, I created a *Hybrid Design Maturity Model* (see Figure 2.1, p. 51), summarising the content of each model.



**Figure 2.1:** *Creating an Hybrid Design Maturity Model, Carrion-Weiss (2019)*

## 2.3.2. Hybrid Design Maturity Model

### 2.3.2.1. Uses of design

The analysis and review of the literature around the design models helped me to identify four steps in the uses of design, which can be described as:

#### ***Step 1 - No design***

Here, design is part of the product development and is not handled by trained designers. Organisations which are at this step have no, or very little interest for the perspectives of their users. There, the solution is solely driven by good function and aesthetics (Danish Design Center, 2015).

#### ***Step 2 - Design as styling***

At step 2, design is utilised by organisations to deliver products, services and communications, and its final stage is a form-giving activity (Westcott et al., 2013; Danish Design Center, 2015), although design might be used as part of the functional development of the output (Westcott et al., 2013). The knowledge and competency of the design team is broad rather than specialised (Essmann & Du Preez, 2009)

#### ***Step 3 - Design as tactical***

Design is not anymore a result or an *output*, but rather an *outcome* (Danish Design Center, 2015; Gardien & Gilsing, 2013). Here, design is an approach used early in the development process (Essmann & Du Preez, 2009; Danish Design Center, 2015), where both the problem and the solution are user-driven. It is used to connect the different departments and involve a multidisciplinary team (Westcott et al., 2013; Danish Design Center, 2015).

#### ***Step 4 - Design as strategy***

At this most proficient step, organisations are using design not only to strategically invest in customer experience (Westcott et al., 2013), but also as a strategic resource to rethink and reframe either parts of their business model, or its entirety (Westcott et al., 2013; Danish Design Center, 2015). The organisation is future-focused and uses design to identify desired business areas. Here, design & Design Thinking are core competencies of employees, and the design and the management team work together, have the organisation's support, and impact the whole business (Westcott et al., 2013; Danish Design Center, 2015; Essmann & Du Preez, 2009).

## 2.3.3. Levels of Design Maturity

Through the review and grouping of the literature, five levels of design maturity were identified. Overall, these levels capture how design is embedded within an organisation. Specifically, it includes a detailed overview by focusing on the design definition

organisations give to design, the role of their design teams, the attitude of the leadership team towards design, the organisation's relationship with customers and stakeholders, and the nature of the design process outputs.

### ***Level 1 - Organisations are design producers***

The design 'producers' represent 41% of the companies surveyed by InVision (Buley, 2019, p.16). They are mostly focused on the visible aspects of designs. Their design team is on average made up of 30 designers, who are consumed by day-to-day operations. Although they are trying to be consistent through the use of guidelines, they "neglect processes, collaboration, and advanced tools" (Essmann & Du Preez, 2009; Buley, 2019, p.16). Because there is lack of cohesion in the leadership team, the outputs are often "inconsistent and unpredictable" ( Buley, 2019; Essman & Du Preezm, 2009).

### ***Level 2 - Organisations are design connectors***

Representing 21% of the surveyed companies, the design 'connectors' consider that design is "what happens in a workshop" (Buley, 2019, p. 11 & p. 15). On average, their design teams have 12 designers who are doing ad-hoc project management (Westcott et al., 2013; Buley, 2019, p. 13). The processes are becoming more collaborative and include joint sessions between different members of the team. Even their tools become integrated by other non-designer employees (Buley, 2019) while the leadership team now realises the potential that design holds and begins to identify needs and challenges to be addressed (Essmann & Du Preez, 2009; Buley, 2019). The employees are now more aware of the need to engage with customers and start deploying user-centric activities. In addition, the design team starts to engage with key stakeholders (Buley, 2019). Although outputs become "traceable", they still are inconsistent (Essmann & Du Preez, 2009, p. 7)

### ***Level 3 - Organisations are design architects***

The design 'architects' represent 21% of the companies surveyed by InVision (Buley, 2019, p. 11). In their organisations, design "supports more complex product ecosystems" and design processes are now standardised (Westcott et al., 2013; Buley, 2019, p. 20). In the design team, clear roles are established and practices, tools and procedures are being documented and implemented (Essmann & Du Preez & Buley, 2019). With an average of 54 designers, the design team's practice has "moved beyond basic participatory design" (Buley, 2019, p. 20). The leadership team of the organisation has now become supportive of innovation practices and design is integrated into operating structures. Although the delivery of consistent outputs allows the organisation to maintain their market share, the leadership team is still unable to identify whether the work is effective or not (Essmann & Du Preez & Buley, 2019).

### ***Level 4 - Organisations are design scientists***

The design 'scientists' account for 12% of the surveyed companies. Design has now

become an experiment and is utilised as a means to acquire new knowledge and make business decisions (Buley, 2019). At this level, the design team of 13 designers on average, is taking part in market research and is empowered to explore opportunities while they are contributing to the development of the business vision (Buley, 2019, pp. 11-13). Their processes are evolving, being refined and formalised based on feedback and results (Westcott et al., 2013; Buley, 2019). The leadership team, which is fully supportive of design practices, ensures that design activities and resources are aligned, and measure and monitor on a regular basis the impact of design on the organisation. As a result, the outputs allow the organisation to stand out and differentiate themselves from competitors (Essmann & Du Preez, 2009; Buley, 2019).

#### ***Level 5 - Organisations are design visionaries***

Last but not least, the design ‘visionaries’ represent only 5% of the companies surveyed by InVision (Buley, 2019, p. 11). Here, design has become a business strategy and is implemented across their entire organisation, in all departments (Buley, 2019). Because of that, the design team is relatively small with 15 designers on average (Buley, 2019, p. 13). However, they are a lot more efficient, continuously improving processes and contributing to improving quality and reducing risks in the business (Westcott et al., 2013). The design activities and resources are entirely synchronised, and innovation is an integral part of the organisational identity (Essmann & Du Preez, 2009; Westcott et al., 2013). User-research is incorporated into most processes, and the design activities are exploratory and future-focused (Buley, 2019). The full integration of design allows innovation to flourish and “outputs provide a sustained competitive advantage” (Essmann & Du Preez, 2009, p. 7).

#### *2.3.3.1.1. Final remarks*

It is important to understand that the steps in the uses of design and the levels of design maturity are building blocks and are incremental. But they are also dynamic. This means that an organisation can have their design team at level 5 of design maturity, while the leadership team might only be at level 3, for example. Furthermore, when design within an organisation is strategic (step 4) and the organisation has reached a level where they are design visionaries (level 5) Design Innovation occurs.

However, this change within organisations does not happen overnight . If the levels of Design Maturity capture the progressive change and integration of design, the Danish Design Ladder (Danish Design Center, 2015) fails to present similar nuances to the uses of design. Addressing this gap, Doherty et al. (2015) have refined and further developed the Danish Design Ladder, adding five cultural stepping stones to it.

Specifically, they introduced:

**Step 2.1 - Design as thinking**

Organisations begin to recognise design as a “unique way to approach and solve problems” (p.78) and challenges. There, the use of design principles - collaboration and experimentation for example, is becoming more prevalent amongst employees.

**Step 2.2 - Design as value creation**

Design is acknowledged and recognised as a means to create new value for the organisation and for stakeholders. The organisation has more open views and expectations of results, stepping away from “the traditional tendency to expect an immediate and measurable outcome” (p. 78).

**Step 2.3 - Design as intangible**

The organisation recognises that “design outcomes can be intangible” or that they might not be observed immediately (p. 79). This results in a shift of perception from the leadership team towards design, allowing new applications of it within the organisation.

By achieving the step 2.3 ‘design as intangible’, the organisation can finally reach the third step of the Danish Design Ladder, ‘design as process’. Doherty et al. (2015) then propose an additional two cultural stepping stones allowing organisations to reach the fourth and final step, ‘design as strategy’. However, it is essential to note that these stepping stones are indicative and were identified as routes for further research by Doherty et al. (2015).

**Step 3.1 - Design as relationships**

Design is a means to “create value through meaningful relationships with stakeholders” (p. 79).

**Step 3.2 - Design as management**

Design is being integrated by the leadership team, which is driving the organisation towards being design-led.

**2.3.4. The impact of design on organisations**

The survey conducted by InVision (Buley, 2019) highlights that in organisations at the intersection of step 4 ‘design as strategy’ and level 5 ‘organisations as design visionary’, design creates a more significant impact on people, practices and platforms. This is supported by Borja de Mozota (2003), who claims that design is more valuable when used strategically and placed at the core of business activities (Borja de Mozota, 2003). Design Innovation (DI) falls under this type of approach as a practice that combines the use of design with business strategy in order to innovate (Wrigley, 2017). Specifically, Buley (2019), Westcott et al. (2013), Sheppard et al. (2018) and Essmann



& Du Preez (2009) have all identified and detailed the positive impact of design on organisations, when fully embedded. The review of their literature allowed the mapping of the indicators of impact (see Figure 2.2 below) against the following criteria:

**Type of Impact (X-axis):**

*Hard numbers:* tangible business results (Buley, 2019) that are easily quantifiable.

*Soft benefits* (Westcott et al., 2013; Michlewski, 2006): intangible results that are difficult to grasp.

**Level of impact (Y-axis):**

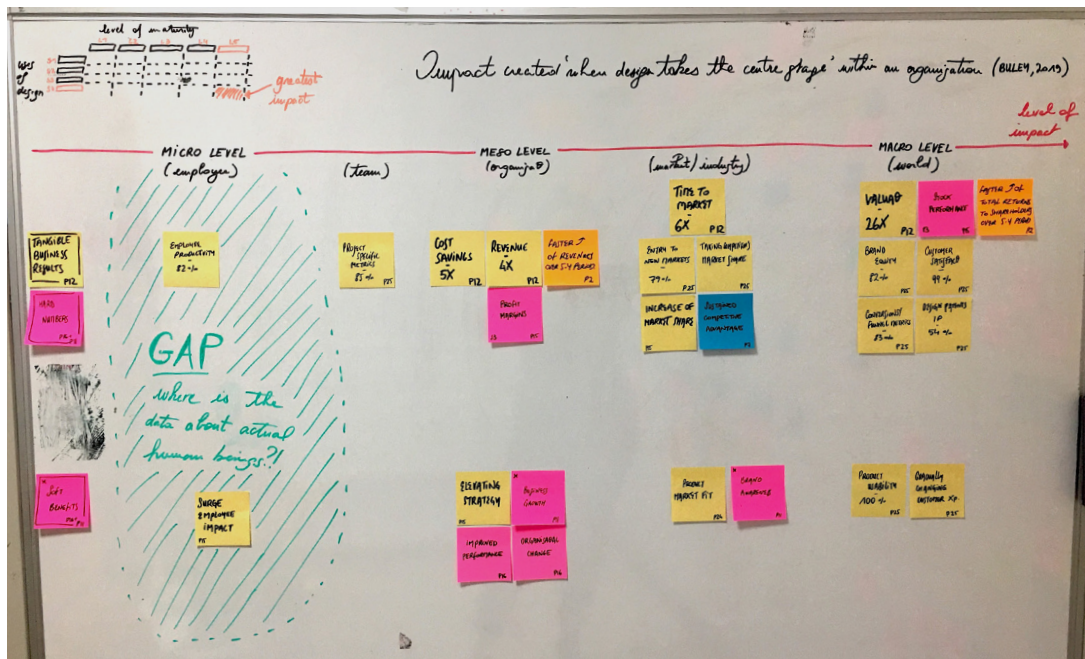
*Micro-level:* employee

*From micro to meso-level:* team

*Meso-level:* organisation

*From meso to macro-level:* market & industry

*Macro-level:* the outside world



**Figure 2.2:** Positive impact resulting from design practice within organisations, Carrion-Weiss (2019)

The mapping of the different impacts created by Design Innovation described in the literature revealed that there is a lot known about the hard numbers delivered by design. For example, in these organisations, design enables cost savings five times more important than non-design organisations (Buley, 2019). However, this mapping also allowed the identification of a gap in knowledge about the micro-level of impact (employees and teams), which highlighted that the understanding of the soft benefits is under-researched. This could be explained by the intangible nature of the data.

Finally, where design *outputs* are captured in design models, there are no mentions of design *outcomes*. Similarly, Doherty et al. (2015) acknowledged that organisations, as they progress through the cultural stepping stones and uses of design, “acknowledge that design outcomes can be intangible” (p. 79). Nevertheless, they failed to provide an understanding of what those outcomes might be.

## 2.4. Design Facilitation as a practice

Design Facilitation as a design practice is responding to the need for an interdisciplinary approach and work across knowledge boundaries to address contemporary complex challenges and *wicked* problems (Rittel & Webber, 1973; Mosely et al., 2021). Indeed, “it is rare for a single individual to have the breadth and depth of knowledge and skills to understand” all aspects of a situation (Norman, 2010, p.11). As a response, the designer role has evolved to navigate across the boundaries of disciplines, bringing with them their knowledge and experience of design processes and methods, as well as their creativity, “to guide the collaborative process” (Mosely et al., 2021, p.3). By so doing, they create a collective and cohesive understanding of the problem and solution space, integrating multiple and diverse perspectives (Mosely et al., 2021). Design Facilitation helps teams to “dive into the ecologies of services, into the world of needs and experiences of users and providers ... [and] visualise, formulate, and choreograph solutions to problems that do not necessarily exist” (Mager, 2009).

However Light & Akama (2012, p.69) point out that the focus of Participatory Design has been for too long about the methods, and what they achieve, rather than “how designers practise participation”. This observation aligns with Tan (2012), who states that although the role of the designer as Design Facilitator is commonly acknowledged within the design field, the literature around their role is limited and does not elaborate on the nature of this role, nor explore the Design Facilitators’ practices.

### 2.4.1. Design Facilitators

*Design Facilitators or designer as facilitator* refers to designers trained through a design education where design principles and practices were established and fundamental, and who apply Design Thinking and Design Innovation knowledge in collaborative, participatory and co-design contexts (Minder & Lassen, 2019, p.3; Kimbell, 2012; Mosely et al., 2021). In such contexts, they need to be able to quickly explore situations and ideas, analyse them, define the focus and build outputs to gauge the potential of possible solutions with stakeholders (Gardien et al., 2014 p.127).

Increasingly receiving the input of a multitude of stakeholders (Aguirre et al, 2017; Buchanan, 2015; Jones & van Patter, 2009), Design Facilitators play a crucial role when working together with diverse stakeholder groups on “large-scale processes of change” (Aguirre et al., 2017, p.199; Body et al., 2015; Tan, 2012; Wahl & Baxter, 2008). There, Design Facilitators

*“intensively collaborate with potential users-functioning not only as objective observers conducting user studies or as mere facilitators of co-design sessions, but also as subjective participants in which they themselves are part of the solution space” (Gardien et al., 2014, p.128)*

Indeed, in such activities, the boundary between stakeholders and designers is blurred. Design Facilitators navigate in complex patterns - successfully acting as facilitators and participants. In the former, they “must foster participant interactions that generate emergent material” (Aguirre et al., 2017), which is “brought into existence by the way a whole (event) is bound together by substance and order through relationships and connections” (Nelson & Stolterman, 2014). However, DFs are not above the rest of the group. They are not making decisions for stakeholders and deciding what is right for them or not. Rather, every single individual present, whether they are participants or facilitators, is part of a community, where each member is responsible for sharing their knowledge, using their skills and exercising their ethics (Gardien et al., 2014; Hummels, 2000). Between these two groups, there is a “symmetry of ignorance” (Rittel & Webber, 1973), where DFs are discovering the participants’ situation, and the participants are discovering (or rediscovering) the design process. According to Lai (2016), “a good facilitator is a teacher, psychologist, and strategist all rolled into one”. By positioning themselves as facilitators as opposed to design experts, they signal to participants that they do not have all the answers, but can nonetheless facilitate the process addressing the challenge raised (Lai, 2016).

Minder & Lassen (2019) identify different levels of creative facilitation as a moderating factor for the fulfilment level of collaboration. On their end, Lawson & Dorst (2009) and Dorst (2011, p.526) distinguish “seven levels of ‘design expertise’; *‘Naive’*, *‘Novice’*, *‘Advanced Beginner’*, *‘Competent’*, *‘Expert’*, *‘Master’* and *‘Visionary’*”, meaning that the design expertise of the Design Facilitators evolves over time and grows with experience and practice. Nevertheless, there is still little known about the development of design expertise. In their recent review of Design Facilitation literature, Mosely et al. (2021) only identified two studies in their data set investigating the difference between novice and expert design facilitators (Luck, 2007; Moseley et al., 2018).

#### 2.4.2. Design tools

The designer’s toolbox should support the delivery of rapidly developed outputs (Gardien et al, 2014). Design tools, as defined by Sanders, Brandt and Binder (2010) are “material components used in participatory design activities”. Their broad definition of the term allows them to incorporate all kinds of physical elements: the physical space or *the room* and the props used to deliver the activity, for example. Building upon this understanding, Aguirre et al. (2017) describe tools for design facilitation at their core as “aesthetic experiences intentionally crafted by design facilitators that can be seen, smelled, touched, heard, or tasted by participants”, which might include the visual language, the narrative, or the tone of voice of DFs. Adding to their definition, Aguirre et al. (2017) identified three types of facilitation tools: *‘readymade’*, *‘templated’*, and *‘contextually’* designed, defined as such:

*Readymade* tools are usually used in participatory design activities and lack specificity. They are usually off-the-shelf products, like sticky notes, big paper rolls, whiteboards, permanent markers, flipcharts etc., which Design Facilitators use spontaneously in the planning and delivery of Rapid Design Interventions.

*Templated* tools are predefined formats that enable the classification of information in a useful way. Amongst those, we can find the popular Business Model Canvas (Osterwalder & Pigneur, 2010), service blueprints, SWOT analyses, customer journeys, etc.

*Contextual* tools are bespoke and tailor-made tools. They are carefully designed and tailored to the participants and their organisation, as well as their environment. These are the most specific tools used by Design Facilitators and require design expertise (Lawson & Dorst, 2009; Dorst, 2011; Mosely et al., 2021) to be generated.

## 2.5. Rapid Design Interventions

### 2.5.1. Nature & Characteristics

As part of Design Facilitation, rapid co-creation is becoming increasingly important. At Philips for example, they are “exploring interactive products and systems through quick iterative loops of prototyping and testing with users” (Gardien et al., 2014, p. 128). The literature reviewed thus far enabled the distinction between two types of Rapid Design Interventions: *Rapid Design-Driven Interventions* (RDDI), and *Rapid Design-Led Interventions* (RDLI).

RDDI are aiming at the development or betterment of a product, a service or even a system (Verganti, 2009) and can resemble the now-famous design sprints, popularised by Google Ventures (Knapp et al., 2016), which allow organisations to rapidly go through a design cycle (Architecture, Design & Planning, 2020).

RDLI build upon Martin’s (2009) “‘dynamic interplay’ mindset by analysing past and present practices and creatively speculating about the future”. They are an exploration of the potential futures for the organisations leading to the creation of a strategy (Design Council, 2021) to realise their preferred future (Simon, 1996) and are being delivered by design teams, consultancies and institutions such as the Design Council (Design Council, 2021), Invest Northern Ireland (Invest NI, 2019) and Creative Fuse North East (CFNE, 2021).

If numerous innovation programmes share the attributes and intent of Rapid Design Interventions (RDI), they do not necessarily share their design-centred approach. In the North East of England for example, GET North delivers two programmes called the GX Innovation Programmes (GET North, 2018), which could be mistaken for RDI. However, paying attention to the details in the language, not only is design not mentioned once, but the vocabulary suggests to me that these interventions are led solely by the principles of business, as opposed to those of design.

Based on the previous sections of this literature review and the above paragraphs, Rapid Design Interventions can be defined as:

*Rapid design interventions are high-paced and intense workshops (or series of workshops) delivered according to design principles, tools and methods (Aguirre et al., 2017; Bird, 2019) by design facilitators (DFs).*

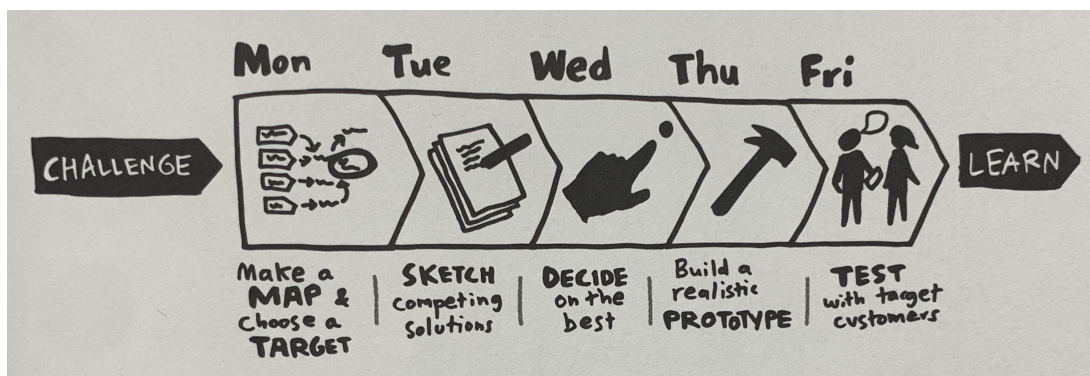
*Rapid design-driven interventions are aiming at the development or betterment of a product, service or system.*

*Rapid design-led interventions are an exploration of potential futures for an organisation aiming at the creation of a strategy to achieve preferred future(s).*

## 2.5.2. Existing Rapid Design Intervention frameworks

### 2.5.2.1. Design Sprints

Initially developed by *Google Ventures*, Design Sprints are workshops based on Design Thinking principles (Knapp et al., 2016) that aim to address product challenges in a short timespan (Knapp et al., 2016; Gribbin et al., 2018). Usually focused on a specific topic, or problem (O'Donnell & Bucolo, 2016; GV, 2019) and initially built to be delivered around the five days of the week (Knapp et al., 2016; GV, 2019) (see Figure 2.3 below), they have since been adapted and delivered across a range of formats, varying from a few hours to a few weeks (Banfield et al., 2015). Their structure allows for the process to be accelerated, removes some of the boundaries to innovation within organisations such as “endless debate” and enables the rapid prototyping and testing of ideas with customers (GV, 2019; Knapp et al., 2016).



**Figure 2.3:** *Design Sprint process (Knapp et al, 2016, p.17)*

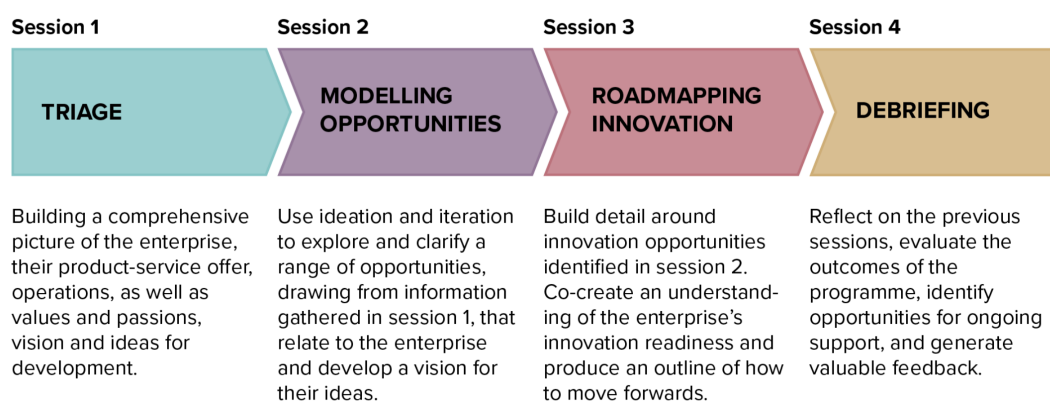
In Design Sprints, innovation is understood as the creation of new products (Gribbin et al., 2018) and therefore, falls under the Rapid Design-Driven classification of RDI. In the United-Kingdom, a utility company, Organisation I (see Table 4.4, p. 94) launched a Festival aiming at bringing stakeholders together to innovate. This Festival, built around the delivery of Design Sprints, was used as one of the main pools of recruitment for research participants in this study (see 4.5, p. 92).

Recognising some positive aspects of Design Sprints, which are “moving from a current state, or taking steps to move beyond it, to a preferred state in a matter of days” O'Donnell & Bucolo (2016, p.371) built upon the Design Sprint framework and introduced the Design-Led Innovation Sprints, which are awareness-raising and capability-building workshops. Specifically, they are aiming at identifying new business opportunities. Although their focus at the time of publication was product and service-oriented, they outlined a strategy-focused ambition for future work. In addition, and because these Sprints find their roots in Design-Led Innovation principles, they will be classified as Rapid Design-Led Interventions.

### 2.5.2.2. Get Ready to Innovate

Get Ready to Innovate (GRTI) is a programme designed according to a rapid design-led approach (Gribbin et al., 2018) which aims to promote *Innovation Readiness - the capacity of an organisation to maintain its ability to innovate over time* - within MSMEs (Bailey et al., 2022b; Zerfass, 2005). Though it is inspired from the Design Sprint philosophies, the structure of these Rapid Design-Led Interventions nonetheless differs (Gribbin et al., 2018). Designed and delivered by a team of design researchers and academics at Northumbria University (Carrion-Weiss et al., 2022), the programme was launched in 2017 through Creative Fuse North East (CFNE), an AHRC, ERDF and ACE-funded project (CFNE, 2021). Because of the funding requirement, the Get ready to Innovate programme is a 12-hour intervention, split across 4 separate collaborative sessions (Gribbin et al., 2018). Although the length and structure of these sessions has been modified and varied over the years, Hemstock et al. (2022) capture and detail the

#### WORKSHOP STRUCTURE: GET READY TO INNOVATE



workshop structure.

**Figure 2.4:** *The Get Ready to Innovate workshop structure (Hemstock et al., 2022, p.7)*

Since the initial delivery of GRTI between 2017 and 2019 through CFNE 1.0 in the United Kingdom, the programme has been delivered in Armenia since 2018 (GRTI-A), in the United States in 2021 (EGK Starters) and in the United Kingdom again since 2020 (CFNE 2.0) (Bailey et al., 2022b). In addition, the programme has been delivered according to different modes, 1-2-1 and 1-2-many, as well as in person face-to-face and online (Bailey et al., 2022a, p.5), which Bailey et al. (2022b, p.5) summarise in Table 2.1 (p. 64). For simplicity, the delivery of GRTI through EGK Starters will be referred to as GRTI-US in this thesis.

It is important to note that seven of the research participants in this study were recruited from the pool of participants and Design Facilitators in GRTI CFNE 1.0 and GRTI-US. Some of the participants from GRTI-A contributed indirectly to the study. This is further explained in “4.6. Collecting data in Constructivist Grounded Theory” on page 100.



Lastly, although GRTI focused on Innovation Readiness, it is essential to emphasise that this study is not a study of innovation readiness. However, it offers a helpful lens to consider the findings in the discussion section.

Programme	Location	Delivery model	Delivery mode	Number of enterprises	Duration
CFNE#1	North East UK	1-2-1	In person face-to-face	14	Typically, within 1 month
CFNE#1	North East UK	1-2-many	In person face-to-face	12	3 weeks
GRTIA	Yerevan, Armenia	1-2-many	In person face-to-face	24	Over 6 months
EGK Starters	Birmingham, AL, USA	1-2-1	Online	4	Within 1 month
CFNE#2	North East UK	1-2-1	Online	8	Within 1 month
CFNE#2	North East UK	1-2-1	In person face-to-face	2	Within 1 month
CFNE#2	North East UK	1-2-many	In person face-to-face	4	Within 1 month

**Table 2.1:** *The Get Ready to Innovate delivery models and modes (Bailey et al., 2022b, p.5)*

## 2.6. Summary

The current and crude indicators for the value of design within organisations are hard numbers - that is to say quantifiable *outputs* or *indicators* - such as new products and increased valuation of the organisation (Buley, 2019; Sheppard et al., 2018; Westcott et al., 2013). However, there is still limited knowledge about the softer impact of design - the *outcomes* and qualitative indicators - such as organisational and behavioural change.

Rapid Design Interventions have been proven valuable and impactful for innovation on a short timescale, some immediate benefits being the identification of barriers to innovation within the organisation, the identification of areas of improvement within the enterprise, the establishment of guidelines to improve the situation, and the exposure to a mindset where being creatively confident and failing early in the process are the norm (Gribbin et al., 2018; Lampitt Adey et al., 2019).

Yet, research about the impact of Design Innovation within organisations has mostly been considered in a design-driven context, “centred on the development and differentiation of new products” (Gribbin et al., 2018). Despite recognising the short-term benefits of design-led activities, there is currently a gap in knowledge regarding the measurement of long-term impact to the enterprise, even though design is commonly acknowledged as adding “a significant value to strategic capabilities” of enterprises (Borja De Mozota, 2003). This lack of knowledge could partially be explained by the fact that design-led innovation is a relatively new field (Doherty et al., 2014).

Though the initial aim of the study was to understand how indicators of long-term impact resulting from Rapid Design Interventions are being constructed or recognised by organisations and to understand how these organisations measure them - if at all, it is essential to mention that I had to slightly pivot from this over the course of it. Indeed, initial findings detailed further in 5.3 (p. 118) highlighted, in line with the literature, a gap in knowledge in relation to RDI outcomes. This study intends to address this gap.





# 03

## *Background of the Practitioner-Researcher & Implications*



## 3. Background of the practitioner-researcher & implications

### 3.1. Introduction

In the first development of Grounded Theory (GT), Glaser & Strauss (1967) did not consider how researchers could affect the process and the product of Ground Theory (Charmaz, 2008). However, the most recent development of GT, Constructivist Grounded Theory, introduced by Charmaz (2000) and which lays the methodological foundations of this study “takes into account the researcher’s positionality, as well as that of the research participants” (Charmaz, 2008). This chapter focuses on my positionality, while the research participants’ positionality will be discussed at a later stage (see Table 4.5, p. 95).

As a design practitioner with prior knowledge and theoretical preconceptions in the area of enquiry, and as a practitioner-researcher who is embedded in the research situation, my background, experience and perspectives have an affect on it (Charmaz, 2008). The chosen constructivist approach allows me to recognise and capture my knowledge and preconceptions, and “subject them to rigorous scrutiny” (Charmaz, 2008). This chapter, where I introduce my disciplinary upbringings, namely scientific and military, linguistics and design, and consider their implications on the process and the product of this doctoral study aims to achieve this.

### **3.2. Scientific & military background**

For as long as I can remember as a child, I had always dreamt of becoming a medical doctor in the army, and could not see my future anywhere else. Aged 14 and with this objective in mind, I took the entrance exam and gained entry to the Autun Military High School, one of the six Armed Forces High Schools in France under the supervision of the Ministry of the Armed Forces (Ministère des Armées, 2020). In this boarding school where we were supervised by both civilian and military personnel, rigour and camaraderie were the two main ingredients (France 3 Bourgogne-Franche-Comté, 2017; La Libre, 2017). Receiving orders from a section leader - the military equivalent of a class leader, we were rigorously supervised and expected to not only excel in school, but also to contribute to community service and military life.

There, between the ages of 15 and 17, and then in a civilian high school until age 18, I pursued a scientific baccalaureate - the French equivalent of the A-level, with three major strands; physics-chemistry, life and earth sciences and mathematics. According to the French Ministry of Education and Youth (Ministère de l'Éducation Nationale et de la Jeunesse, 2022), physics-chemistry and life and earth sciences enables students to develop the skills and knowledge necessary to understand questions, problems and challenges they may encounter in their daily lives, while mathematics supports the development of their scientific approach. Overall, this scientific curriculum enables students to acquire scientific methods, notions and concepts. In parallel and on a voluntary basis, I undertook an internship in a bio-cell chemistry research laboratory in Vienna, Austria for a month, where I had the chance to conduct hands-on scientific experiences doing gene cloning and isolating proteins.

Soon after, and convinced that I was pursuing the right career path, I took The Armed Forces Medical School entrance exam (Ministère des Armées, 2022) age 18, but failed. Disappointed, but having successfully completed my baccalaureate, I joined the Faculty of Medicine. There, I started my journey towards becoming a medical doctor with a mandatory first milestone: the first year common to health studies for medicine, pharmacy, odontology, maieutics and physiotherapy. By the end of the first term, though, I had realised that this world was not for me.

### **3.3. Linguistic background**

Lost and not knowing where to go or what to do, I reviewed my skill set and my passions outside sciences and identified foreign languages as an area of strong interest. Indeed, I had started learning English in CM1 (year 5) and Spanish in quatrième (year 9), was good at it and really enjoyed it. From there, I undertook a Licence (Bachelor of Arts) in Applied Foreign Languages at the University of Burgundy, with an Erasmus exchange at Northumbria University for my final year.

This degree, according to the University of Burgundy (n.d.), focuses on the practice of two mandatory modern languages (English and Spanish in my case) and an optional language (I chose Portuguese) applied to three fields; economics, law and communications. Specifically, the objective of this degree was the use of foreign languages in a professional environment with a multicultural perspective (Université de Bourgogne, n.d.; 2021).

At the end of my Erasmus exchange in 2015, I officially moved to the United Kingdom and enrolled in the MA/MSc Multidisciplinary Innovation. I have remained in the United Kingdom almost all the time ever since, thinking and speaking in French and English (Pavlenko, 2011), as well as Spanish on occasions when working with a French NGO supporting families in Honduras.

### 3.4. Design background

#### 3.4.1. MA Multidisciplinary Innovation

Established at Northumbria University in 2008, the MA/MSc Multidisciplinary Innovation (MDI hereafter) is a one-year collaborative Masters programme that brings together “a diverse community of graduates” (Bailey & Smith, 2010; Northumbria University, 2018; Spencer et al., 2017) and simulates a consultancy environment (Aftab et al., 2015). Founded on a constructivist approach (Bailey, 2021), using design-led innovation practice and working full-time on “consultancy-style projects”, the MDI students spend the year addressing live briefs from external organisations to address real-world challenges (Northumbria University, 2018, 2022; Spencer et al., 2017). Over the years, the community of practice (academics and researchers) in charge of MDI have established a safe environment - both physical and mental - to nurture the students’ confidence and allow their “true creativity to flourish” (Bailey & Smith, 2010), which completely reflects my experience as an MDI student.

Coming from a scientific and linguistic background, I felt very much out of depth during the first semester, especially during the facilitation of my first workshops with clients. Although I had never really found a field I felt passionate about, I quickly realised how fascinated I was by Design-Led Innovation practice, as it provided a constant personal and collective challenge. I felt energised by the breadth of projects we were addressing and the depth of new knowledge I was acquiring in many different fields through our live projects. During the second semester, I took part in my first Design Sprint, facilitated by our community of practice, working on a brief for Organisation I (section 4.5.1, p. 93). This first experience of rapidly going through a cycle of the design process allowed my team and I to witness the true potential of Design Innovation. As we progressed through the different projects of this second semester, I could feel my



confidence and knowledge grow, and I started taking more responsibilities, stepping out of my comfort zone and leading a three-week project.

The third and last semester of MDI slightly differed in form, as we worked in a small team of five on a three-month project with a global manufacturer. Being able to build a relationship with our client helped establish trust and rapport, which made me feel more confident. During this project, our team designed and facilitated our first Design Sprint ever, which I absolutely loved. The creativity, energy and ideas resulting from the process not only fueled me and convinced me that I was pursuing the right path, but it was also a highlight in my journey and a stepping stone to becoming the practitioner, the researcher and the leader I am today.

Overall, my MDI journey not only completely shifted my life and outlook onto the world, but it also laid the foundations for my PhD by triggering a deep interest in Rapid Design Interventions. In 2018, while I was interviewed for a promotional video for MDI, I emphasised the transformational nature of my experience, stating: “if you are thinking of joining MDI, just do it because it’s really going to change your life” (Northumbria University, 2018).

#### 3.4.2. Innovator-in-Residence

Taking a year to settle down after the life-changing experience of MDI, I came back to Northumbria University in the role of *Innovator-in-Residence* (liR). The liR role was created to allow MDI graduates to work closely with the academics, the design community of practice and the MDI students to further “develop [MDI] projects beyond their typical curricular conclusion” (Bailey & Smith, 2016, p.12) In addition, liR are encouraged to set up their own businesses (Bailey & Smith, *ibid.*).

Saying that my years as liR were decisive in my career choice is understatement, as this doctoral study originated from one of the projects I worked on as part of my role: the *Get Ready to Innovate* (GRTI) programme, delivered by Creative Fuse North East (CFNE, 2021) (section 2.5.2.2, p. 63). As part of Northumbria’s academic team, I contributed to the design, refinement and delivery of the programme in the United-Kingdom, as well as its subsequent delivery in Armenia (GRTI Armenia, 2021) and in the United-States (EGK, 2021).

Northumbria University’s (2022) webpage on the MA/MSc Multidisciplinary Innovation programme states that, “previous graduates from this course have secured senior roles with large organisations, and some have started their own businesses or gone on to PhD study”. Although I did not have the confidence to do so just after the completion of my Masters, the liR role gave me the experience, helped build my creative confidence and provided me with a safe space to grow as a design practitioner. Richer from, transformed and inspired by this experience, I started my own business alongside the

liR role, and applied for this doctoral study after a year as an Innovator-in-Residence.

### 3.4.3. Founder of Nuhj & The Blooming Platypus

While being an Innovator-in-Residence, my colleague and I started a Design Innovation agency together, *Nuhj*. Through it, we mostly delivered Rapid Design Interventions, before parting ways a couple of years later. Immediately after, I started my own enterprise, *The Blooming Platypus*, in parallel to conducting my PhD. In the first year, all of our work delivered Rapid Design Interventions for our clients, either as a stand-alone piece of work, or as part of wider projects. Through my work at *The Blooming Platypus* and as sole owner, I had the freedom to shape the organisation the way I wanted, and use insights from my doctoral research to influence my practice and vice-versa. In addition, in March 2022, I benefited from the *Get Ready to Innovate (GRTI) - Young Business Edition* programme as an RDLI participant, delivered by the Creative Fuse North East team at Northumbria University.

## 3.5. Implications of my disciplinary upbringing

Bailey (2021, p.18) defines a disciplinary upbringing as “*the combination of formal and informal learning within a particular field, which contributes to discipline-specific ways of knowing*”. The Multidisciplinary Innovation students work together to synthesise the knowledge, insights, experiences and perspectives present within the team to build upon the wide variety of their “thinking-styles and disciplinary upbringings” (Bailey, 2021, p.27). Just like them, this is something that I naturally do, navigating between the different worlds of my disciplinary upbringings. In many ways, my disciplinary upbringings have influenced this doctoral study. My scientific and military background has taught me rigour, structure and the importance of teamwork, especially in a work environment and within research. I strongly believe that this background helped me in implementing a Constructivist Grounded Theory approach, which demands rigour in order to achieve quality (Charmaz, 2006; 2014).

As a bilingual person, which according to Athanasopoulos’ (2011, p.29) loose definition of bilingualism is the early or late adoption of a second language, referring to “the knowledge and use of more than one language in the same mind”, I recognise the importance of language. Words carry meaning, and although I might sometimes struggle to find the right word in a foreign language, I am very careful about others’ words. This is something I have given particular care to during this doctoral study, conscientiously paying attention to the meaning of the research participants’ words during the data collection and analysis activities. My way of behaving as a former linguist, is explained by Martínez del Castillo (2015), who perceives linguistics as a “human way of knowing” (p.62) and states:

*“Linguistics as a human science is nothing but the interpretation of the verbal behavior of the human subject in as much as he intuits, creates, acquires, performs, speaks and says, uses, evaluates, and even speaks of language. Linguistics as such is interpretation, that is, hermeneutics. It consists in speaking of language thus making a theory of knowledge. The guidelines in linguistics must be the dimensions of the human subject manifest in language, namely:*

- 1) The subject as he performs his freedom and intelligence creating meanings;*
- 2) The subject as he acts in his circumstance thus defining himself before the circumstance he is in;*
- 3) The subject as he aims at others thus creating historical objects; and*
- 4) The subject as he has something in common with the others and adapts his speech to contexts and situations thus accepting worlds of knowledge and speech universes, that is, the subject as he belongs to a tradition in the technique of speaking.” (p.80)*

Further, it appears that the languages we speak shape the way we think (Boroditsky, 2012). Whorf (1956, p.221) was one of the first researchers to formulate the theory that language could affect cognition, and that:

*“Users of markedly different grammars are pointed by their grammars towards different types of observations and different evaluations of externally similar acts of observation, and hence are not equivalent as observers but must arrive at somewhat different views of the world”.*

Although there is still little research about the relationship between language and cognition in bilingual individuals (Athanasopoulos, 2011; Pavlenko, 2005), a recent study positively linked multilingualism and the frequent use of multiple languages to a higher level of cognitive empathy (Dewaele and Wei, 2012). Cognitive empathy “measures the appreciation of affective states” (Lawrence et al., 2004, p. 918), supporting the likelihood of multilingual individuals being “more skilful in conversations as they can see the world from their interlocutor’s point of view” (Dewaele & Wei, 2012, p.364). Research demonstrated that language is a powerful tool for humans to categorise “reality and the world” (Athanasopoulos, 2011, p. 33). As a consequence, it is likely that as a multilingual person with a linguistics background, I have been more inclined to perceive and understand the multiple realities of the research participants. This advantage supported the implementation of a constructivist approach and the delivery of more nuanced study outcomes.

Multilingualism has also been linked to divergent thinking and creative behaviour (Kharkhurin, 2008; 2010)- two abilities linked to design. Specifically, Kharkhurin (2008, p.225) demonstrated that bilinguals have a superior ability “to simultaneously activate

and process multiple unrelated concepts from distant categories”, and that speaking more than one language supports nonverbal creativity, while it hinders verbal creativity (Kharkhurin, 2010). In the context of this study, it is likely that my multilingualism facilitated the creation of links between the data and some apparently unrelated concepts and that the solo practitioner-researcher approach of a doctoral study enabled my non-verbal creative thinking throughout the process.

With regards to my design background and the inherent tacit knowledge I had prior to under-taking this doctoral study, it is obvious that it induced a biased view of the area under enquiry. Through my design education and practice of design, I had, just like Brown (2019, p.1), become “a convert and an evangelist of design thinking” and Design Innovation. It was, therefore, impossible to start this doctoral study from an unbiased position, as I already had preconceived ideas and been the witness of certain phenomena and behaviours. However, I believed that two matters allowed me to move away from these initial preconceptions; my participation in GRTI and my multilingualism. My experience at the receiving end of the GRTI programme, as opposed to delivering it, triggered interesting insights that allowed the nuancing of the data previously collected and informed some of the discussion points of this thesis. In addition, regular and proficient users of multiple languages have been identified as more open and open-minded (Dewaele & Stavans, 2012; Dewaele & Van Oudenhoven, 2009; Korzilius et al., 2011), linking multilingualism to higher levels of cultural empathy, open-mindedness and flexibility (Dewaele & Stavans, 2012; Korzilius et al., 2011). Therefore, although I had some preconceptions and bias due to my design experience and knowledge in the area under inquiry, I was more open to being challenged, discovering unexpected routes, and pivoting the study when needed - as described in 5.3. Initial coding on page 122.



# 04

## *A Constructivist Approach to Design Research*



## 4. A constructivist approach to design research

### 4.1. Introduction

A Constructivist Grounded Theory approach has been used to investigate Rapid Design Interventions (RDI) to answer the following research question:

*How do organisations and individuals recognise and sustain the outcomes of RDI, and what are the influencers of these outcomes?*

This chapter explores the historical development of Grounded Theory (Glaser & Strauss, 1967) and its evolution (Glaser, 1978, 1998; Strauss & Corbin, 1998) which led to Constructivist Grounded Theory (CGT) (Charmaz, 2000, 2008, 2014, 2015, 2017a, 2017b). Here, I explain the rationale for using this approach, summarise its implications for my study, and position myself (and the research team) as practitioner-researcher. Finally, this chapter lays the foundation of this doctoral study, revealing the data collection methods chosen, the research participants selection process and the data set contributors.



## 4.2. Methodological Approach

### 4.2.1. Historic Development of Grounded Theory

*Grounded Theory* was first introduced by Glaser and Strauss in 1967 in their article *The Discovery of Grounded Theory; Strategies for Qualitative Research* (Glaser & Strauss, 1967), as an outcome of a six-year long study they conducted to explore the realities of terminal care (Corbin & Strauss, 2015a; Glaser, 2016; Glaser & Strauss, 1967). In opposition to the classic scientific method used then, they took a different stance by not testing a theory, but by building one using their observations, notes, and interviews (Noerager Stern & Porr, 2011), providing an analytical understanding of precise events. What was a new methodological approach at the time offered flexibility and encouraged innovation with its very flexible guidelines (Charmaz, 2008; Glaser & Strauss, 1967; Khambete & Athavankar, 2010). This very flexible approach to research was the foundation of an important criticism of the methodology which “holds out the promise of a healthy theoretical anarchy” without fulfilling it as the methodological positions of some grounded theorists are inflexible (Layder, 1989, p. 53) and only implement certain aspects of its approach. However, with the development of Grounded Theory, Glaser and Strauss succeeded where many ethnographers of the 1960s failed; collecting rich and complex data to understand the experiences and perspectives of others (Charmaz & Thornberg, 2021).

Over the years, Glaser adapted and refined his approach to Grounded Theory, addressing some of the previous criticisms. This approach was influenced by positivism (Birks & Mills, 2015), and the taking of a rather objectivist stance, where a neutral, passive and unbiased observer discovers a single reality. This viewpoint rejects the idea that researchers have preconceptions, prior knowledge and experience (Glaser, 1998). According to Glaser, the researcher discovers ideas that emerge through studying the data. In this version of Grounded Theory, data speak for themselves and are self-evident. Further, Glaser introduced the concept of ‘*all is data*’ (Glaser, 1998), encouraging the researcher to open their mind and horizons to take a more creative approach to data collection and generation, relying heavily on field notes and first-hand observations. However, the Glaserian approach is still criticised for its complexity and difficulty of application, as he did not provide practical guidelines and the outcomes of the research rely on the researcher’s capacity to theorise (Khambete & Athavankar, 2010).

On the other hand, Strauss’ standpoint is inherited from George Herbert Mead who was his teacher (Birks & Mills, 2015) and highly influenced by the work of John Dewey (Strauss, 1991). From them, he inherited an epistemology that inspired Grounded Theory in two ways; the Chicago School of interactionism and a pragmatic philosophy. Through this “innovative philosophy of knowledge”, both Mead and Dewey considered that knowledge is created through interactions and actions, which implies that

knowledge is conditional, unless verified empirically by other researchers (Corbin & Strauss, 2015b, p. 18). However, it is important to highlight that these philosophical reflections only came to Strauss at a later stage, and that he and Glaser, at the time of publishing *The Discovery of Grounded Theory* (Glaser & Strauss, 1967) didn't think in terms of philosophies. Nonetheless, because these philosophies were deeply rooted in Strauss as part of his academic upbringing, they re-emerged through iterations of Grounded Theory application, teaching and writing (Corbin & Strauss, 2015b). Yet, the Straussian approach to Grounded Theory, which provides extensive guidance to the researcher has been criticised for being over-prescriptive and cumbersome, especially for early career researchers and doctoral students (Birks et al., 2019; Khambete & Athavankar, 2010).

In spite of their obvious philosophical divergence, Strauss' approach to Grounded Theory uses some of the procedures explained in his initial publication with Glaser, such as questioning, comparative analysis, theoretical sampling and theoretical saturation (Corbin & Strauss, 2015b). Furthermore, Glaser and Strauss both suggest that there is one reality that can be checked and validated by the researcher's peers (Charmaz, 2000), even if Strauss along with Corbin recognise that the 'acts of knowing are cumulative' and based on previous discoveries (Corbin & Strauss, 2015b). Although Corbin & Strauss displayed some constructivist underpinnings - acknowledging multiple perspectives and '*truths*' (Mills et al., 2006b; Strauss & Corbin, 1990), it is Kathy Charmaz (Charmaz, 2000), a former student of Glaser and Strauss who took Grounded Theory away from its initial objectivist form (Glaser & Strauss, 1967) and gave it a constructivist dimension in the most recent development of the methodology; Constructivist Grounded Theory.

#### 4.2.2. Constructivist Grounded Theory

Grounded Theory "refers to both the research product and the analytic method of producing it" (Charmaz, 2008, p. 397). The researcher collects and analyses qualitative data through inductive methods to develop a theory (or theories). This process allows the researcher to bring and address the 'why' questions in addition to the 'what' and 'how', which qualitative research had been historically failing to answer (*ibid.*).

Constructivist Grounded Theory (CGT) (Charmaz, 2000, 2006, 2017a, 2017b, 2020) - also called Constructionism (Charmaz, 2008) was developed by Kathy Charmaz. This reconstruction of Grounded Theory addresses the criticisms of the methodology, and takes into account the methodological sensitivities of the 21<sup>st</sup> century. For Mills, Bonner & Francis (2006a, 2006b), Constructivist Grounded Theory relates to a relativist ontology and a subjectivist epistemology. However, Charmaz (2008) gives more flexibility to its use as an approach, stating that the epistemological approach of a grounded theorist is what will determine "how, when and to what extent" they will

enforce social constructionist grounds and buildings. It is now “the most prominent version of grounded theory research” (Flick, 2018a, p. 69).

Constructivist Grounded Theory rethinks the relationship between the researcher and the research participants and redefines the concept of reality, which is resulting from “social constructions of the mind” (Guba & Lincoln, 1989, p. 43). This definition involves the pluralism of realities; each reality being true to a single (and unique) individual (Mills et al., 2006b.; Charmaz, 2006; 2008; 2017b). Charmaz (2000; 2006; 2017b) emphasises the importance of understanding these realities and especially the researcher’s, as their role is pivotal within the research; their analytical lens being defined by their unique social world, through which the researcher will make sense of the data. Further, Charmaz (2008) sees action as a focal point, occurring “within socially created situations and social structures”. Her view, consistent with the social constructionist literature, is also consistent with Glaser (1978) and Strauss & Corbin (1998, 1990) who, in spite of their divergence, are sharing the idea of ‘an external reality, the discovery of provisional truth in this reality, the role of the observer, and an unproblematic representation of the research participants’ (Charmaz, 2008, p.400).

In Constructivist Grounded Theory, the research problem usually lays foundations for generic statements, defined by temporal, social and situational conditions (Charmaz, 2008). To address it, the researcher needs to get an accurate understanding of how participants view and construct their world (Blumer, 1969; Goffman, 1989). The collection of thorough and rich data from various data sources (Corbin & Strauss, 2014; Glaser & Strauss, 1967; Pidgeon & Henwood, 1996) helps achieving this as it “facilitates seeking and seeing tacit meanings and actions and constructing useful grounded theories, as the subsequent research accounts attest” (Charmaz, 2008).

By resting on some of the Grounded Theory principles, 21st century social constructionists adhere to the four following principles (Charmaz, 2008):

- (1) ***The research process is a social construction*** - the researcher must address “emergent questions, new insights, and further information” whilst “simultaneously constructing the method of analysis, as well as the analysis”.
- (2) ***Submit research decisions and directions to scrutiny*** - the researcher has to decompose their thought process, thinking through “what they are doing and why they are doing it”, as reflexivity is a cornerstone of constructivism (Ophir et al., 2020).
- (3) ***Improvise methodological & analytic strategies*** - throughout the research process, the scrutiny given by grounded theorists to their methods and themselves bring them to improvise methodological & analytic strategies.
- (4) ***Collect sufficient data*** - in order to discern and document the construction of

the research participants' lives and worlds, the researcher must ensure that they collect rich and sufficient data.

If originally Grounded Theory was developed to be used with both qualitative and quantitative data collection methods, and although Glaser recently addressed at length the use of Grounded Theory in a quantitative setting (Glaser, 2008), it has historically, and almost exclusively, been used with qualitative methods (Boyчук Duchscher & Morgan, 2004). Indeed, Strauss & Corbin (2014, p.6) define Grounded Theory as “a form of qualitative research”, which explains the similarities in the characteristics of Qualitative Researchers and those of Grounded Theorists.

Qualitative research is deemed a relevant method to apply when a researcher intends to understand a phenomenon or an experience, and the value that results from it). Furthermore, Grounded Theory is perceived as a relevant approach when aiming at developing substantive theory, especially in areas where there is limited knowledge (Khambete & Athavankar, 2010) which is the case of my study.

By addressing some of the critiques and bringing a more contemporary dimension to Grounded Theory, Constructivist Grounded Theory offers researchers flexibility while providing a reflective and rigorous structure. This methodology, acknowledging multiple realities, leads researchers to develop a grounded theory that is one of the many possible constructed images of the reality. Acknowledging and addressing this, I later used different methods of triangulation to validate the data (see 5.6, p. 127).

#### 4.2.3. Rationale

Since its introduction in the 1960s by Glaser & Strauss (Glaser & Strauss, 1967), Grounded Theory in its various forms has been widely used in social science research and incrementally applied in other fields such as nursing (Baszanger, 1998; Bowker, & Star, 1999; Clarke, 1998), information systems (Lehmann, 2001), music (Geeves et al., 2016) food consumption (Davies et al., 2019) and business (Battisti & Deakins, 2018). This broad adoption of the methodology aligns with Charmaz's (2008,) opinion that (Constructivist) Grounded Theory can serve “multiple disciplines”.

However, it has proven difficult to find recent Design research and doctoral studies using Grounded Theory (Buie, 2018; Maher, 2020; Morrow, 2012), and more specifically Constructivist Grounded Theory (Chan, 2016). One of the possible explanations for this is the complexity for “beginning researchers” to apply Grounded Theory, especially when supervisors and mentors are not trained in the methodology (Birks et al., 2019; Corbin & Strauss, 2014). But it might also be because Design uses similar methodological approaches, that are more established within the field, such as Action Research or Research through Design for example.

*Action Research* focuses on the close collaboration of researchers and practitioners - and frequently practitioners as researchers within their organisation - “seeking information on the attitudes and perspectives of practitioners in the field” (Gray, 2022, p.35). Although Grounded Theory and Action Research have some commonalities and can be used in conjunction (Azulai, 2021; Teram et al., 2005), Action Research neither fitted the focus of this study, RDI Participants, nor offered the scope to explore a diversity of research participants’ viewpoints in the same way that Constructivist Grounded Theory did.

*Research through Design* offers the potential to explore a research question through employing the act of designing to that question and adopting iterative approaches to synthesise and test emerging theories and understanding (Archer, 1995). Such approaches are beneficial when the topic or phenomena under investigation is set in the future. However, in the case of this study, the phenomena under investigation, RDI, have largely occurred in the past or their design has already been fixed before my involvement.

### 4.3. Positionality of the researcher

As highlighted in the previous sections, Constructivist Grounded Theory recognises the presence of prior knowledge and encourages researchers to consider, capture and acknowledge their positionality as these can bring assumptions and bias into the study which need to be recognised and acknowledged. The following paragraphs focus on mine, and the research team's backgrounds in relation to the area under investigation and discusses their implications in the context of this study.

#### 4.3.1. Influence of the researcher's background

In Chapter "3. Background of the practitioner-researcher & implications" on page 69, I examined my journey in relation to Rapid Design Interventions, prior to, and during my doctoral study. In summary, this doctoral study investigating Rapid Design Interventions originated from the Get Ready to Innovate (GRTI) programme (CFNE, 2021), a Rapid Design-Led Intervention delivered by Creative Fuse North East in which I played various roles (2018-2019); researcher, practitioner as well as facilitator. Subsequently, I was part of the team that refined and delivered GRTI in Armenia (2019-2020) (GRTI Armenia, 2021) and in the United States (2021) (EGK, 2021). During my MA in Multidisciplinary Innovation (2015-2016), through my role as Innovator-in-Residence (2018-2019), via my own business (2019-2021) and as a sole trader (since April 2021), I have been designing, delivering and facilitating many Rapid Design Interventions as well as attending numerous events, webinars and meetings where Design Facilitators, Design Innovation practitioners & Design Thinkers, organisations and individual organisers and recipients of RDI have discussed the area under investigation.

Given my background, I positioned myself as a practitioner-researcher within this study. Being fully embedded in the situation, I used Constructivist Grounded Theory tactics such as memo-writing (Charmaz, 2014, pp. 162–191; Mills et al., 2006) to capture "the frontier of [my] thinking" (Glaser, 1978, p. 83), knowing it would build on my prior knowledge and theoretical preconceptions.

It is essential to acknowledge that I first and foremost identify as a design practitioner. It is my work as Innovator-in-Residence at Northumbria University that triggered a deep curiosity in Rapid Design Interventions and facilitation as a design practice having witnessed the potential of such activities. Undertaking this doctoral study was an opportunity for growth (Corbin & Strauss, 2015b) as a practitioner, but also as a researcher, as this study has allowed me to develop knowledge and understanding of Rapid Design Interventions, and to develop (and test) theory that will be of benefit to the wider practice of Design Facilitation.

### 4.3.2. Influence of the Research Team's background

In line with CGT it is relevant to consider the role and background of this study's supervisory team as they have contributed to the data-set through supervisory meetings, reflective workshops and team reflection activities.

The principal supervisor (MB) has a background in commercial design practice before commencing an academic career 25 years ago. His academic practice has involved significant action research and knowledge exchange activities through which he has developed expertise as a design facilitator of rapid, and longer, design interventions. In relation to this study, he can be considered an experienced practitioner-researcher and educator.

The second supervisor (NS) is an academic with 20 years of experience. His practice-based research relates to design for social innovation and involves co-creative and participatory approaches to navigating complex situations. He has run rapid design interventions across sectors and scales with a variety of heterogeneous groups developing original practices and theoretical contributions. In this study, he can be considered an experienced practitioner-researcher and educator.

### 4.3.3. Implications

Because of the nature of our work and our positions, I have collected and we, as a research team, have analysed data for this study from various perspectives; researchers, practitioner-researchers, and RDI participants.

As researchers, we were *outsiders* in the situation (Greenwood & Levin, 2007), as we hadn't been involved at all in any of the design or facilitation of the interventions discussed. As a practitioner-researcher, we were 'insiders' who had played a role in the situation at some point (Greenwood & Levin, *ibid.*), participating in the design, the delivery and/or the refinement of the RDI the research participants attended.

As *insiders*, it is important to acknowledge the potential for bias in the analysis and interpretation of data. In this position, we had to guard against wishing to observe favourable outcomes and disregard negative data. However - although it is in the context of participatory action research, Kemmis, Mc Taggart and Nixon (2013) highlight the value of being a participant-researcher and employing a critical self-reflection in the area under investigation as this provides a "special access" to insights and knowledge from participants as well as the opportunity to critically reflect upon one's practices. In this type of research, they suggest that:

*Far from being 'disinterested', participants are profoundly interested in their practices, in whether they understand their practices and the consequences of their practices, and in whether the conditions under which they practice are appropriate. The nature, conduct and*

*consequences of their practices vitally affect their self-interests, and their self-interests may affect— and even distort—their practices, the way they understand them, and the conditions under which they practice (Kemmis et al., 2013, p.6).*

This self-interest in the validity and authenticity of the research, together with my awareness of the risk of potential bias and use of triangulation (see 5.6. Triangulation and Slices of Data, p. 127), offers mitigation against such bias. Furthermore, this deep engagement with data is in line with the recommendations of Charmaz & Thornberg (2021) to ensure quality in Constructivist Grounded Theory.

Finally, it is important to highlight that the role of the practitioner-researcher in this study is not ternary, and is significantly more nuanced than those of researcher, practitioner-researcher and RDI participant. Table 4.2 (p. 88) shows the nuances in the roles I played as researcher-practitioner; interviewer and observer as a researcher, and design lead, design team member, facilitator trainer, Design Facilitator and MDI student as a practitioner (Howard & Melles, 2011).

#### 4.3.4. Challenges as a practitioner-researcher

The role of a practitioner-researcher came with its challenges, as I had to navigate the ambiguity of the role as an insider and outsider throughout the study.

The outsider position brought by my practitioner role was difficult to navigate as I became an insider in the situation, specifically during the delivery of GRTI and GRTI-US. While I was focusing on facilitating activities, it was sometimes challenging to step back and observe the situation from a researcher's perspective - as an outsider. The memo-writing process (see 5.2, p. 114) offered by the Constructivist Grounded Theory methodological approach enabled my outsider reflectivity and helped mitigate this challenging situation.

Further, when I was fully focused on the facilitation, it happened at times that I made observations in relation to the area under inquiry (reflection-in-action, Schön, 1983, pp. 49-69). During such occurrences, I quickly captured these insights on a notepad before returning to my practitioner role. Following the activities with participants, these notes were then incorporated in the data set as opportunistic data collection activities (see 4.6.2, p. 103). Planned data collection activities (see 4.6.1, p. 101) where I was a researcher were proven the easiest to navigate, as I was clearly an outsider in the situation and data was straightforwardly captured.

Overall, the Constructivist Grounded Theory mindset (see 4.4.1, p. 89) and practices (see 4.4.2, p. 90) helped me navigate this ambiguous situation and manage the boundary of this dual identity (Arber, 2006) that is the practitioner-researcher.



	RESEARCHER		PRACTITIONER				
	Interviewer	Observer	Design Lead	Design Team Member	Facilitator Trainer	Design Facilitator	MDI Student
Organisation A	Interaction during PhD	Pre-PhD Interaction		Pre-PhD Interaction		Pre-PhD Interaction	
Organisation B	Interaction during PhD			Interaction during PhD		Interaction during PhD	
Organisation C	Interaction during PhD	Pre-PhD Interaction		Pre-PhD Interaction		Pre-PhD Interaction	
Organisation D	Interaction during PhD						
Organisation E	Interaction during PhD						
Organisation F	Interaction during PhD	Interaction during PhD	Interaction during PhD		Interaction during PhD	Interaction during PhD	
Organisation G	Interaction during PhD	Interaction during PhD	Interaction during PhD		Interaction during PhD	Interaction during PhD	
Organisation H	Interaction during PhD	Interaction during PhD	Interaction during PhD		Interaction during PhD	Interaction during PhD	
Organisation I	Interaction during PhD					Interaction via The Blooming Platypus	Pre-PhD Interaction
Organisation J	Interaction during PhD						
Organisation K	Interaction during PhD						
Organisation L	Interaction during PhD						
Organisation M	Interaction during PhD						
Organisation N	Interaction during PhD						
Organisation O	Interaction during PhD						
Organisation P	Interaction during PhD						
Organisation Q	Interaction during PhD						

TABLE LEGEND

 Pre-PhD Interaction	 Interaction during PhD	 Interaction via The Blooming Platypus
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**Table 4.2:** Summary of the positions and roles of the researcher with the research participants over time

## 4.4. CGT Mindset & Practices

Critics have observed that although many authors are claiming to use a Ground Theory methodology, numerous studies fail to achieve a rigorous piece of work, either using a limited amount of prescribed methods throughout their study, loosely using them or completely lacking them (Birks & Mills, 2015; Charmaz, 2008), while others fail to conceptualise theory (Glaser, 2019) or pursue “worthy purposes” (Charmaz & Thornberg, 2021). This section presents the mindset, methods and tools I used throughout this study to achieve quality in research, in line with Constructivist Grounded Theory.

### 4.4.1. Mindset

#### 4.4.1.1. Rigour & quality

Grounded Theory and by extent Constructivist Grounded Theory is a complex and rigorous process that requires simultaneous and integrative collection, analysis and conceptual theorising of data (Boychuk Duchscher & Morgan, 2004). Multiple authors indicate that rigour is a key element to a successful Constructivist Grounded Theory methodological approach (Boychuk Duchscher & Morgan, *ibid.*; Khambete & Athavankar, 2010). The quality of a study employing a CGT methodology and the validity of its outcomes depend on the rigour the researcher demonstrated throughout the process. To achieve quality, Charmaz suggests four criteria (2006; 2014);

- (1) **Credibility** - researchers should collect sufficient data and question it critically and systematically (see 4.6, p. 100), while embracing reflexivity to unpack their assumptions (see 4.3.3, p. 86), through methodological self-consciousness (see 4.4.1.3, p. 90).
- (2) **Originality** - researchers should offer new insights and understanding of an existing problem and provide its conceptualisation (see chapter “5. Constructing meaning & theory from the data” on page 113).
- (3) **Resonance** - researchers should use data collection methods that allow them to shed the light on their research participants’ experiences, providing new meanings to it (see 5.6, p. 127).
- (4) **Usefulness** - researchers should achieve a level of generality by clarifying the research participants’ understandings and experiences (see 5.7, p. 130).

To fulfil these four criteria, I used a combination of approaches in this study; grounded theory, purposive sampling strategy (see 4.5, p. 92), multiple layers of coding (see 5.3, p. 118) and triangulation. However, and as recommended by Barbour (2001), these methods were not solely “technical fixes”, and were used critically, as explained further in each section.

#### 4.4.1.2. The Power of Doubt

Throughout the complex approach that is Constructivist Grounded Theory, researchers indubitably face moments of doubt. As Charmaz emphasises (2017b), doubt is about a critical and analytical mind. Doubt human and can be powerful in a research context as a doubtful individual questions events, tries to figure out uncertainty, and interrogates the perceived reality, which results in a mass of questions enabling critical inquiry and the generation of theory (Charmaz, *ibid.*; Locke et al., 2008). To reach the true potential doubt has to offer, researchers must embrace it. Researchers must not only question their perspectives of the empirical world and how data is generated from it, but also dissect their own social constructions to fully understand an event. This includes their thoughts, perceptions and observations, as well as the analysis and the representation they are doing of it, as “the questions we ask matter; the perspectives underlying our questions count” (Charmaz, 2017b, p. 34).

Embracing doubt meant that I had to question my own perspective and those of the research team regularly throughout the study. This inquiry was not solely addressing the research and the data generated, but also our perception of the data, its analysis and representation. Initially perceived as a burdensome thought-process and approach, I quickly realised that it was actually easier to navigate than I had anticipated.

#### 4.4.1.3. Methodological Self-Consciousness

According to Charmaz (2017b), *methodological self-consciousness* is the process of detecting and dissecting our own worldviews, language, and meanings and revealing how they enter our research in ways we had previously not necessarily considered. It is a conscious and proactive examination of ourselves in the research process, the decisions we make and the actions we take each step of the way as we become aware of our unearned privileges as well as the taken-for-granted privileges accompanying our positions and roles (Charmaz, *ibid.*, p.36; Charmaz & Thornberg, 2021) It is a deeply reflective process within which individuals must undertake a thorough introspection. In this study, memos (see 5.2, p. 114), as well as reflective workshops (see 4.6.1.3, p. 103), and meetings (see 4.6.2.1, p. 103) supported the development of *methodological self-consciousness*.

#### 4.4.2. Practice - Writing as a strategy

Not present in her first pieces of work about Constructivist Grounded Theory, Charmaz (2000) later developed an argument for using writing as a strategy that, in intent, is closer to a literary style than it is to a scientific one (Mills et al., 2006). Although the researchers' writing must be analytical, Charmaz (2011) recommends that the experience and feelings of the participants must be shared and made obvious through their

writing. Additionally, for ethical reasons, it is the researchers' duty "to describe the experiences of others in the most faithful way possible" (Munhall, 2001, p.540).

To facilitate that process and achieve writing as a critical strategy, notes of critical reflexions through the study can help researchers to bring the strong reflexivity to life. This can be done by explaining their position as researchers in their notes as they code data, writing memos, drafting their dissertation and crafting papers (Charmaz, 2017). Specifically, memos are an 'intermediate step' between coding and writing, allowing researchers to dissect, compare and break down codes so that they can be defined by their characteristics. As the study progresses, "memos become more definitive and analytic", ensuring the quality of data (Charmaz & Thornberg, 2021). Throughout this study, I have used memos thoroughly and consistently, writing 55 of them in total.

## 4.5. Sampling strategy

This study uses a theoretical sampling approach. Theoretical sampling is the ongoing process that connects the collection of data to the generation of new theory, as researchers collect, code, and analyse their data. It then informs the data that needs to be collected next and where to find them - all of this towards the development of emerging theory(ies) (Glaser, 1978). In theoretical sampling, researchers do not know precisely in advance the nature of the sample nor where to look for the most appropriate sample (Boyчук Duchscher & Morgan, 2004). The aim of this sampling approach is to “maximize opportunities to compare events, incidents, or happenings to determine how a category varies in terms of its properties and dimensions” (Corbin & Strauss, 1998, p.202).

Comapny category	Staff headcount	Turnover (or)	Balance sheet total
Large	250+	≤ £ 36 m	≤ £ 18 m
Medium	< 250	≤ € 50 m	≤ € 43 m
Small	< 50	≤ € 10 m	≤ € 10 m
Micro	< 10	≤ € 2 m	≤ € 2 m

**Table 4.3:** *Summary of the categorisation of private companies (Department for International Trade, 2020; European Commission, 2003; The Deloitte Academy, 2019)*

In addition, and as a response to the impact caused by Covid-19 on the study (see 7.4, p. 261), a convenience sampling strategy, which involves picking a non-random sample (Neuman, 2014) was combined to the purposive sampling strategy described previously. Combining these two strategies, I recruited organisations that I, or my team at Northumbria University were working, or have worked with, as well as organisations that were recommended by other research participants. All organisations met the criteria listed below:

- Organisations practising design innovation or design thinking,
- Organisations working with design innovation consultancies (whether they are an external consultancy or their internal design team),
- Organisations that are attending, or have attended in the past, Rapid Design Interventions delivered by those design innovation consultancies.

Although there is no prescribed sample size in Grounded Theory, it is essential to consider a sample size and a selection of participants diverse and broad enough to cover the different aspects of the area under investigation (Boyчук Duchscher & Morgan, 2004; Khambete & Athavankar, 2010). For this study, this translated into engaging with private organisations (except Organisation O) of all sizes (see Table 4.3, p. 92) and from various industries.

#### 4.5.1. Research participants

Following the theoretical and convenience sampling strategy, I recruited participants from 17 different organisations to take part in this study, with one organisation's data being removed due to the fact that they never returned their consent form. The table beside (Table 4.5) is an overview of the organisations the recruited participants came from.

Organisations were recruited in relation to the type of RDI they had participated in. Specifically;

- **Organisations A to H** - participated in or facilitated Rapid Design-Led Interventions (Get Ready To Innovate),
- **Organisation I to Q** - participated in or facilitated Rapid Design-Driven Interventions (Design Sprints) as part of Organisation I's Festival.

As presented in the literature review (p. 63), Get Ready to Innovate (GRTI) is a rapid design-led intervention initially developed in 2017, that is supporting organisations in identifying and understanding their barriers and challenges to innovation, as well as developing creative plans to overcome these (Bailey et al., 2022).

The Festival is an annual event organised by Organisation I and brings together a wide range of employees and stakeholders. This Festival, launched in 2017, has been delivered yearly for 3 to 5 days, and offers a combination of inspirational (lightning talks, demos, exhibitions), relaxing (massages, yoga, pub quizzes) and innovation (design sprints and data hacks) activities. Specifically, the Festival is built around the delivery of these innovation activities which aim to address some of the most complex challenges Organisation I and their stakeholders face.

Between March and September 2022, I worked on a side research project for Organisation I alongside this doctoral study, to investigate the value of their Festival and build a comprehensive picture of how RDI are used within this context. Organisation I as well as all research participants allowed me to use the data from this project in my doctoral study. As a result, I triaged all data and solely selected research participants who had participated or facilitated Design Sprints (RDDI).

CODE	COUNTRY	SECTOR	SIZE	INDUSTRY
<b>Organisation A</b>	United Kingdom	Private	Micro (0-9)	Retail
<b>Organisation B</b>	United Kingdom	Public	Micro (0-9)	Business, consulting and management services
<b>Organisation C</b>	United Kingdom	Private	Micro (0-9)	Marketing, advertising and PR
<b>Organisation D</b>	United Kingdom	Private	Small (10-49)	Accountancy, banking and finance
<b>Organisation E</b>	The consent form for this organisation was never received, even after numerous reminders, therefore, all data regarding this organisation and their participant has been disregarded and deleted.			
<b>Organisation F</b>	United States	Private	Micro (0-9)	Beauty
<b>Organisation G</b>	United States	Private	Micro (0-9)	Business, consulting and management services
<b>Organisation H</b>	United States	Private	Micro (0-9)	Media and internet
<b>Organisation I</b>	United Kingdom	Private	Large (250+)	Utilities
<b>Organisation J</b>	Australia	Private	Large (250+)	Utilities
<b>Organisation K</b>	United Kingdom	Private	Small (10-49)	Information and Technology
<b>Organisation L</b>	United Kingdom	Private	Large (250+)	Utilities
<b>Organisation M</b>	United Kingdom	Private	Large (250+)	Utilities
<b>Organisation N</b>	United Kingdom	Private	Large (250+)	Utilities
<b>Organisation O</b>	United Kingdom	Third	Small (10-49)	Business, consulting and management services
<b>Organisation P</b>	Global	Private	Large (250+)	Engineering and manufacturing
<b>Organisation Q</b>	United Kingdom	Private	Small (10-49)	Information and Technology

**Table 4.4:** *Overview of the research participants' organisations*

In addition to me and my research team, the planned data collection activities involved the research participants presented in Table 4.5 (p. 95) (all names have been randomly assigned for anonymisation purposes).

**Table 4.5:** Overview of the research participants

<b>Grace</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px; font-weight: bold;">ORG. A</span>	<b>Becky</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px; font-weight: bold;">ORG. B</span>	<b>Layla</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px; font-weight: bold;">ORG. C</span>	<b>Claire</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px; font-weight: bold;">ORG. D</span>	<b>Violet</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px; font-weight: bold;">ORG. F</span>	<b>Emelia</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px; font-weight: bold;">ORG. G</span>
<b>ROLE IN RELATION TO RDI</b> RDLI Participant	<b>ROLE IN RELATION TO RDI</b> Design Facilitator	<b>ROLE IN RELATION TO RDI</b> RDLI Participant	<b>ROLE IN RELATION TO RDI</b> RDLI Participant	<b>ROLE IN RELATION TO RDI</b> RDLI Participant	<b>ROLE IN RELATION TO RDI</b> RDLI Participant
<b>POSITION IN THE ORGANISATION</b> Founder & owner	<b>POSITION IN THE ORGANISATION</b> Founder & owner	<b>POSITION IN THE ORGANISATION</b> Founder & owner	<b>POSITION IN THE ORGANISATION</b> CEO	<b>POSITION IN THE ORGANISATION</b> Founder & owner	<b>POSITION IN THE ORGANISATION</b> Founder & owner
<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured
<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> GRTI 1-to-many	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> GRTI 1-to-many & GRTI-US	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> GRTI 1-to-many	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> GRTI 1-2-1	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> GRTI-US	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> GRTI-US
<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> April 2018	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> January-June 2018 & March 2021	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> March 2018	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> 2017	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> March 2021	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> March 2021
<b>BACKGROUND IN RELATION TO RDI</b> No prior experience of rapid design-led interventions before GRTI and has not participated in any further RDI ever since.	<b>BACKGROUND IN RELATION TO RDI</b> Was a novice facilitator during the delivery of GRTI 1-to-many in 2018. Has delivered RDI regularly since.	<b>BACKGROUND IN RELATION TO RDI</b> No prior experience of rapid design-led interventions. Since attending GRTI, she has done some design thinking sessions since, but "nowhere near as in-depth or intense".	<b>BACKGROUND IN RELATION TO RDI</b> No prior experience of rapid design-led interventions before GRTI but has participated in further RDI since.	<b>BACKGROUND IN RELATION TO RDI</b> No prior experience of rapid design-led interventions before GRTI.	<b>BACKGROUND IN RELATION TO RDI</b> No prior experience of rapid design-led interventions before GRTI.
<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No prior experience of design innovation or design thinking before the RDI.	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> Design graduate undertaking a PhD investigating areas of Design Innovation.	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No prior experience of design innovation or design thinking before the RDI. However, she is now working in UX Design and has undertaken design training.	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No prior experience of design innovation or design thinking before the RDI, but has been learning more about design thinking since and is working towards a DI culture for her organisation.	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No prior experience of design innovation or design thinking before the RDI.	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No prior experience of design innovation or design thinking before the RDI.
<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> I was leading the facilitation of the GRTI 1-to-many sessions with Grace in 2018, which were delivered with the help of two MA/MSc Multidisciplinary Innovation (MDI) students. Our relationship has been friendly ever since.	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> Becky worked with me on GRTI 1-to-many as well as other innovation projects when I was Innovator-in-Residence at Northumbria University. She invited me to take part in the project and deliver GRTI-US.	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> Layla and I worked together in 2018 during some of the GRTI sessions I facilitated. After the delivery of GRTI, Layla and I were evolving in close professional and personal circles and encountered each other regularly.	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> Claire and I had no prior connection before this study. We were introduced by MB. Before the interview, we mostly communicated by emails, although we had a video call a couple of weeks prior to get to meet each other.	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> Violet and I did not know each other before she applied to the programme GRTI-US was part of. I reviewed her application and was on the interview panel for her after she was shortlisted. I was part of the facilitation team for the RDLI she participated in.	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> Emelia and I met during the delivery of the GRTI-US, where I was part of the facilitation team and we developed a friendly relationship fairly quickly.
<b>POTENTIAL BIAS (IF RELEVANT)</b> Grace attended GRTI, which I helped designing and facilitating. Her responses might have been influenced by our team's delivery of RDI, but she might also have been less encline to be critical with the RDLI.	<b>POTENTIAL BIAS (IF RELEVANT)</b> Becky trusted me to train the facilitators and design the GRTI-US sessions. However, this means that my work and my positionality might have influenced her responses.	<b>POTENTIAL BIAS (IF RELEVANT)</b> Layla attended GRTI, which I helped designing and facilitating. Her responses might have been influenced by our team's delivery of RDI, but she might also have been less encline to be critical with the RDLI.	<b>POTENTIAL BIAS (IF RELEVANT)</b> n/a	<b>POTENTIAL BIAS (IF RELEVANT)</b> Violet attended GRTI-US, which I designed, helped facilitating, and led. Her responses might have been influenced by my perception of RDI, but she might also have been less encline to be critical with the RDLI.	<b>POTENTIAL BIAS (IF RELEVANT)</b> Emelia attended GRTI-US, which I designed, helped facilitating, and led. Her responses might have been influenced by my perception of RDI, but she might also have been less encline to be critical with the RDLI.



<b>Miles</b> <span>ORG. H</span>	<b>Pauline</b> <span>ORG. I</span>	<b>Ethan</b> <span>ORG. I</span>	<b>Susie</b> <span>ORG. I</span>	<b>Lee</b> <span>ORG. I</span>	<b>William</b> <span>ORG. I</span>
<b>ROLE IN RELATION TO RDI</b> RDLI Participant	<b>ROLE IN RELATION TO RDI</b> Design Facilitator	<b>ROLE IN RELATION TO RDI</b> Design Facilitator	<b>ROLE IN RELATION TO RDI</b> Other role in RDI	<b>ROLE IN RELATION TO RDI</b> Design Facilitator	<b>ROLE IN RELATION TO RDI</b> Design Facilitator
<b>POSITION IN THE ORGANISATION</b> Co-founder & owner	<b>POSITION IN THE ORGANISATION</b> Head of Innovation	<b>POSITION IN THE ORGANISATION</b> Innovation Partnership Manager	<b>POSITION IN THE ORGANISATION</b> Innovation Support Coordinator	<b>POSITION IN THE ORGANISATION</b> CIO	<b>POSITION IN THE ORGANISATION</b> Business analyst & Innovation Ambassador
<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured & conversational interviews	<b>TYPE OF INTERVIEW CONDUCTED</b> Informal conversational interview	<b>TYPE OF INTERVIEW CONDUCTED</b> Informal conversational interview	<b>TYPE OF INTERVIEW CONDUCTED</b> Informal conversational interview	<b>TYPE OF INTERVIEW CONDUCTED</b> Informal conversational interview
<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> GRTI-US	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> n/a	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> n/a	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> n/a	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> n/a	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> n/a
<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> March 2021	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> Since 2017	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> Since 2017	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> Since 2017	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> Since 2017	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> Since 2018
<b>BACKGROUND IN RELATION TO RDI</b> No prior experience of rapid design-led interventions before GRTI.	<b>BACKGROUND IN RELATION TO RDI</b> Experienced and delivered many RDDI in her previous job roles, in the context of the Festival and in day-to-day activities in her role at Org. I.	<b>BACKGROUND IN RELATION TO RDI</b> Experienced RDDI in the context of the Festival and in day-to-day activities at Org. I	<b>BACKGROUND IN RELATION TO RDI</b> Experienced RDDI in the context of the Festival and in day-to-day activities at Org. I	<b>BACKGROUND IN RELATION TO RDI</b> Was first introduced to Design Sprint in 2016 by an external consultancy. Has been taking part in them and supported their delivery ever since.	<b>BACKGROUND IN RELATION TO RDI</b> Experienced RDDI in the context of the Festival and in day-to-day activities at Org. I
<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No prior experience of design innovation or design thinking before the RDI.	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> Has been practicing design innovation and design thinking for the past 10 years.	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> Is part of Org. I Innovation Team	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> Is part of Org. I Innovation Team	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> Been supporting and pushing Innovation within his organisation for many years, instigator of the Festival	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> Is a member of the Innovation Ambassador team at Org. I
<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> Miles and I met during the delivery of the GRTI-US, where I was part of the facilitation team. I was a bit confused by him at first because he was all over the place, but I could see his potential.	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> I was introduced to Pauline by the Head of Marketing & External Communications at org. I. She has been really warm and welcoming since the beginning and even invited me to some of their Innovation Ambassadors monthly meetings.	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship
<b>POTENTIAL BIAIS (IF RELEVANT)</b> Miles attended GRTI-US, which I designed, helped facilitating, and led. Her responses might have been influenced by my perception of RDI, but she might also have been less encline to be critical with the RDLI.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> After Pauline's first interview in 2021, she invited me and The Blooming Platypus to facilitate a Design Sprint at their Festival in 2021, and worked closely with her between April and August 2022 as Research Assistant on a project she commissioned to better understand the value of Organisation I's Festival.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. As a member of the Innovation Team at Org. I, Ethan might have been influenced by a willingness to see a positive outcome to the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. As a member of the Innovation Team at Org. I, Susie might have been influenced by a willingness to see a positive outcome to the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. As the CIO and instigator of the Festival at Org. I, Lee might have been influenced by a willingness to see a positive outcome to the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. William was also a Design Facilitator and Innovation Ambassador there and may have wanted a more positive outcome of the research.

<b>Oliver</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px;">ORG. I</span>	<b>Jack</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px;">ORG. I</span>	<b>Ismail</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px;">ORG. I</span>	<b>Matthew</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px;">ORG. I</span>	<b>Jean</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px;">ORG. K</span>	<b>Ewan</b> <span style="background-color: #4a5558; color: white; padding: 2px 5px;">ORG. K</span>
<b>ROLE IN RELATION TO RDI</b> RDDI Participant	<b>ROLE IN RELATION TO RDI</b> RDDI Participant	<b>ROLE IN RELATION TO RDI</b> RDDI Participant	<b>ROLE IN RELATION TO RDI</b> Design Facilitator	<b>ROLE IN RELATION TO RDI</b> Design Facilitator	<b>ROLE IN RELATION TO RDI</b> Other role in RDI
<b>POSITION IN THE ORGANISATION</b> Civil Engineer	<b>POSITION IN THE ORGANISATION</b> Intern	<b>POSITION IN THE ORGANISATION</b> Wholesale Operation Assistant	<b>POSITION IN THE ORGANISATION</b> Innovation Lead	<b>POSITION IN THE ORGANISATION</b> Commercial Business Director UK	<b>POSITION IN THE ORGANISATION</b> Product Director UK
<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Informal conversational interview	<b>TYPE OF INTERVIEW CONDUCTED</b> Informal conversational interview	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured
<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> Design Sprints	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> Design Sprints	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> Design Sprints	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> Design Sprints	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> Design Sprints	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> n/a
<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> Done their first IF in 2019	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> July 2022	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> July 2022	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> A couple of mini-sprints and then, since 2020	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> In previous job and then since 2020	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> n/a
<b>BACKGROUND IN RELATION TO RDI</b> Third Festival	<b>BACKGROUND IN RELATION TO RDI</b> Has experienced at least one RDDI.	<b>BACKGROUND IN RELATION TO RDI</b> Has experienced at least one RDDI.	<b>BACKGROUND IN RELATION TO RDI</b> Started attending the Festival in 2020, did a couple of Sprints as a participant, and then became a Design Facilitator.	<b>BACKGROUND IN RELATION TO RDI</b> Experienced RDDI in her previous job and in the context of the Festival	<b>BACKGROUND IN RELATION TO RDI</b> His organisation sponsored one of the Design Sprint at the Festival.
<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No information	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No information	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No information	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> Innovation Lead in his company, trying to raise awareness about DI in his organisation.	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No information	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No information
<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship
<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. Oliver was also an RDDI participant who works at Org. I. He might have wanted a positive outcome of the research for the Festival's sustainment.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. Jack was also an RDDI participant who works at Org. I. He might have wanted a positive outcome of the research for the Festival's sustainment.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. Ismail was also an RDDI participant who works at Org. I. He might have wanted a positive outcome of the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. Matthew was also a Design Facilitator their and may have wanted a more positive outcome of the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. Jean was also a Design Facilitator there and may have wanted a more positive outcome of the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Org. I to better understand the value of their Festival. Ewan was sponsoring one of the Design Sprints.

<b>Jane</b> <span>ORG. L</span>	<b>Oscar</b> <span>ORG. M</span>	<b>Lucy</b> <span>ORG. N</span>	<b>Eugene</b> <span>ORG. O</span>	<b>Vincent</b> <span>ORG. P</span>	<b>Jakob</b> <span>ORG. Q</span>	<b>Max</b> <span>ORG. Q</span>
<b>ROLE IN RELATION TO RDI</b> RDDI Participant	<b>ROLE IN RELATION TO RDI</b> RDDI Participant	<b>ROLE IN RELATION TO RDI</b> RDDI Participant	<b>ROLE IN RELATION TO RDI</b> Design Facilitator	<b>ROLE IN RELATION TO RDI</b> Other role in RDI	<b>ROLE IN RELATION TO RDI</b> Design Facilitator	<b>ROLE IN RELATION TO RDI</b> Design Facilitator
<b>POSITION IN THE ORGANISATION</b> No job role information	<b>POSITION IN THE ORGANISATION</b> No job role information	<b>POSITION IN THE ORGANISATION</b> No job role information	<b>POSITION IN THE ORGANISATION</b> Innovation Director	<b>POSITION IN THE ORGANISATION</b> Engineering Director	<b>POSITION IN THE ORGANISATION</b> CEO	<b>POSITION IN THE ORGANISATION</b> Chief scientific officer
<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Semi-structured	<b>TYPE OF INTERVIEW CONDUCTED</b> Informal conversational interview	<b>TYPE OF INTERVIEW CONDUCTED</b> Informal conversational interview	<b>TYPE OF INTERVIEW CONDUCTED</b> Informal conversational interview	<b>TYPE OF INTERVIEW CONDUCTED</b> Informal conversational interview
<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> Design Sprints	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> Design Sprints	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> Design Sprints	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> n/a	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> Design Sprints	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> n/a	<b>NAME OF RDI ATTENDED OR FACILITATED (WHERE APPLICABLE)</b> n/a
<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> July 2022	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> July 2022	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> July 2022	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> n/a	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> Since 2017	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> n/a	<b>DATE OF ATTENDANCE / DELIVERY OF THE RDI (IF KNOWN)</b> n/a
<b>BACKGROUND IN RELATION TO RDI</b> Has experienced at least one RDDI.	<b>BACKGROUND IN RELATION TO RDI</b> Has experienced at least one RDDI.	<b>BACKGROUND IN RELATION TO RDI</b> Has experienced at least one RDDI.	<b>BACKGROUND IN RELATION TO RDI</b> Has been facilitating RDI for many years on a regular basis.	<b>BACKGROUND IN RELATION TO RDI</b> As a sponsor organisation, Vincent has been taking part in RDDI delivered at the Festival since its launch.	<b>BACKGROUND IN RELATION TO RDI</b> Has been facilitating RDI for many years on a regular basis.	<b>BACKGROUND IN RELATION TO RDI</b> Attended a Design Sprint with his organisation and then trained a Design Facilitator
<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No information	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No information	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No information	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> Is a Design Innovation practioner and practices it on a day-to-day basis	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> No information	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> Has a Design Thinking background and uses this kind of practices in-house	<b>BACKGROUND IN RELATION TO DESIGN INNOVATION</b> Uses this kind of practices in-house
<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship	<b>RELATIONSHIP BETWEEN P. AND THE PRACTITIONER-RESEARCHER</b> No pre-existing relationship
<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Org. I to better understand the value of their Festival. Jane was also a RDDI participant there and may have wanted a more positive outcome of the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Org. I to better understand the value of their Festival. Oscar was also a RDDI participant there and may have wanted a more positive outcome of the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Org. I to better understand the value of their Festival. Lucy was also a RDDI participant there and may have wanted a more positive outcome of the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Org. I to better understand the value of their Festival. Max was also a Design Facilitator their and may have wanted a more positive outcome of the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Org. I to better understand the value of their Festival. Vincent was sponsoring one of the Design Sprints.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. Jakob was also a Design Facilitator there and may have wanted a more positive outcome of the research.	<b>POTENTIAL BIAIS (IF RELEVANT)</b> Research participant in the research project commissioned by Organsiation I to better understand the value of their Festival. Max was also a Design Facilitator there and may have wanted a more positive outcome of the research.

#### 4.5.2. Data set contributors

The data set contributors are individuals who were not initially meant to be part of the study. However, making the most of opportunities arising during this study and fully embracing Grounded Theory principles (Glaser, 1998), data set contributors are the individuals who were involved in the opportunistic data collection activities. Importantly, all data set contributors met at least one of the criteria listed below:

- Member of my research team,
- Member of my community of practice,
- Design Facilitators,
- Design Innovation practitioners & Design Thinkers,
- Participants and/or organisations who have been through RDI or use Design Innovation.

It is essential to note that all data was anonymised according to the processes described in “4.7.1. Ensuring data anonymity” on page 105, which protected the data set contributors. In addition, the data captured were standpoints, insights and perspectives about the area under investigation. No sensitive information, nor commercial data were captured.

#### 4.5.3. Sampling strategy summary

As a result of theoretical and convenience sampling strategies and the planned and opportunistic approaches to data collection, the data used in this study comes from a large number of activities and interactions I had over the course of my doctoral research. The individuals who have contributed to this study by design, or by chance, fall in two main categories; research participants and data set contributors - summarised in Table 4.6 (p. 100).

Research participants (planned & by design)	Data set contributors (opportunistic & by chance)
The practitioner-researcher (me)	
The research team	
Design Facilitators	
RDI participants & their organisations	Design Innovation practitioners & Design Thinkers
Stakeholders who participated in RDI organised by a company different from theirs.	Participants & organisations who have been through RDI or use Design Innovation
	The practitioner-researcher's community of practice

**Table 4.6:** *Overview of the categories of individuals who contributed to this study*

#### 4.6. Collecting data in Constructivist Grounded Theory

The power of Grounded Theory is in its flexible approach enabled by the multiple potential sources of data that can be used in the research (Khambete & Athavankar, 2010), as Glaser's famous maxim '*all is data*' emphasises (Glaser, 1998). Interviews are the most common approach to data gathering in Constructivist Grounded Theory, followed closely by ethnographic methods and analyses of documents (Charmaz, 2014, p. 22). More specifically, CGT suggests that researchers might want to use methods like, but not restricted to, first-hand observations, informal conversations, field notes, interviews, and information from records and reports (Charmaz, 2008, 2014). This study builds upon this flexible approach to data collection, combining both planned and opportunistic approaches to data collection. The planned activities are activities I designed, recruited participants for, scheduled and conducted myself throughout the study. In contrast, the opportunistic activities are side events I attended as doctoral researcher or as design practitioner, but which were not initially meant to be data collection activities.

As a practitioner-researcher deeply embedded in practice, this approach allowed me to fully embrace CGT and quickly respond to arising opportunities, such as an

encounter at a conference or an RDI participant commenting on a session I facilitated. Where data was collected opportunistically, my anonymised notes were added to the data set. As this study progressed I became better at spotting potential sources of *opportunistic data*, more purposeful in my choice of events to attend and better prepared to respond to these opportunities. By engaging with other design researchers, thinkers and practitioners, or organisations using RDI, insights and new understanding about the area under investigation emerged, giving more depth and nuance to the data collected in a planned manner.

Although I adopted both *planned* and *opportunistic* approaches to data collection and treated both sources of data with equal importance as per Constructivist Grounded Theory principles, the vast majority of new insights came from planned data collection activities, and therefore from the research participants. The opportunistic data collection supported the development of the theory, creating a broader picture of RDI and creating links between its different components. In total, 31 planned and 52 opportunistic activities have contributed towards the data set (see A. Appendix A, p. 291). Using multiple methods of data collection enabled a data triangulation (Denzin, 1970) to take place (“5.6. Triangulation and Slices of Data” , p. 127), meaning that data was collected from different sources and over different periods of time (Easterby-Smith et al., 2022). As all methods of data collection come with their own strengths and weaknesses, employing a varied range of data collection methods balanced these out (Gray, 2022).

#### 4.6.1. Planned data collection activities

Although interviewing is not the only method of data collection in Grounded Theory, it is by far the most common one (Charmaz, 2014). In the context of this study, I conducted eleven semi-structured and ten informal conversational (unstructured) interviews. Both types of interviews are in line with a constructivist philosophy in which the interviewer and interviewees ‘co-construct’ the data and work hand-in-hand to make sense of the area under investigation (Gray, 2022).

##### 4.6.1.1. Semi-structured Interviews

Often used to collect qualitative data, semi-structured interviews are *directed conversations* (Pidgeon & Henwood, 1996) offering great levels of flexibility as they are not as strongly monitored and controlled as structured interviews, which makes them very well suited to CGT (Gray, 2022).

In preparation for the semi-structured interview, researchers identify a list of questions and topics of importance to be discussed during the interview through the literature and analysis of data already collected. During the interview, researchers are not

always able to cover all questions and topics with each participant, as the participants' responses are unpredictable and may uncover insights and perspectives that had not been considered priorly, but must be investigated. In such situations, researchers should follow the flow of the discussion and respond to arising opportunities by adapting the order of questions and constructing new and unanticipated questions on the spot (Bernard & Ryan, 2010; Gray, 2022). Pigeon and Henwood (Pidgeon & Henwood, 1996) caution against overly directive interviews that lack flexibility and fail to respond to new elements, as they might result in researchers missing out on potential new leads in the study.

Here, semi-structured interview questions were initially determined based on tacit knowledge, literature review and gaps in knowledge. As data emerged and the study progressed, I refined the interview questions to either investigate new insights, or deepen existing ones. Over the course of the study, I conducted 17 semi-structured interviews in total.

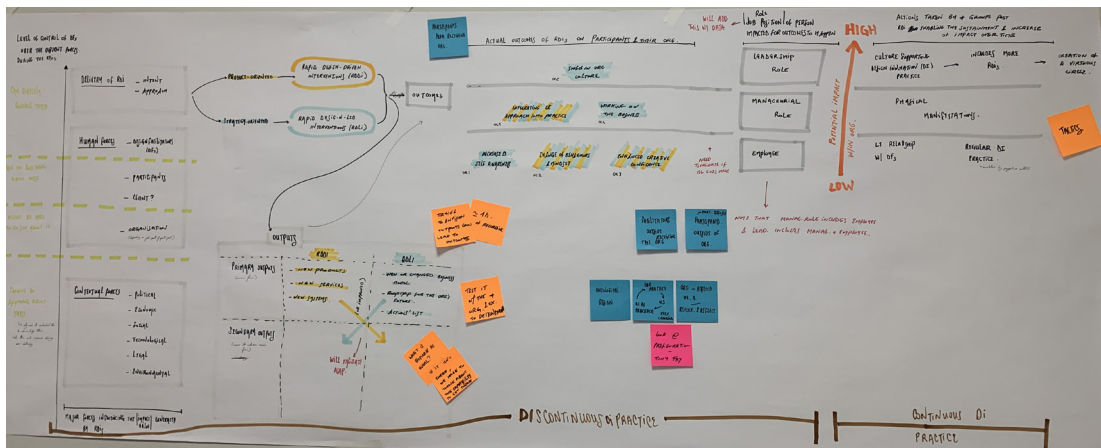
#### 4.6.1.2. Informal Conversational Interviews

Informal conversational interviews are the most open-ended interviewing method, allowing researchers to follow the path the interview is taking, explore insights and observations the participant raises and generate spontaneous questions as the conversation progresses (Gray, 2022). This type of unstructured interview provides the richest source of data for theory building as it gives participants the freedom to discuss what is pertinent to them in their reality and the power to control the depth, the length and the order of their answers. If this empowerment of the interviewee does not happen in spite of the interviewer, who sets the tone and the topic of the interview (Corbin & Strauss, 2015a, p. 38), it is crucial to avoid the 'interviewer effect', which is when the interviewer takes over and influences the course and direction of the session, based on previous data and research.

It is essential to note that these informal conversational interviews were solely used with research participants interviewed in the context of the Festival organised by Organisation I. When conducting the side research project for Organisation I, it was decided that this method of interview would give greater flexibility and more depth to both foci, while supporting the short data analysis turnover needed in both cases. In addition, these 11 informal conversational interviews were used just after I made the distinction between Rapid Design-Led and Rapid Design-Driven Interventions (see 5.3. Initial coding, p. 118), which allowed me not to align my questions to prior data and compare the different types of RDI.

### 4.6.1.3. Reflective workshops

Throughout the study, I conducted four two-hour workshops with the research team. During these activities, I presented to the research team the data collected thus far and my understanding of it, the emerging codes and theory (see Figure 4.5, p. 103). From there, we discussed and debated, bringing different perspectives and interpretations to life, and building theory. More than being solely a data collection and an analysis activity, reflective workshops allowed for a collaborative form of inquiry, proven effective to reduce the risk of personal bias (Chong & Yeo, 2015).



**Figure 4.5:** Visual created in March 2022 and used as prompt for one of the reflective workshop (T31-p)

## 4.6.2. Opportunistic data collection activities

### 4.6.2.1. Meetings

Over the course of my PhD, I had regular meetings with my supervision team, individuals from my community of practice, former colleagues and other Design Innovation practitioners and Design Thinkers, but also with clients of The Blooming Platypus. Even though most of these had absolutely nothing to do with the area under investigation, some ended up discussing Rapid Design Interventions and design facilitation as a practice. In those cases, I captured the main points of the conversation through anonymised meeting notes, which were then incorporated into the data set. In total, 44 meetings contributed to this study.

### 4.6.2.2. Webinars & lectures

As part of my work as doctoral researcher, but also as practitioner, I regularly attended online events and face-to-face lectures discussing the area under investigation, bringing in new insights, or emphasising data already collected. In total, 5 of these webinars and lectures were directly relevant to the area of research and therefore included in the dataset.



#### 4.6.2.3. Review of outputs

On a few occasions during interviews, research participants mentioned outputs from RDI - such as project reports - that supported their responses and added to the conversation. In those instances, I asked them if they would kindly share those outputs with me so I could review what was being said about the outcomes of the intervention.

In June 2019, during my time as Innovator-in-Residence delivering Get Ready to Innovate in Armenia (GRTI-A), our research team facilitated an unpack session with 24 participants using reflection cards. Each of these cards had one key question we asked participants to think about and respond to, anonymously. The aim at the time was not so much to collect data, but to give the participants time and space to reflect upon their journey. These cards, which had been unused since the end of the programme were archived by our team.

When I revisited these cards, I realised that not all cards would be relevant to this study as some of the questions were more oriented towards the participants' understanding of their business and their next steps. However, the cards '*What have you learned?*' and '*How have you changed?*' fitted the area under investigation and the responses were included in the data set.

In total, between the project reports and the cards from GRTI-A, the outputs from 4 separate sets of RDLI were reviewed.

## 4.7. Capturing data

### 4.7.1. Ensuring data anonymity

I have developed an anonymisation system that aligns with Charmaz's principle of social constructions (2008). This system allows data traceability through participants, their role, and their organisations. Through it, every organisation (O), team (T) and participant (P) was given a number. As an example, I (P1) as part of the research team (T1) at Northumbria University (O1) was being referred to as O1T1P1. The organisations, teams, or persons mentioned during data collection activities are following the same anonymisation process and were being referred to as Mentioned Organisation x (MOx), Mentioned Team y (MTy) and Mentioned Person z (MPz).

Furthermore, this anonymisation system allowed me to map out the different relationships and interactions between me, the research team, the research participants and the data set contributors. This process emphasises famous constructivist assumptions in which reality is multiple and context-dependent. Each individual evolves in their social world where they hold a specific position. The research process results from the interactions between those individuals, the participants, the research team and the researcher, in which they co-construct the data (Charmaz, 2008).

### 4.7.2. Data transcription

Transcription is “the process of transferring audio or video recordings of speech or hand-written notes into a typed or word-processed form” (Gibbs, 2018, p. 195). The most commonly used method for data transcription in research is *pragmatic transcription*, which allows researchers to develop a transcription format tailored to their needs. Ordinarily, these transcripts are verbatim, that is to say, an exact reproduction of what the research participant discussed (Evers, 2011). Although pragmatic transcription is one of the most straightforward techniques, it can take four to eight hours to transcribe an hour of audio, depending on the quality, the pronunciation and the typing speed (Evers, 2011; Halcomb & Davidson, 2006).

To better understand the extent of work required, I transcribed the three research team's reflection activities (Z1-p, T9-p & T10-p). Unsurprisingly, it was a burdensome and laborious task for me, as a French native. My transcription rate was about 10 to 14 hours of work per hour of audio recording, requiring all my attention, focus and energy, which added an extra challenge to conducting research with ADHD (see 7.5.2, p. 262). To address this, I decided with my research team to use Otter, an AI transcription software, for further transcriptions. However, this computer assisted transcription software had at times “low level of accuracy” (Jenkins et al., 2021).

Indeed, one of the most common pitfalls of transcription is the misinterpretation or

mishearing of a word or a part of a sentence - even for native speakers and software. When other impediments such as language barriers and jargon are present, Easton, Fry McComish and Greenberg (2000) strongly advise researchers also to engage in both the interviewing and transcribing process, even if they recognise that it is difficult to achieve. In order to address these challenges and avoid mistakes, I conducted data cleaning before proceeding to data coding.

4.7.3. Data cleaning

Misinterpretation and mishearing amongst other errors (Easton et al., 2000) mean that a data cleaning process, also called data cleansing or scrubbing must be completed prior to data analysis. This stage allows researchers to look through the transcript for any errors or inconsistencies and remove them from data collected to increase its quality (Rham & Do, 2000), as shown in Table 4.7 (p. 106). When cleaning data I did not transcribe, I listened to the tape recording of the interview while checking the transcription for accuracy.

Quote after data transcription	Quote after data cleaning	Explanation
<i>So that might be XXXXXX into spectacles.</i>	<i>So that might be rose-tinted spectacles.</i>	I did not know this expression, but the context and the word 'spectacles' made me believe it was an English idiom.
<i>When we see organisation[s] coming to us for rapid and co-creative design-led interventions, we, like, they kind of come because they either want to tackle a problem, but differently, because they've kind of done it all.</i>	<i>When we see organisation[s] coming to us for rapid and co-creative design-led interventions, they come because they either want to tackle a problem differently because they've done it all.</i>	The cleaning process helped here with the global understanding and fluidity of the sentence by removing filler words and discourse markers without changing its meaning.

**Table 4.7:** *Examples of data cleaning*

In addition to this advice on content, Miles et al. (2014) recommend using a unique

layout and font size across all transcripts, as well as visually highlighting the difference between the interviewer and the interviewee. Khambete & Athavankar (2010) advocate a transcript layout where each paragraph *prima facie* expresses a single idea when possible, which allowed the researcher to identify chunks addressing the research questions and those which were only informative and contextual (Elliott, 2018).

#### 4.7.4. Data coding

Data coding is an analytical activity in which researchers define and label sections of text from research participants and data set contributors. Specifically, researchers construct codes as they actively name data (Charmaz, 2014). Data coding is the main analytic activity in Constructivist Grounded Theory, where many of the procedures developed by Glaser and Strauss are maintained, even if Charmaz makes the process more manageable (Flick, 2018), taking researchers through three coding phases (Charmaz, 2014; Charmaz & Thornberg, 2021; Flick, 2018; Thornberg & Charmaz, 2014); initial (see 5.3, p. 118), focused (see 5.4, p. 122) and theoretical (see 5.5, p. 124) coding, further explained in Chapter 5.

In this study, the data coding process has been one of trial and error. Indeed, I initially started using QSR international nVivo software to code all data, which was a challenge as I had never used it before. Unfortunately, at the end of August 2020, Northumbria University was impacted by a cyber incident (Sharma, 2020), which resulted in my inability to access my data and codes for two months. Willing to progress in my study, I decided to re-code manually all data during this period. However, when I started writing an academic paper early 2021, I realised that the quantity of data and codes I had was unmanageable without the use of a software. By that point, all IT issues had been solved by the university, and I decided to go back to using nVivo. Although it was time-consuming at the time, it greatly simplified the navigation and analysis of the data.

#### 4.7.5. Ethical considerations

Ethics The only sensitive topic identified is that of commercially sensitive information, where examples could be: intellectual property pertaining to strategic advantages or related to organisational relationships (clients, suppliers, etc...), and others. The strategy for addressing this was to give anonymity to the organisations and participants involved, and to allow members of the organisations to request any information to be omitted from any published work, or supporting documentation (transcripts, field notes, reflections, photographs). Overall, objects of commercially sensitive information did not fall within the primary interests of the research. The research was not concerned with commercially sensitive data, and such data was not requested for use in the study. However, during engagement with collaborating organisations, it is possible

that commercially sensitive information was discussed. This was not considered as data in the study, but was incidentally recorded when it was mentioned during planned data collection activities. To address this, the informed consent statements highlighted procedures for maintaining confidentiality.

In addition, steps take in line with Northumbria University ethics guidelines. Informed consent form and participants information sheet. Dated and signed by the research participant.

#### 4.7.6. Limitations of the study design

The main limitation of the study design is in relation to the recruitment of research participants, specifically due to the Covid-19 pandemic. Over this period, most of organisations were in survival mode, consumed by their day-to-day activities and addressing the challenges brought by the pandemic. As a result, many organisations had little to no time to engage in a doctoral study, if they replied at all to my solicitations. If I considered conducting this study across all sectors, this global context made it impossible for me to recruit public and third sector organisations, which were highly strained and focused on helping the general public in those difficult times.

The other limitation is that of Constructivist Grounded Theory, applied in the context of a doctoral research. Indeed, CGT recommends the equal engagement of multiple researchers throughout the process, especially during the coding process, which was impossible in this context (Lorello et al., 2020).

## 4.8. Summary

In this chapter, I have presented the origins of Grounded Theory (Glaser & Strauss, 1967), its subsequent developments (Glaser, 1978; Strauss, 1987; Strauss & Corbin, 1990) and its most recent reconstruction, Constructivist Grounded Theory (Charmaz, 2000, 2006), which forms the methodological grounds of this study. CGT redefines the concept of reality, which is plural and results from “*social constructions of the mind*” (Guba & Lincoln, 1989, p. 43). Therefore, reality is an individual interpretation, different and unique from one person to another (Charmaz, 2017b, 2017a; Mills et al., 2006a).

As practitioner-researchers with prior knowledge and experience in the area under investigation, the research team and I are both ‘insiders’ and ‘outsiders’ in the area of inquiry (Greenwood & Levin, 2007). Although this position can pose challenges such as bias, the use of methods like memo-writing, reflective workshops and triangulation, applied with criticality, helped increase our sensitivity to it (Barbour, 2001).

Using a theoretical and a convenience sampling approach (Corbin & Strauss, 2014; Glaser, 1978; Neuman, 2014), research participants were recruited from organisations (1) practising Design Innovation or Design Thinking, (2) working with Design Innovation consultancies (whether they are an external consultancy or their internal design team), (3) attending (or have attended) Rapid Design Interventions delivered by those design innovation consultancies.

Further, I presented the individuals who have contributed to this study;

- ***By design: research participants*** - they have been carefully selected and recruited to take part in the study. They took part in planned data collection activities; semi-structured interviews, informal conversational interviews, and reflective workshops.
- ***By chance: data set contributors*** - they are experts by training or by experience in the area under inquiry and have been encountered by chance, which resulted in opportunistic data collection activities; meetings as well as webinars & lectures.

Finally, I exposed the processes used in this study to capture, prepare data and initiate data analysis, which led to the construction of meaning from the data.



# 05

## *Constructing Meaning & Theory from the Data*





# 5. Constructing meaning & theory from the data

## 5.1. Introduction

This chapter reveals the procedure I have been following to construct meaning from the data according to a Constructivist Grounded Theory approach. The data I collected as researcher, as research-practitioner, and as participant has been treated equally as a single body of data and been analysed using the same approach. Transcripts, notes and memos were coded in QSR nVivo following initial, focused and theoretical coding approaches, before results were unpacked with the research team. A theoretical sampling approach (4.5, p. 92) supported identifying where and what data needed to be collected next (Boychuk Duchscher & Morgan, 2004; Glaser, 1978, p. 36).

Using Constructivist Grounded Theory (CGT), this study draws on data gathered from participants of RDI, Design Facilitators and Design Innovation practitioners, as well as leaders of organisations using RDI in the United Kingdom, the United States, Armenia, and Australia. Through the collection and analysis of data, three themes have been identified:

- The RDI outcomes
- The factors influencing RDI outcomes
- The factors influencing RDI outcome sustainment.

## 5.2. Memo-writing

Before detailing the data analysis process, it is crucial to highlight the importance for a qualitative researcher to get involved simultaneously with data collection and data analysis (Charmaz, 2006; Creswell, 2007; Maxwell, 2013; Braun & Clarke, 2013; Miles, Huberman, & Saldaña, 2014; Silverman, 2014; Kalpokaite & Radivojevic, 2019). To do so, researchers use memos to write up their ideas and focus on relationships between codes as they become evident to them throughout the research process (Boychuk Duchscher & Morgan, 2004). Silverman states that the overall aim of memo-writing is “recording analytic conversations with yourself” (Silverman, 2020, p.384), which reduces the risk of exaggeration from researchers and increases their sensitivity to bias (Chong & Yeo, 2015).

Whether memos are being used as a sense-making tool to better grasp the data (Glaser & Strauss, 1967; Given, 2008), used as a research diary (Friese, 2014) or used as a purely analytical tool (Charmaz, 2006; Saldaña, 2013), many qualitative researchers recognise their importance and advocate their use (Boychuk Duchscher & Morgan, 2004; Glaser, 2005; Braun & Clarke, 2013) as they allow the researcher to “captur[e] the frontier of the analyst’s thinking” (Glaser, 1978, p.83). However, others do not give this stage immense importance (Corbin & Strauss, 1998).

In the case of constructivist grounded theorists, memos are used to keep track of how theory is being constructed from the data (Boychuk Duchscher & Morgan, 2004; Charmaz, 2006), especially to write up the researcher’s ideation process, the emergence of relationships between codes as they become obvious to the researcher (Glaser, 1978; Glaser & Holton, 2004; Charmaz, 2006; Kalpokaite & Radivojevic, 2019) and how meaning is constructed from the data to reach a conceptual level (Boychuk Duchscher & Morgan, 2004).

As a researcher, I embraced and implemented memo-writing from the beginning of the study, allocating myself at least a half-hour time slot after each data collection activity, when possible, to record my memos digitally. In addition and when coding data, I captured my thoughts and sense-making process while constructing meaning from the data (Table 5.1, p. 115).

Memo	Quote
Z14-m	<p><i>The potential of RDLI for innovation within businesses, but also as a transformative tool for entrepreneurship and funding by:</i></p> <ul style="list-style-type: none"> <li>• <i>De-risking the process</i></li> <li>• <i>Supporting the development of individuals and not businesses.</i></li> </ul> <p><i>Because more confident individuals will become more confident entrepreneurs, and they will apply the skills and tools they have learnt to their ventures. This makes me think about what [business mentor name] has been telling me for years in his role supporting young start-up founders; he never bets on the business. Instead, he invests in the individual. Because a resilient and strong-willed individual might have a bad idea and might fail once, twice, or thrice with a business, but in the end, they will find a way to make it work.</i></p> <p>(see Fig: 5.4. JCW notebook, memo Z14-m, January 15th, 2021 on page 179 for original notebook memo)</p>
Z25-m	<p><i>What has been said about physical manifestations being similar to committing to a training course to know more about [Design Innovation]. Is there something here in terms of impact, called commitment to design-led practice? When asking if it is also another extrinsic stimulus, what if that specific type of impact generated a stimuli? Are there any other impacts like that that might become an extrinsic stimuli, so that it slowly becomes more and more ingrained in the mindset &amp; practice of the former participant? Are there other extrinsic prompts?</i></p>
Z53-m	<p><i>But actually, what if the practices that are embedded within Design Facilitators allow a certain use of those design tools and methods? Because if we take the definition of design tools by Aguirre et al., I'm thinking that it can include stuff like big pieces of paper, or post-it notes or even an innovation room. But actually, these are tools can only be maximised and used to their full potential if they're used by skilful humans. So I think this is really important, really key to highlight in the development of my theory and to capture through the process.</i></p> <p>(see Figure 5.7: Memo Z53-m captured on post-it notes, April 12th, 2022 on page 116 for original post-it notes memo)</p>

**Table 5.1:** *Memos examples*

potential of rapid AI interest  
 for innovation w/ businesses, but  
 also as a transformative tool  
 for entrepreneurship & funding  
 by designing the process:  
 → development of individuals &  
 not businesses.  
 because more confident individuals  
 will become more confident  
 entrepreneurs.

Figure 5.6: Memo Z14-m captured on my notebook, January 15th, 2021

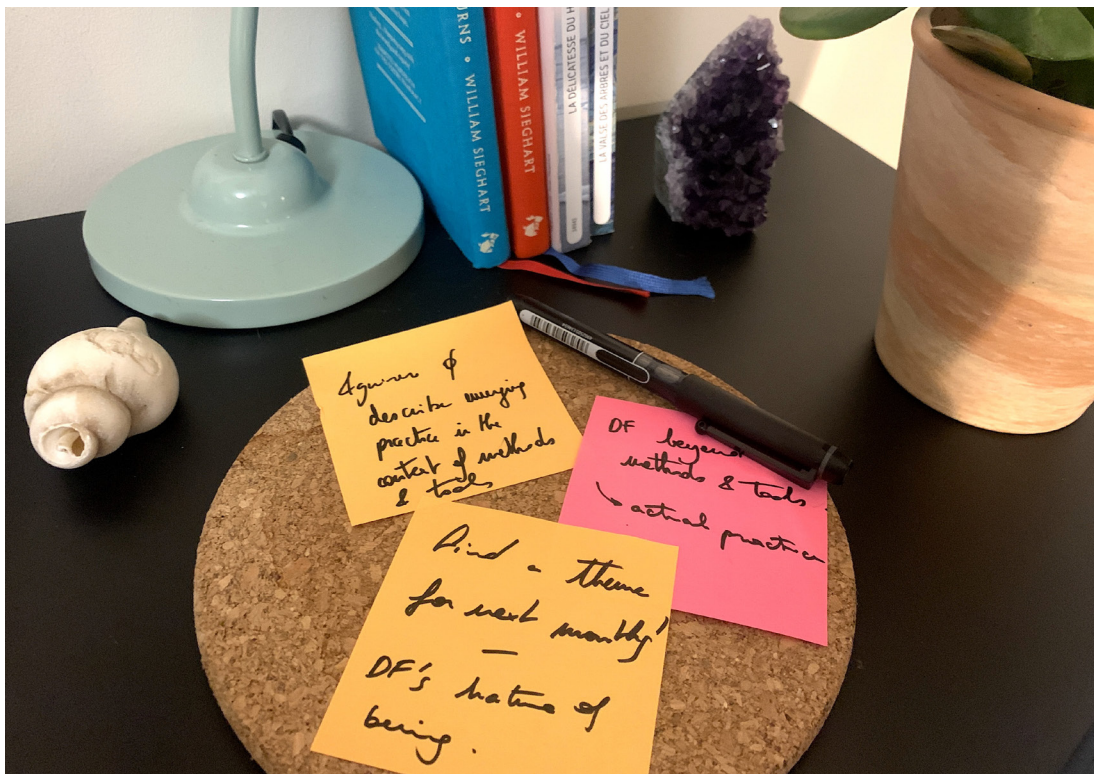


Figure 5.7: Memo Z53-m captured on post-it notes, April 12th, 2022

However, it is essential to mention that I found memo-writing quite impractical and burdensome to implement when in a good analytical flow, as it would distract me, interrupt the on-going process and be time-consuming. In addition, I found capturing my thought-process challenging, as I have a very hyperactive brain (7.5.2, p. 262) which never stops thinking, making it complicated to always pause and capture thoughts that occurred at any time of the day, or night.

Nonetheless, I put in place some techniques that allowed me to record as much as possible when my thoughts occurred, using my notebook when I had no digital access (Figure 5.1, p.112), voice notes when walking, or post-it notes on my bedside table when sleeping, for example (Figure 5.7, p. 116), that would be then expanded upon when digitalised.

### 5.3. Initial coding

*Initial coding* (Thornberg & Charmaz, 2014; Flick, 2018), the Constructivist equivalent of *open coding* (Glaser & Strauss, 1967; Glaser, 1978; Strauss & Corbin, 1990; Bryant & Charmaz, 2007), is the coding stage that begins the analytical process, through which researchers read the text in a reflective manner to identify codes (Gibbs, 2018; Creswell, 2013). Data collected is analysed line by line, and actions, events and interactions are named and broken down, which leads to identifying concepts and categories (Boychuk Duchscher & Morgan, 2004; Glaser, 1978; Flick, 2018a). Specifically, text might be “coded line by line, sentence by sentence, [...] paragraph by paragraph” (Flick, 2018, p.59) or “incident-by-incident” (Charmaz, 2014, p.133). Doing so allows researchers to saturate codes, and reduces the risk of missing important ones (Bryant & Charmaz, 2007; Glaser & Holton, 2004). However, it is essential to note that the process at this stage is interpretive and can be conducted in various levels of detail depending on the research question, the material analysed and personal analytical style of researcher (Charmaz, 2014).

In pursuit of rigour, there are a set questions for open coding prescribed by Glaser (1978; 1998) & Strauss (1987) and summarised by Boychuk Duchscher & Morgan (2004), Bryant & Charmaz (2007), Glaser & Holton (2004), that researchers should keep in mind at all times, from the very beginning of their research:

- “What is the data a study of?”
- “What category does this line or incident (group of lines) indicate?”
- “What is actually happening in the data?”
- “What are the main concerns faced by the participants?”
- “What accounts for the continual resolving of this concern?”

Taking Glaser’s set of questions into account, Thornberg & Charmaz (2014, p.156), provide constructivist researchers with an extended set of guiding questions, which encourage them to focus on patterns within the coded categories:

- “What process(es) is/are at issue here? How can I define it?”
- “How does this process develop?”
- “How do research participant(s) act and profess to think and feel while involved in this process?”

Overall, initial coding forces researchers to think about the material in a way that is different from research participants and their interpretations (Charmaz, 2014), allowing researchers to break down, aggregate, make sense of and categorise data (Creswell, 2013). Through the process, researchers verify the relevance of the emerging theory, which ultimately enables them to identify future directions for theoretical sampling (Bryant & Charmaz, 2007; Glaser & Holton, 2004) as it “opens up the inquiry” (Strauss,

1987). By interrogating the data and following their leads, researchers' explicit processes capture assumptions and give new insights to participants (Charmaz, 2014, p.133). The result of initial coding is "a rich, dense theory with the feeling that nothing has been left out" (Glaser & Holton, 2004, paragraph 50).

Initially, this process felt a bit strange and forced. As it was my first time implementing coding in a research project, I was unsure whether I would get anywhere with it. However, as I stuck with the process and followed it, it slowly started to make more and more sense. This state of mind is not unusual as Bryant & Charmaz (2007), as well as Glaser & Holton (2004) noted; overtime, the process of coding combined with that of memo-writing helped build resilience and confidence in the findings, as patterns began to emerge, and codes and categories were identified (Table 5.2, p. 120).

The initial focus of my study was to build an understanding of indicators and measures of Rapid Design Interventions within organisations, with a particular focus on their soft benefits. Nevertheless, data analysed during the initial coding phase evidenced that organisations generally only monitor outputs of RDI and focus on quantifiable indicators - such as number of ideas or new projects, for example. In addition, data collected indicated that the majority of organisations measuring impact, focused on the impact of their innovation practice as a whole, rather than episodic events such as Rapid Design Interventions. In the majority of cases, the organisations are not measuring the value created by RDI and when they do, outputs are usually recorded and outcomes are often not considered.

Furthermore, as I progressed through initial coding, I deepened my understanding and refined the definition of the phenomenon under investigation, Rapid Design Interventions. Although I used the term Rapid Design-Led Interventions in my earlier work to discuss the topic of this study, it was clear at that point that I had been in fact referring to both product-oriented and strategy-oriented interventions and therefore, been investigating Rapid Design Interventions as a whole. The progression through the study and analysis of data developed a deeper understanding of the phenomenon under investigation, which prompted a refined precision in the vocabulary and supported the distinction between Rapid Design-Driven Interventions, which are product-oriented, and Rapid Design-Led Interventions, which are strategy-oriented. The inclusion of the former reflects clarification, rather than the expansion of the scope of the study.



Activity	Quote	Initial coding
D1-p	<i>Exhausted! I was absolutely shattered. So it's really, really intense - they asked lots and lots of questions, and they really made you search your mind, [asking] 'Why do we do that? Why, why?' So I do remember every time there was a tea break, we were all desperate for a cup of tea and a biscuit!</i>	Intense  Participants feelings towards the approach  Questioning
S2-o	<i>The resources from the sessions as a reminder of the approach.</i>	Design tools  Tangible manifestations of DI Practice
I8-p	<i>I think that the companies that work with us, that are open and throw themselves into it, get the most out of it. And as a consequence, we have had a lot of feedback about how the festival has changed how they work and we've got a lot of different examples. So for example, believe [organisation's name] did an innovation sprint with us. [...] And now they run innovation event themselves.</i>	Involved hierarchy  Participant engagement  Design capability  Recirective practice  Catalysing innovation externally

**Table 5.2:** *Examples of codes generated during initial coding from transcript excerpts*

These findings, coupled with a constructivist approach, compelled me to reframe the initial title of this doctoral study: *'Towards an understanding of indicators & measures of design-led interventions within organisations'* as well as reframing the three initial research questions that had been formulated thus far:

- Within organisations, what are the indicators of impact where design is applied episodically?
- What are the factors influencing and/or supporting the sustainment of that impact?
- How are these indicators recognised and measured by organisations?

Further, they urged me to reconsider the language that was being used to frame the study, particularly the fine nuances between outputs, outcomes and indicators, which Slay (n.d.) defines as:

- **Outputs** - "A quantitative summary of an activity".
- **Outcomes** - "The change that occurs [over time] as a result of an activity" which "might lead to chains of linked outcomes".
- **Indicators** - The "ways of knowing that change has happened" and that outcomes are being, or have been met.

These insights led to the final title of this study: *'Towards an understanding of the outcomes of Rapid Design Interventions on participants and organisations'* which addresses the following research question; How do organisations and individuals recognise and sustain the outcomes of Rapid Design Interventions, and what are the influencers of these outcomes?

## 5.4. Focused coding

The second phase of the coding process is *focused coding* (Charmaz, 2006), also known as *selective coding* (Glaser, 1978). It is more selective and conceptual than initial coding and captures larger segments of data (Charmaz et al., 2018). In focused coding, researchers identify, capture and select the initial codes that are the most frequent, have the most significance or make the most analytical sense, and compare them (Charmaz, 2006; Charmaz et al., 2018). Some of these codes are then scaled up to become categories, while others are grouped under these categories as their “variants, properties or dimensions” (Urquhart, 2013, p. 49). Focused coding brings back together “fractured data” (Glaser, 1978) and communicates the theoretical expansion of the coded concepts to categories, before leading to theory (Boychuk Duchscher & Morgan, 2004; Khambete & Athavankar, 2010). Specifically, focused coding accelerates the analytical process while anchoring the coding process in the data (Charmaz & Thornberg, 2021).

The focused coding process was a lot more straightforward and quick to conduct in comparison with initial coding as highlighted by Charmaz (2006). There, I reviewed the initial codes, capturing their meaning, assessing and conceptualising them. For example, the initial codes ‘intense, participants feelings towards the approach’ and ‘design tools’ presented previously in Table 5.2 (p. 120), were grouped under the category ‘the designerly approach of RDI’, as shown in Table 5.3 (p. 123).

As a result of focused coding, three themes comprising of nine categories and twenty-six codes in total have been captured. The themes are:

- The factors influencing RDI outcomes.
- The RDI outcomes.
- The factors influencing RDI outcomes sustainment.

The categories and codes, which were arranged and related to each other through theoretical coding, are presented page 126.

Activity	Quote	Initial coding	Focused coding
D1-p	<i>Exhausted! I was absolutely shattered. So it's really, really intense - they asked lots and lots of questions, and they really made you search your mind, [asking] 'Why do we do that? Why, why?' So I do remember every time there was a tea break, we were all desperate for a cup of tea and a biscuit!</i>	Intense Participants feelings towards the approach Questioning	Designerly approach of RDI Design Facilitators People
S2-o	<i>The resources from the sessions as a reminder of the approach.</i>	Design tools Tangible manifestations of DI Practice	Designerly approach of RDI Factors influencing RDI outcomes sustainment
I8-p	<i>I think that the companies that work with us, that are open and throw themselves into it, get the most out of it. And as a consequence, we have had a lot of feedback about how the festival has changed how they work and we've got a lot of different examples. So for example, believe [organisation's name] did an innovation sprint with us. [...] And now they run innovation event themselves.</i>	Involved hierarchy Participant engagement Design capability Reciprocal practice Catalysing innovation externally	Factors influencing RDI Outcomes People Organisation RDI Outcomes Designerly ways of knowing Factors influencing RDI

**Table 5.3:** *Examples of codes generated during focused coding from transcript excerpts*

## 5.5. Theoretical coding

*Theoretical coding* is the last coding stage in Constructivist Grounded Theory, but it is also the most “sophisticated” (Charmaz, 2006). It was introduced by Glaser (1978) and captures the dynamics, logics and relations between codes. This stage is essential, as any theory is built upon relationships between constructs (Urquhart, 2013). If initial and focused codes come from the data, theoretical codes are “ideas, terms, logics, abstract models, and perspectives that organise and integrate the analysis into a coherent theory” and parts of it usually refer to logics found in existing theories (Charmaz et al., 2018, p. 427). Theoretical codes can be chosen or invented (Glaser, 1978) and can either extend, build upon or refine the codes of the analysis, or be imported from the outside. However, in either case, researchers must ensure at all times that theoretical codes are anchored in the data by making constant comparison between codes, data and memos (Charmaz et al., 2018).

The overall coding process ended when theoretical saturation was reached, which was “the point in coding when [...] no new codes occur[ed] in the data” (Urquhart, 2013, p. 194).

### ***The Designerly approach of RDI***

I’m just thinking about the conversation I had with [Design Facilitator & Design Innovation practitioner’s name] yesterday. And about how - yes, design tools and methods are useful, but design practice might be the most important. And that kind of relates back to my theory and the visualization that I’ve been doing. That includes strategy, design tools, and people. So yes, design tools are part of it. But actually, what if the practices that are embedded within ‘design facilitators’ allow a certain use of those design tools and ‘approach’?

Because if we take the definition of design tools by Aguirre et al. (2017), I’m thinking that it can include stuff like big pieces of paper, or post-it notes or even an innovation room. But actually yes, these are tools, but they can only be maximised and used to their full potential if they’re used by skilful humans. So I think this is really important, really key to highlight in the development of my theory and to capture through the process.

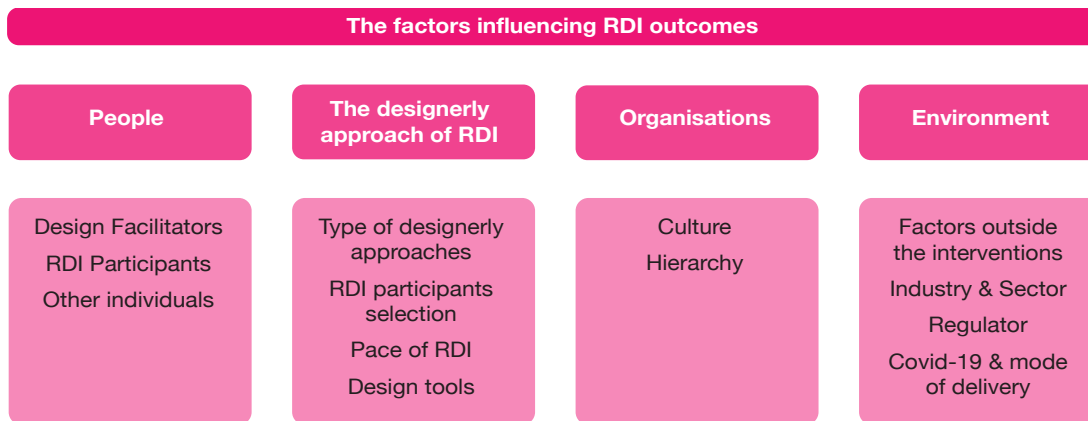
Post-it notes are eventually just post-it notes. A lot of people think that when they see your design studio, for example, that they can summarise practice by just looking at those post-it notes and scribbles on walls and be like, yeah, well, they’re just good at mapping out colourful, sticky notes, which is not the case.

**Figure 5.8:** *Excerpt from memo Z48-m in the later stages of the analytical process. April 12th, 2022.*

Throughout the process, I made sure to always refer back to the data, critically and rigorously capturing the theoretical expansion of categories, conceptualisation and the relationships between codes through memos. Building upon coding examples given in initial coding (Table 5.2, p. 120) and focused coding (Table 5.3, p. 123), I came to conceptualise the category the designerly approach of RDI through theoretical coding (Figure 5.8, p. 124), identifying and relating it to other existing codes, such as 'design tools', 'type of designerly approaches', but also relating it back to the category 'people' and the code 'Design Facilitators'.

The theoretical coding process allowed me to arrange the three themes, nine categories and twenty-six codes, as presented in Table 5.4, Table 5.5 and Table 5.6 (p. 126).

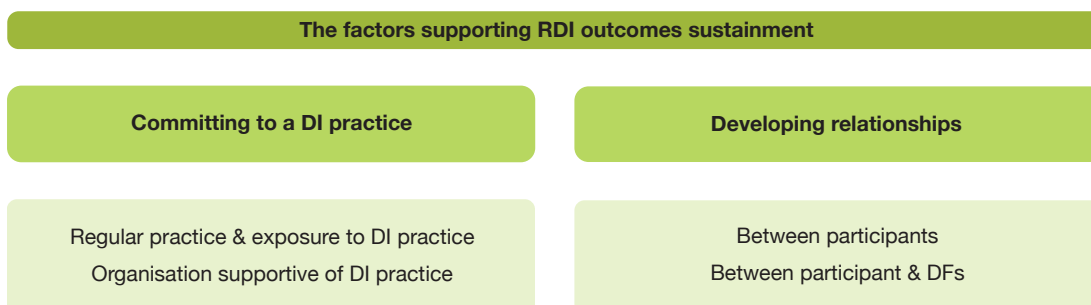
The content of these themes, categories and codes is explained and detailed in 5.7. Results of the analytical process on page 130, and the final theoretical model, built as a result of this coding process, is presented in 5.8. Rapid Design Intervention Theory on page 224.



**Table 5.4:** Overview of the factors influencing RDI outcomes



**Table 5.5:** Overview of the RDI outcomes



**Table 5.6:** Overview of the factors supporting RDI outcomes sustainment

## 5.6. Triangulation and Slices of Data

Triangulation is an approach that allows researchers “to take diverse perspectives on the issue and field under study and to triangulate them in a systematic way” (Flick, 2018a, p.125) by using different methods, theories, or several researchers (Flick, *ibid.*). Amongst the different triangulation methods, Denzin (1970) identifies four different types;

- **Data triangulation** - collecting data using different methods.
- **Investigator triangulation** - involving different researchers and their perspectives in data collection and analysis process.
- **Theoretical investigation** - using and combining different theoretical approaches.
- **Methodological triangulation** - the most prominent mode of triangulation, which is either combining different methodologies within one method (within-method triangulation) or within various independent methods (between methods triangulation).

The value of triangulation resides in the extension of data and possible interpretations, which make the study and its results more reliable and credible (Flick, 2018a), and allows robustness and confidence in the data. Although triangulation is not very common in Grounded Theory (Charmaz, 2014; Bryant, 2017), its principles, and specifically those of data triangulation are close to the early development of Grounded Theory by Glaser & Strauss (1967, p.65) which highlighted the need for researchers to work with ‘*slices of data*’ from various sources. Still, Denzin (1970) argues that ‘data triangulation’ is used implicitly in Grounded Theory.

For this study, I used data triangulation. As discussed above, this was conducted by CGT design, using both planned and opportunistic approaches to data collection, and using various methods, including interviews (semi-structured and conversational), reflective workshops, meeting notes, webinars and lectures as well as RDI outputs, as presented in 4.6. Collecting data in Constructivist Grounded Theory on page 100.

Despite this, I did find investigator triangulation particularly interesting as the literature around it considers the different perspectives of the researchers in the analytical process, but not those of participants in the data collection process, which I believe is essential in my study. Indeed, to build a comprehensive picture and understanding of Rapid Design Interventions outcomes, it was crucial to engage with research participants and data set contributors who had a diverse range of expertise and experience with regards to RDI (RDLI & RDDI) and more generally Design Innovation, allowing different perspectives to be captured.



As a result, I carried out a *participant triangulation*, involving research participants and data set contributors who were grouped as following:

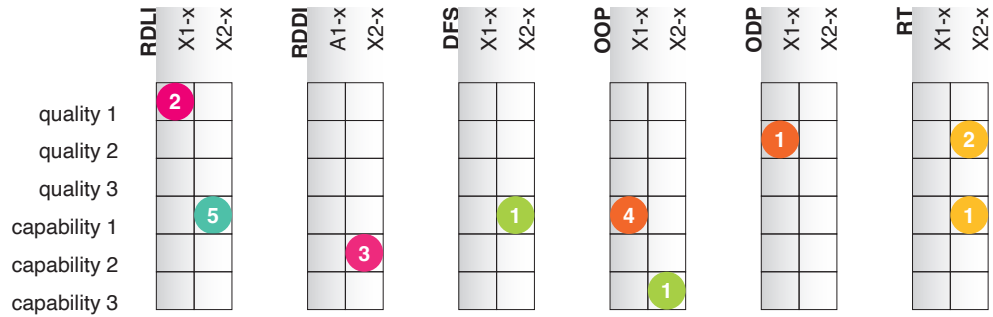
- RDLI Participants - individuals who have taken part in Rapid Design-Led Interventions
- RDDI Participants - individuals who have taken part in Rapid Design-Driven Interventions
- Design Facilitators - individuals who have a design background and facilitate Rapid Design Interventions
- Other role in Organisations practicing RDI - individuals who have participated in some capacity, whether as an organisor, as a client or as a sponsor in RDI, or who have taken part in Design Thinking or Design Innovation activities
- Other Design Thinkers and Design Innovation Practitioners - individuals who are Design Thinkers and/or Design Innovation practitioners, and are Design Facilitators
- Research Team - the supervision team together with me
- Practitioner-researcher - just me.

In addition to a data triangulation and a participant triangulation, the number of data collection and analysis activities in which codes are being mentioned are captured to determine their level of confidence. The process is explained in Table 5.7.

Level of confidence	Triangulation
<b>Low</b>	Mentioned in 1 type of activities & by less than 3 groups of research participants and data set contributors OR mentioned in less than 10 activities
<b>Moderate</b>	Mentioned in at least 2 different types of activities & by at least 3 groups of research participants and data set contributors OR mentioned in 10 to 14 activities
<b>Substantial</b>	Mentioned in at least 3 types of activities & by at least 4 groups of research participants and data set contributors OR mentioned in at least 15 activities
<b>Outstanding</b>	Mentioned in at least 3 types of activities & by at least 5 groups of research participants and data set contributors AND mentioned in at least 20 activities

**Table 5.7:** *Level of confidence in the data in relation to the triangulation process.*

The visual template below is used to triangulate each code presented in 5.7. Results of the analytical process on page 130.



RESEARCH PARTICIPANTS & DATA SET CONTRIBUTORS

- RDLI** RDLI participants
- RDDI** RDDI participants
- DFs** Design Facilitators
- OOP** Other organisation practicing RDI, DT & DI
- ODP** Other Design Thinkers & Design Innovation Practitioners
- RT** Research team
- PR** Practitioner-researcher

ACTIVITIES & CODE OCCURENCES

- 2 code occurrence in activity
- X1-x activity code
- interviews & workshops (planned)
- meetings (opportunistic)
- memos
- webinars (opportunistic)
- outputs from RDI (opportunistic)

**Figure 5.9:** *Triangulation process template & legend*

## 5.7. Results of the analytical process

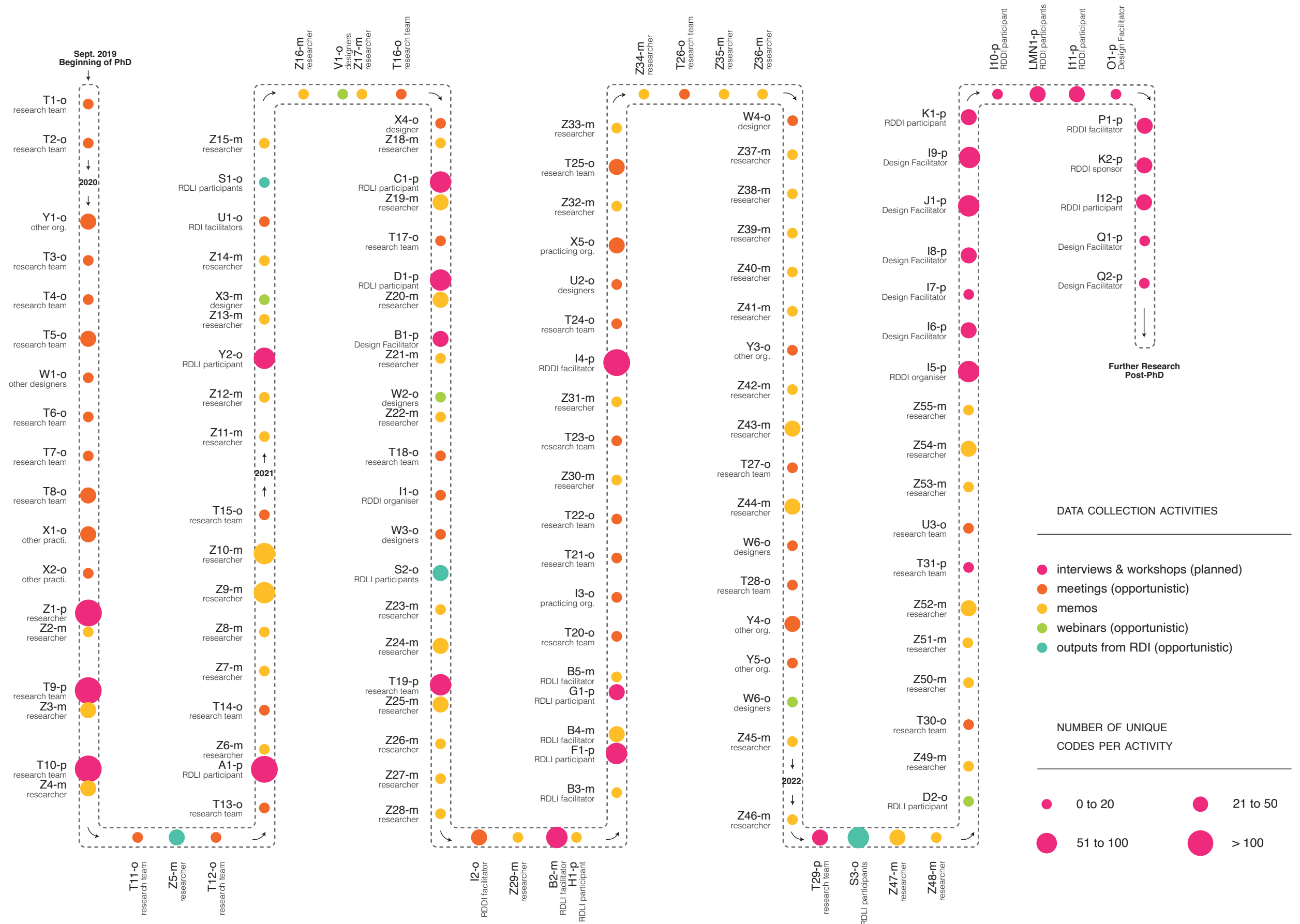
As presented in the previous sections of this chapter and in “4. A constructivist approach to design research”, a wide range of data collection and memo-writing activities contributed towards the results presented in this section (Appendix A, p. 289). These activities and their weight in identifying unique codes are summarised chronologically in Figure 5.10 (p. 131). This section, is a combination of what the data told me and the understanding I have built from it.

However, it is crucial to highlight that in some cases, the coding process resulted in more layers of codes than it was possible to capture with the three-layered approach that themes, categories and codes offer. Where possible, sub-codes were also identified and captured. Moving towards the analytical process, the research team identified that these sub-codes, could be classified in two groups;

- **Qualities** - essential or distinctive attributes, characteristics or features of someone, or something (Cambridge Dictionary, 2022; Collins Dictionary, 2022b; Merriam-Webster, 2022b)
- **Capabilities** - features, faculties or characteristics that may be developed (Collins Dictionary, 2022a; Merriam-Webster, 2022a)

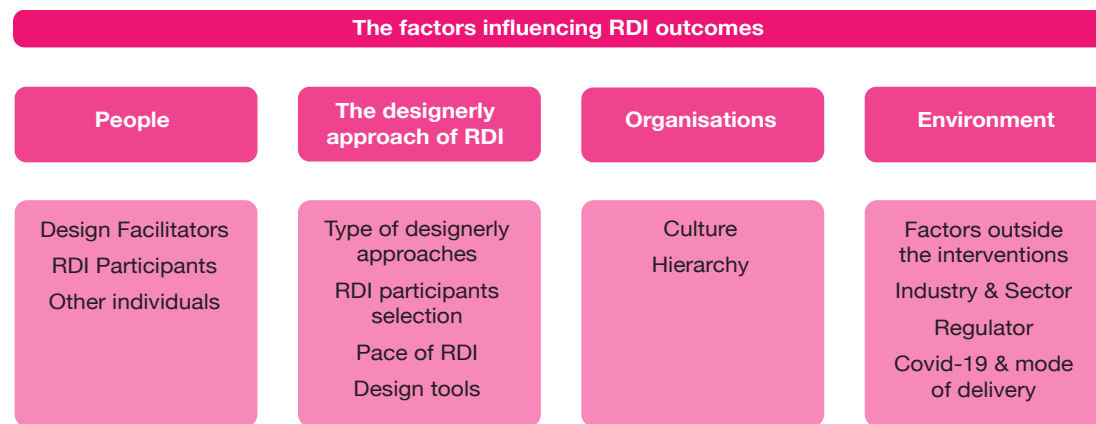
If themes, categories and codes in this section are presented in order of frequency and importance in the data set, it is essential to note that the content of the codes and sub-codes is presented in a logical order.

Figure 5.10: Data collection and memo-writing activities in relation to the quantity of unique codes produced by each of them.



### 5.7.1. The factors influencing Rapid Design Intervention outcomes

The most prevalent theme highlighted through the data coding process is ‘the factors influencing Rapid Design Intervention outcomes’. This theme, mentioned in 67 data collection activities, brings a total of 806 codes together. The main factors influencing RDI outcomes gathered through the study are grouped in categories of codes, and the most prevalent in the data are ‘people’, ‘the designerly approach of RDI’, ‘organisations’ and ‘environment’. They are further detailed in the next sections presented in the table below Table 5.8, providing an extensive description of each of their key codes.



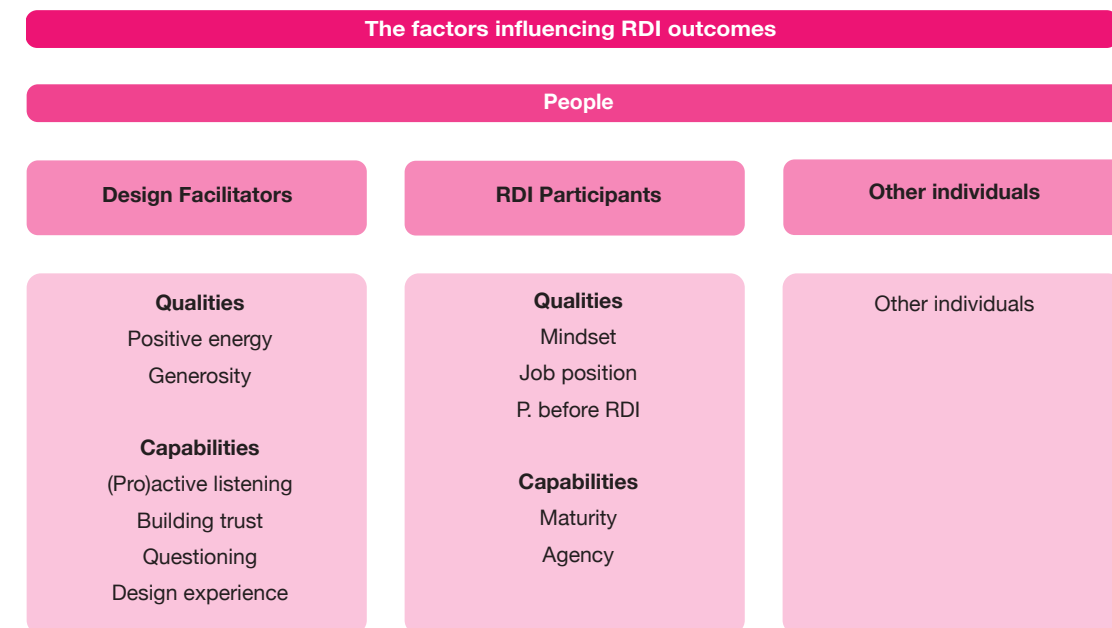
**Table 5.8:** Overview of the categories and codes included in the factors influencing RDI outcomes

#### 5.7.1.1. People

Mentioned in 48 activities with a total number of 333 references, ‘people’ is the most prevalent factor influencing Rapid Design Interventions outcomes. As RDIs are about bringing people together to address a certain situation, it was not surprising to see how prominent Design Facilitators and participants were in the delivery of outcomes.

However, it was surprising to see how other individuals present in the room - people organising the RDI, and people recommending the RDI - might too influence these outcomes. Although this code is not as ubiquitous as the two others, it is thought-provoking and deserves to be mentioned. The table below gives an overview of the structure of people.

It is crucial to highlight that people was rich in terms of data, and many sub-codes were also identified, as presented in Table 5.9.



**Table 5.9:** Overview of the codes and sub-codes in the People category.

### **Critical Review**

'*Design Facilitators*' brings to light the importance of the interactions between DFs and participants in the context of Rapid Design-Led Interventions, the training and expertise of DFs in RDI and the difference between in-house and external DFs. But most importantly, this code introduces the concept of *Design Listening* (Carrion-Weiss et al., 2021) within the context of Rapid Design-Led Interventions, which will be further explored in chapter 6. Discussion on page 231.

The analytical process allowed the identification of DFs' qualities such as their positive energy, or their generosity, as well as core capabilities like listening, questioning, building trust and design experience. The data showed that RDI participants recognised more DFs capabilities than their qualities.

Most of the data regarding Design Facilitators is actually related to Rapid Design-Led Interventions, which I believe is very interesting. Indeed, in my experience, the DFs-to-participant ratio is a lot higher in RDLI than in RDDI. For example in the case of GRTI, it was very common to see two to three DFs for one or two participants, when during the Design Sprints delivered as part of the Festival, we would see four to five DFs for twenty to thirty participants. Although numbers were not as high as in all RDDI I have been involved with, the number of participants per DFs tend to be lower than in RDLI. It is likely that the higher DFs-to-participant ratio in RDLI allows participants to have the full attention of DFs, which might be more difficult to achieve in RDDI due to the high number of people involved.

Finally, it takes time to become an Expert Facilitator (EF) and it appears that the level of experience of Design Facilitators impacts the outcomes of RDLI. In 2019, Lampitt Adey et al. discussed how there were positives in having Novice Facilitators (NFs) and Expert Facilitators (EFs) delivering RDI together, as they would act as creative catalysts. It would therefore be interesting to consider not only the level of expertise of the DFs, but also those of the participants in relation to design facilitation practice. What really happens if the participant is a DF too? What are the dynamics? These are questions this data set in relation to Design Facilitators raised.

## Triangulation

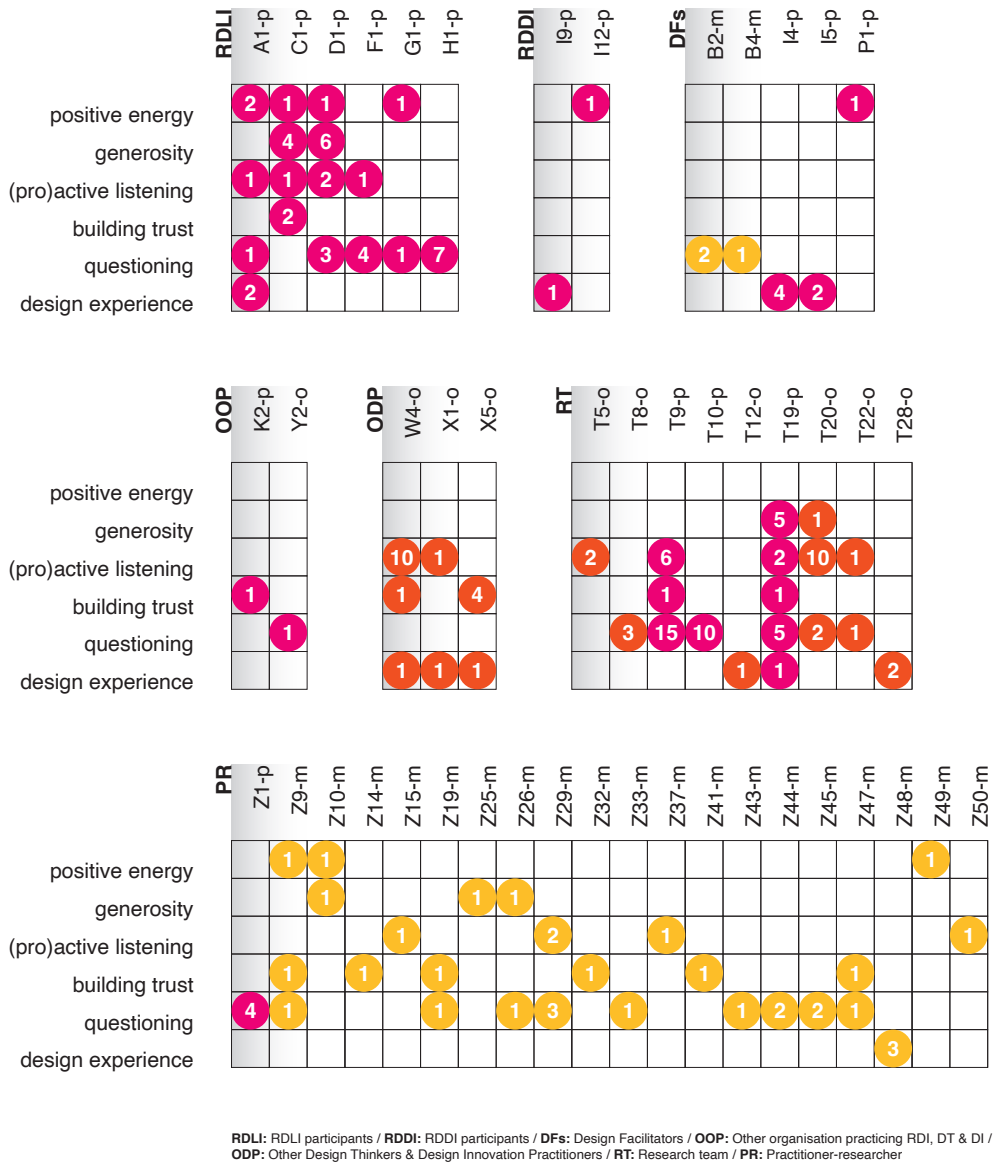


Figure 5.11: Design Facilitators triangulation overview

## Qualities

### Positive energy - moderate level of confidence

One of the first qualities of DFs identified by RDI participants is their positive energy (attitude) during the delivery of RDI. More specifically, some participants noted that all the facilitators they had worked with throughout the process were “nice” and “lovely” as well as “supportive and encouraging” (A1-p, C1-p, D1-p, G1-p).

*The sprint lead here has made everything such a laugh, even though we’re talking about something like the cost of living crisis, which is a bit intimidating. (Jack, I11-p)*

*Everybody was so nice. And a [nationality] guy was there, [facilitator's name] at various times, there were various people in the room. And it was so nice. And at no point did you feel challenged - you were challenged by the information but you weren't challenged by the people. Yeah, lovely people. (Claire, D1-p)*

#### **Generosity** - moderate level of confidence

Participants have expressed their surprise when they realised the generosity of facilitators, as the DFs willingly contributed multiple ideas and suggestions about the business or proposition to help the participant(s) see alternative possibilities or ideas (C1-p; D1-p). Debating the concept of generosity with the research team during a workshop (T19-p), MB discussed how Claire, for example, being a business person trained in numbers, feared that if she told other people her idea too soon, she would lose it.

*I remember just being shocked. I was like: 'I can't believe that all these people are helping me. They're [so] into it. They're not going, oh, this isn't really my sort of area.' They were just like, 'yeah, we'll just work with what we've got.' (Layla, C1-p)*

#### **Capabilities**

##### **(Pro) Active Listening** - substantial level of confidence

Mostly mentioned by DFs as opposed to RDI participants, DFs listen through the noise. Indeed, from all the information DFs receive from participants, they are capable of identifying possibilities and shutting out the background noise, while having an internal monologue where they zoom in and out of the situation and use their knowledge to build an awareness of said situation. Once they have reached an understanding, DFs play back to participants what they believe is important. Through the process, the conversation is often captured and visualised using large pieces of paper or sticky notes.

*Why is it that there will be occasions where two facilitators look at each other and say 'I know exactly what you're thinking at the moment'. (T20-o)*

An aspect that appears to be essential in (pro)active listening is that DFs listen to empathise and understand, not to judge. As a result, there was no right or wrong answer from the participants, which helped participants feel more comfortable.

*Because having people that were just so dedicated to listening to you, and then working on this business with you - when as a solo entrepreneur, it's [been] really, really difficult emotionally, mentally - and to have these people just be there [and] ready to help you... It was quite emotional, actually, I'm not gonna lie, I felt a bit overwhelmed. (Layla, C1-p)*



### **Building trust** - substantial level of confidence

The positive attitude of the Design Facilitators towards RDI participants, as well as their generosity and (pro)active way of listening enables trust to be built between both parts (A1-p & C1-p). Directly commenting on the importance of building trust with the participants as a facilitator, especially when working with smaller organisations, the research team noted that if the RDLI participants trusted the facilitators, they would trust the process, its outputs and outcomes, and would quickly enable change within their organisation once the intervention was over (T9-p).

*If you can win the trust of the smaller organisation, or key players in a small organisation, they don't have to ask permission of anybody other than themselves to make changes. (T9-p)*

### **Questioning** - outstanding level of confidence

A number of RDLI participants recognised that DFs asked “thorough” questions, “drilling down” to better understand the participants’ situation (D1-p; F1-p; G1-p; H1-p), while DFs recognised the importance of questioning as part of the process. More than asking a question, questioning builds upon (pro)active listening and encompasses the DFs’ way of presenting new ideas to participants, using what if questions.

*You guys have definitely helped, but I think it was the drilling down ... if that's a part of the design process, it was the drilling down of the platform that I was trying to build from. (Emelia, G1-p)*

*The takeaway definitely still again, getting a refresher on my own business, you know, but taking another fresh look at it, from just the questions that you guys asked. (Violet, F1-p)*

*[DF] cannot think of when they offered an idea to an organisation without using 'what if'. So as a facilitator, you are listening and you are hearing possibilities, shutting out the background noise and responding to that question with 'you told us X, what if Y'. (T19-p)*

Specifically, those questions DFs ask are a means to challenge, probe, and shape the participants’ ideas. When they challenge, DFs are using Active Listening to play back their understanding of the situation, offering an alternative version of the truth, from their perspective. When they probe, DFs are painting a picture of what the future might look like, exploring potential futures and venturing knowledge participants hold, but are unaware of. And when they shape, DFs are challenging the participants to build, hand-in-hand, new narratives for their organisation and roadmapping the potential journey to achieving their vision in a way that is conscious of the consequences.

*There's another bit of your brain that whilst you're listening, is translating what you're hearing into new possibilities, into alternative versions of their truth. (T9-p)*

*If it leads to new knowledge, then it's this idea of knowledge venturing, so speculating about future possibilities in order to learn something. (T9-p)*

*Our role, and typically the role of these interventions, is about trying to explore those new destinations. (T10-p)*

*And then the real thinking often is, 'well okay, what are the, what are the impacts and consequences of that for the organisation and how might we actually take advantage of that?' (T10-p)*

*I did have all these ideas, but it was just putting them into place and how to get there, which I thought you guys really helped me with it. (Grace, A1-p)*

It is crucial to highlight the importance that building trust plays here. Indeed, if DFs failed to establish trust and rapport with the participants, it then becomes delicate and almost impossible for the facilitators to question participants properly without risking a deterioration of the relationship.

*I can remember them being quite aggressive with [Becky] in the first or second session about some of the propositions she made, and I had to intervene to calm them down and explain that we weren't making any decisions for them, but we were only trying to bring a different perspective and lens to what she was doing. (Z43-m)*

#### **Design experience** - substantial level of confidence

Data showed that the level and depth of the DFs' design experience could influence the outcomes of RDI, although there is less data about it. Specifically, Design Innovation practitioners and DFs discussed the role of Expert Facilitators (EFs) in training Novice Facilitators (NFs), as well as the "terrifying" experience of delivering an RDI as NFs.

*We have also run a number of facilitator training [sessions] within the business, so [the team] also has grown. Nobody's as good as [DF's name], let me put it out there, but we do have a number of budding individuals who have the confidence and are growing their skills under [DF's name]'s tutelage to then be able to run sprint activities within their own business area. (Pauline, I4-p)*

*So the experience, at the first festival, actually, for any new sprint lead, is absolutely terrifying. Because you're really the front person for the sprint. [...] The success of the event, if you do your job right, is all on your shoulders. You're very, very stressed out and worried and concerned that it all works right. (Ethan, I5-p)*

*Though some participants noted no difference between Expert Facilitators (EFs) and Novice Facilitators (NFs) during the delivery of RDI, my experience (although anecdotal and rather specific) as a participant was different and highlighted the potential influence of design experience on the outcomes of RDI.*

*The first one, is that during these interventions facilitated in March 2022 by two NFs and one EF, the EF leading the session was in fact a lot more novice than I am.*

*The second circumstance, was due to unfortunate circumstances. One of the EF supposed to deliver the GRTI YBE 1-2-many got sick, meaning that the EF leading my group had to split their time between my and another business during the last session.*

*The third circumstance is that although the interventions' tools had been adapted and slightly modified from previous GRTI, I was very aware of the different stages as I helped designing previous iterations of the tools and I believe that I sometimes took over as facilitator.*

*At the end of the RDI, I unfortunately did not feel as challenged as I know I could have been, and the ideas and potential futures discussed for my enterprise with DFs were pretty close to what I had already worked on and envisioned.*

*Although these three separate and exceptional circumstances might have hindered the delivery of outcomes, it is possible that I had unconsciously already taken my business through the process, as I am a trained Design Facilitator and because this is part and parcel of my practice. (Z52-m)*

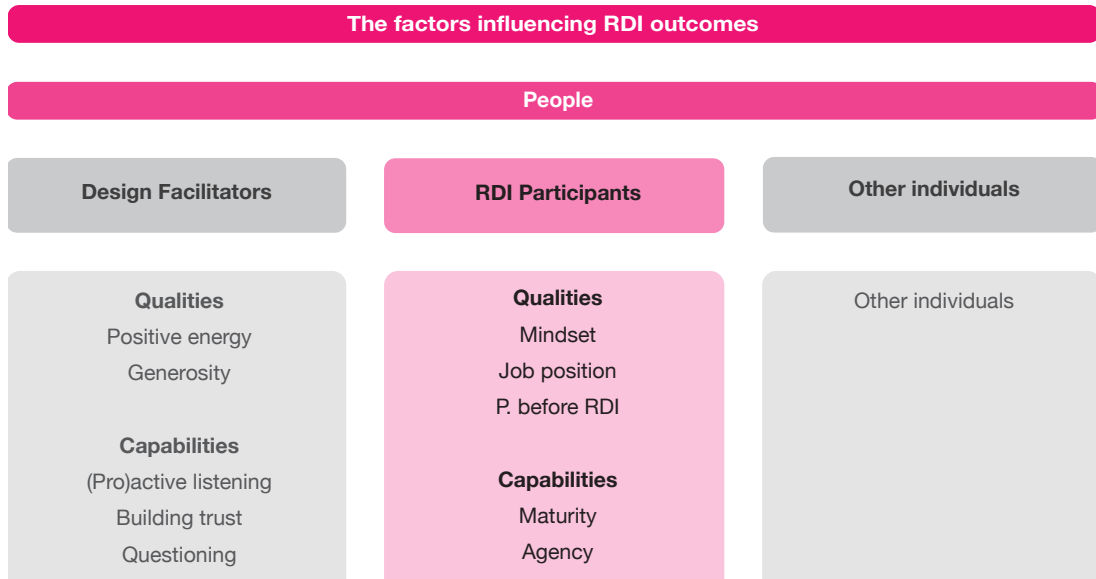
The debate raised by the potential influence of *design experience* is important, as capabilities are learnt, trained and developed overtime. Data collected from DFs, Design Thinkers and Design Innovation practitioners showed that the design capabilities and the designerly ways of knowing of DFs were of importance, specifically their ability to acknowledge to the RDI participants' their current and potential emotional responses, to share novel and potentially weak ideas with participants, and to skilfully implement design tools.

*People think design is like magic and I am a wizard. But actually, design is a science. (X1-o)*

*Learning how to expose, share, socialise ideas at various stages of readiness is quite a complicated practice. (T19-p)*

*Actually yes, these are tools, but they can only be maximised and used to their full potential if they're used by skilful humans. (Z48-m)*

### 5.7.1.1.2. RDI participants



**Table 5.10:** People category overview, RDI participants code and sub-codes overview

#### Critical Review

'RDI Participants' reveals the extent of influence RDI Participants can have on the quality of RDI engagement, which directly influences RDI outcomes. Specifically, it discusses the participants' mindset, their job position and their expectations prior to the intervention, as well as their maturity and agency to enact change. Overall, RDI Participants captures the designerly attitude of the participants and their comfort in embracing uncertainty.

Data about RDI Participants comes from a wide range of research participants and data set contributors; RDI participants themselves, but also RDI facilitators and the research team, who have observed and identified qualities and capabilities of RDI participants over years of practice delivering RDI. The different perspectives allow us to uncover aspects RDI that participants have little or no awareness of. The job position of participants appears to be of importance in RDI Participants, as RDLI and RDDI show very contrasted data. Indeed, the job position relies directly to the agency participants have to do something within their organisation and act upon an idea. It appears that RDLI led to quicker successful outcomes because it engaged with and through change-makers of organisations. However, RDDI can be as successful if participants evolve in an organisational context where the culture and the hierarchy are supportive of such practices.

Finally, RDI Participants advocates for DFs' engagement with participants and their organisations prior to the interventions, to ensure participants are willingly getting

involved (and not forced to by their organisation), and to gauge the participants' mindset. to allow DFs to better prepare. Ultimately, it would allow DFs to better prepare for the delivery of RDI, support the participants, build trust and enable their creativity in order to reach successful outcomes.

## Triangulation

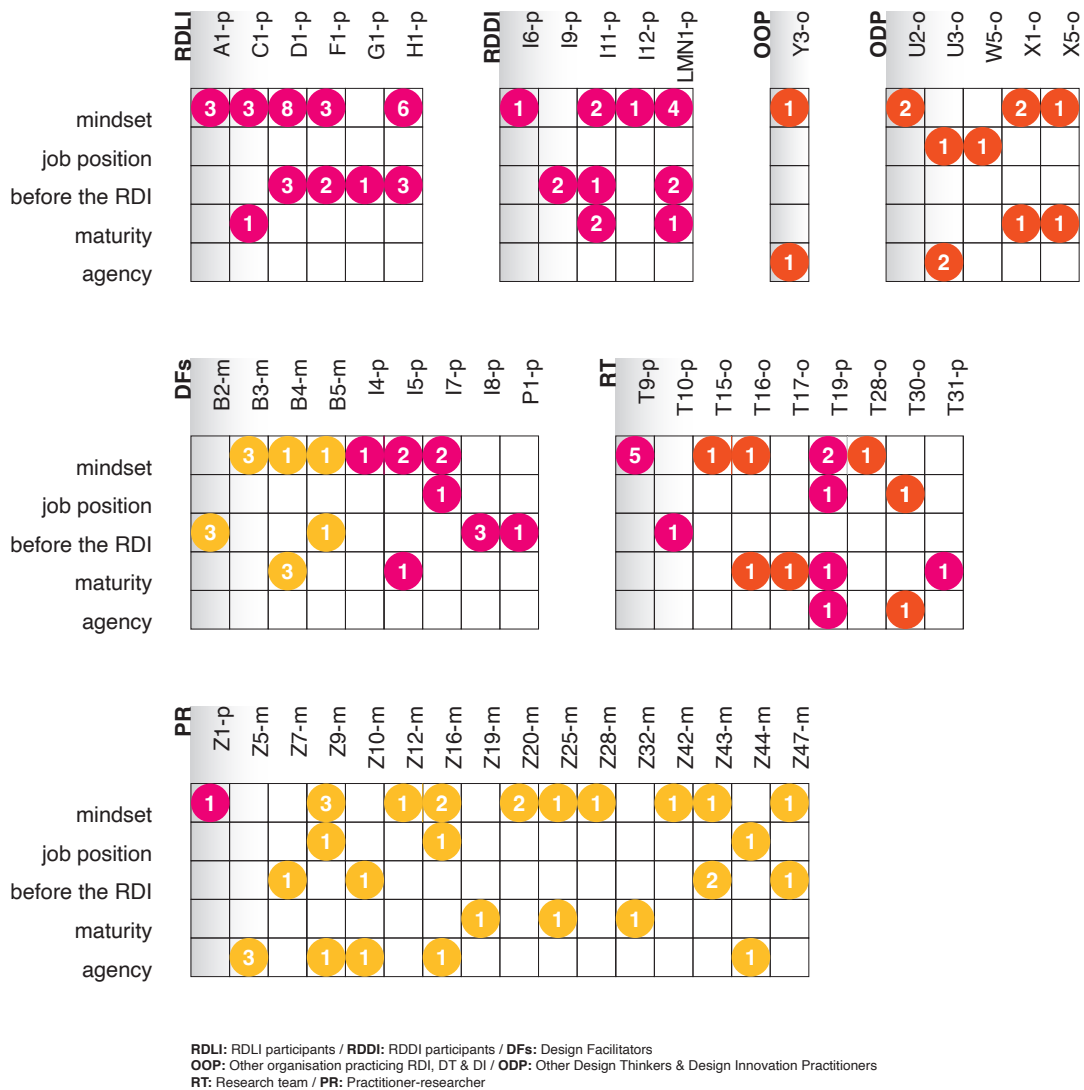


Figure 5.12: RDI Participants triangulation overview

## Qualities

### Mindset - outstanding level of confidence

One of the first qualities identified in RDI participants is their mindset. More specifically, it refers to three aspects of it that are influencing RDI outcomes; the designerly, constrained and passionate mindset of participants. Designerly captures the curiosity

and resilience of RDI participants, making them more likely to take the RDI approach on board and fully engage with the process, no matter how uncomfortable and ambiguous it might feel. This ambivalence is captured in the following quotes capture, in the context of Violet (F1-p);

*I would say that if there was a way to like give the questions ahead of time, like if I had a lot of the questions that you guys wanted to ask me ahead of time to work on and to like map out, then when we talked. [...] It definitely could have been easier for me and also for my memory. (Violet, F1-p)*

*The readiness of the participants to be held in an ambiguous position may have a real impact on how they can stand on questioning and challenging questions. For example, Violet wanted to have the questions in advance, which is exactly the opposite of what we wanted to do as facilitators, and would have gone against the purpose of the sessions. (Z42-m)*

*Violet is very curious, she wants to learn a lot from other people. She wants to reinvent herself. This is very exciting. She has this curiosity and interest that will probably help her take on opportunities. (B4-m)*

This curiosity and resilience will help RDI participants in responding to arising opportunities, by stepping out of their comfort zone, engaging and trying a new approach. Some participants indeed emphasised that, although their participation in RDI might have been risky, they were at a point in time where they were willing to explore new ways of thinking.

*It was risky. And then, of course, an outcome was gonna come out, and the outcome might have been the wrong decision for the business: I might have implemented it thinking everything was wonderful and then it goes horribly wrong. It's risk! [But] it was just... I don't know, we were at a good point in time where we were willing to explore the ways of thinking. (Claire, D1-p)*

In opposition, some participants are constrained in their thinking. This constraint can come from years of expertise and work in the same field, growing up, or being risk-averse. Often, these constraints are making it difficult for the participants to take a step back, be creative and critically assess what they do.

*[The participant] says that they had lots of ideas, but was constrained and immobilised by how they thought about their business. They couldn't get out of the story of what they do. (Y2-o)*

*She said it herself - she doesn't like to take risks. And I feel that we didn't manage as facilitators to break down this barrier. Is it due to our approach with her? The struggle to build trust and rapport or to get her engaged? Or to online facilitation as opposed to face-to-face facilitation? (Z43-m)*

Another aspect of the participants' mindset influencing the RDI outcomes, even if this is slightly less supported by data. Many RDI participants evidenced passion even if the

focus of this passion differed between RDLI and RDDI participants. RDLI participants manifested strong dedication and eagerness to succeed with their business, while being willing to work extra hours for someone else in order to sustain their business and themselves financially.

*I was working evenings at a pub (so two or three evenings [per week]), so I was able to work all day on [Organisation A], but [was] also able to go to work at night, so I wasn't losing any hours of sewing, or anything like that. (Grace, A1-p)*

Further, the positive mindset of the participants is related to this, although there is less data about it. Indeed, memos and interviews captured that when they felt motivated, they could make things happen very quickly as they were the one in charge (A1-p, Z10-m, Z16-m, F1-p, G1-p), which is not necessarily the case with participants who were employees. Indeed, for them, it might relate to their position within the hierarchy. The higher an employee is, the greater the possibility for the RDI outcomes to impact the entire organisation, which was evidenced by Claire (D1-p), Pauline (I4-p, I8-p) and Lee's (I7-p) actions.

#### **Job position - substantial level of confidence**

The *job position* of the RDI participants as well as their relationship to their organisation can highly influence the outcomes, but also their sustainment over time. In cases where the participants were sole traders with no employees, or very small organisations, they embodied the business and therefore all outcomes of the RDI had the potential to impact directly their business.

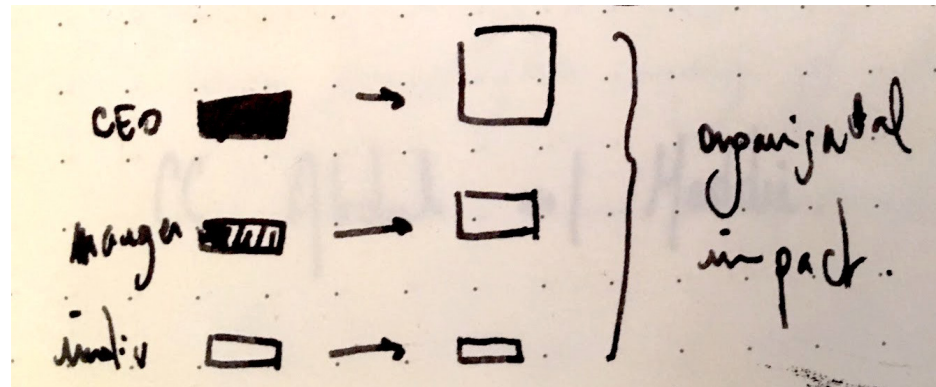
*They don't have to ask permission of anybody other than themselves to make changes (T9-p).*

*Violet discusses how the business has changed since the beginning of GRTI-US, and indicates that those changes are mostly at an individual level, as she is alone in the company. That reminds me of some of the initial assumptions where the research team assumed that an impact on a sole trader would automatically result in an impact on the organisation, as they cannot be differentiated. (Z44-m)*

In bigger organisations, the job position of the participant can also be of importance and can influence RDI outcomes, in the sense that the higher participants are in the hierarchy, the more likely they are to have deep knowledge about the organisation's vision and structure.

*[Design Innovation practitioner & DF's name] found that the higher up you go in the organisation, the easier it is to engage with the participants of RDI. The middle roles do not grasp the bigger picture. We need people who have an umbrella view. (W5-o)*

The job position of the participant in influencing RDI outcomes is one of the first forces I identified in this study, although it was not clearly understood yet. In August 2020, less than a year after the start of my PhD, I captured these initial thoughts in the visual presented below in Figure 5.13.



**Figure 5.13:** Memo Z5-m from August 26th, 2020, capturing my thoughts on the relationship between the job position of RDI participants and the potential impact of RDI on their organisation.

#### *RDI Participant before the RDI - substantial level of confidence*

The RDI participants before the RDI can also influence RDI outcomes with their expectations. Most of the GRTI participants (RDLI) had really low or no expectations of the interventions. As a result, many participants were pleasantly surprised, which possibly influenced their engagement. On the other hand, participants from the Festival mostly wanted to come away with something “tangible”, “learn” or “make a positive impact”.

*We had zero preconceptions and because all the all that we knew was that [former team member at Northumbria] had said, ‘it’s not what you think’ ... that was it! ‘It’s a good idea. It’s not what you think’ was all I had. (Claire, D1-p)*

*I was not expecting anything, but that’s in a good way. I was expecting more of what I had already gotten [in the past], somebody talking at me, and not to me, and asking me to be involved. (Emelia, G1-p)*

*I was quite excited to like, just meet lots of people, obviously. And also to hopefully come away with something tangible. [...] I was kind of hoping to learn a bit more from it, which I have. (LMN1-p)*

However, my own expectations as an RDLI participant were very different, due to the fact I had been conducting this research for quite some time by that point, and had witnessed the positive outcomes on many organisations prior to participating in one myself. It is likely that these high expectations made it a lot harder for Design Facilitators during the intervention.



*Overall, I am feeling really positive and enthusiastic with participating in GRTI and I probably have much higher expectations and hopes in this programme than other organisations would have, as I actually am aware of the full potential of such interventions. (Z47-m)*

## **Capabilities**

**Maturity** - *substantial level of confidence*

The maturity of participants has been mentioned by various research participants and data set contributors, as a factor influencing RDI outcomes. A challenge raised by this code is that it was not always clear what kind of maturity data was referring to; the individual's age and life experience, their business maturity, or their design maturity. Trying to better understand some of the nuances, I captured the following;

*Discussing with the research team my experience of attending GRTI Young Business Edition as opposed to facilitating it and the lack of impact it had on me, they suggest that there is a difference between a Young Business and Young Business Person. This is especially interesting as I ran another business in the past and spent a long time refining ideas we worked on during GRTI. (T31-p)*

Nevertheless, a participant clearly referred to maturity in the context of their age and life experiences, explaining how they had changed over time and how gaining in life maturity had made them more receptive to other opinions and perspectives, which Design Facilitators offer in RDI.

*I think because I'm a lot older (I say a lot older, three years is not that much older!) but from 19 to 22 is quite a big difference and I think, now, I'm a lot more open to other people's perceptions, and other people's opinions on things. I used to be, as I said, very anxious to the point where [even] the thought of criticism made me feel [aural cues for a bad emotion, such as terrible] but now I'm a lot more open to that, and I want other people's perceptions, like to ask people 'What do you think of that? I want perspectives on this thing.'(Layla, C1-p)*

However, many research participants and data set contributors have a contrasting view of life maturity, as growing up often comes with a lowering level of creativity, old habits and life experience, which make the RDI participant more resistant to the ways of working employed in RDI.

*One year we had to design the bedroom of the future. [...] I think it was probably 14 to 16 year olds to get involved in doing that and modelling it. [...] But y'all know that kids, they're not really constrained by the same things we're constrained by, so you get some really weird, wacky, good ideas. (Ethan, I5-p)*

*The value of naïvety: it is very valuable to have individuals looking at things with fresh eyes and ask 'dumb' questions, because there's no such thing as dumb questions. (X1-o)*

*What seems implicit here is that maturity is a good thing. [MB] thinks that on the contrary, the less experienced the participant is, the greater the impact is, but the longer it takes to happen. A fairly evangelical and exciting experience. Because what we ask participants to do is put aside what they already know in order to think differently. With maturity comes all sorts of experience and resistance, as participants might have tried something in the past that hasn't worked, and refuse to even try it out. (T19-p)*

**Agency** - substantial level of confidence

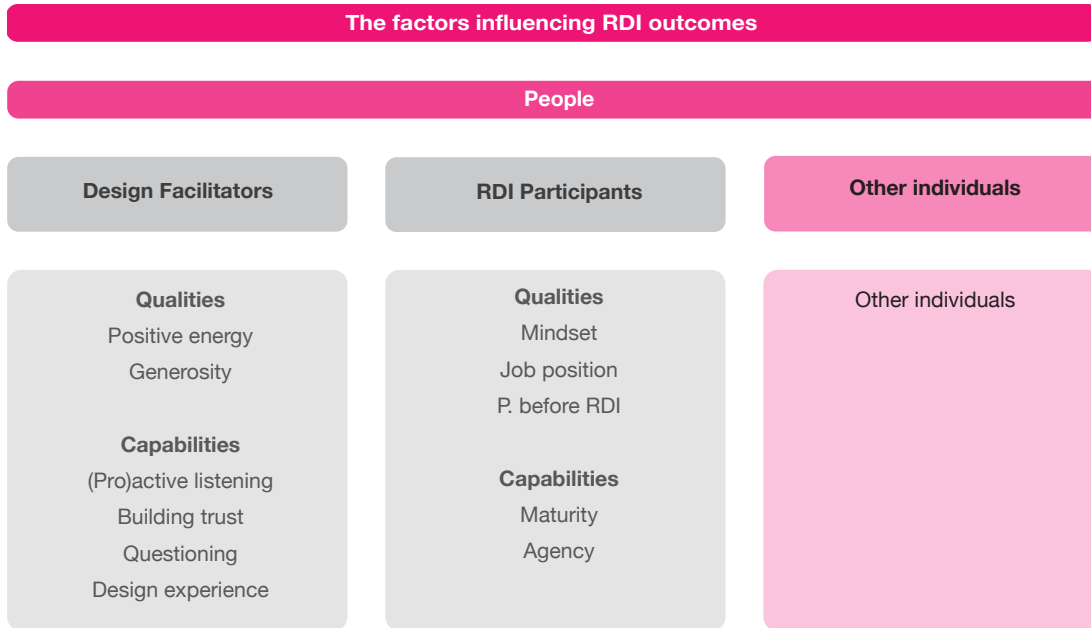
Even if there is a lower amount of data about it, agency is directly building upon the participants' job position and their capability to implement ideas and enact change within their organisation. The agency of an individual relates to whether they are encouraged to actively engage in RDI and to the culture in place within their organisation. In the context of GRTI (RDLI), participants from Micro, Small and Medium Enterprises (MSME) were the owners and the founders of the businesses and therefore they had complete agency over the outcomes of the RDI (U3-o).

*Violet discusses how the business has changed since the beginning of GRTI-US, and indicates that those changes are mostly at an individual level, as she is alone in the company. That reminds me of some of the assumptions from the research team's reflections where we assumed that an impact on a sole trader would automatically result in an impact on the organisation, as they cannot be differentiated. (Z44-m)*

However, agency can have a negative effect on RDI outcomes if the employee has been forced to attend the RDI. Although they have been enabled by their organisation giving them agency to attend and engage with RDI, by forcing them to attend, the organisation removed their agency to make their own decision and choose the activity they want to engage in.

*In the factors influencing the impact of Rapid Design Interventions, if we look at the openness of the participant, it is likely that they might be a lot less enthusiastic if they have been 'forced' to participate or nominated, as opposed to if they had a choice, or volunteered in the first place. (Y3-o)*

5.7.1.1.3. Other individuals



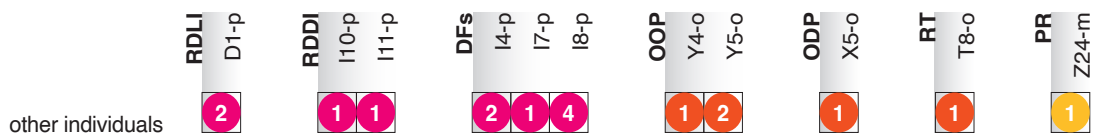
**Table 5.11:** *People category overview, RDI participants code and sub-codes overview*

**Critical Review**

Although ‘other individuals’ were not mentioned by many research participants, it is an interesting and emerging code. Overall, it relates to the potential influence other people in the room (outside of participants & DFs), people organising the RDI, and people recommending the RDI to participants might have on the RDI outcomes.

This influence, which can be positive or negative depending on the situation, creates a link between individuals, the hierarchy (5.7.1.3.2, p. 165) and the culture within the organisation (5.7.1.3.1, p. 161) and the industry & sector (5.7.1.4.2, p. 173).

**Triangulation**



RDLI: RDLI participants / RDDI: RDDI participants / DFs: Design Facilitators / OOP: Other organisation practicing RDI, DT & DI / ODP: Other Design Thinkers & Design Innovation Practitioners / RT: Research team / PR: Practitioner-researcher

**Figure 5.14:** *Other individuals triangulation overview*

### *Other individuals - substantial level of confidence*

Without taking part in the RDI, the team of a participant within their organisation has the potential to hinder or enable the outcomes of the RDI. Indeed, data collected from Design Thinkers and Design Innovation practitioners shows that other people within the organisation have the potential to influence the RDI outcomes, whether it is because of openness to innovation and creativity or lack thereof, fixed vision, or unwillingness to change.

The learners would have actually liked to have the clients with them to check throughout the process and get more reassurance on their work, as opposed to presenting everything on the final day. However, it could have hindered innovation if the client had not been as open to new ideas. Showing draft, but fully fleshed ideas, although it is a speculative exercise, allows the client to visualise and understand its potential. (Y5-o)

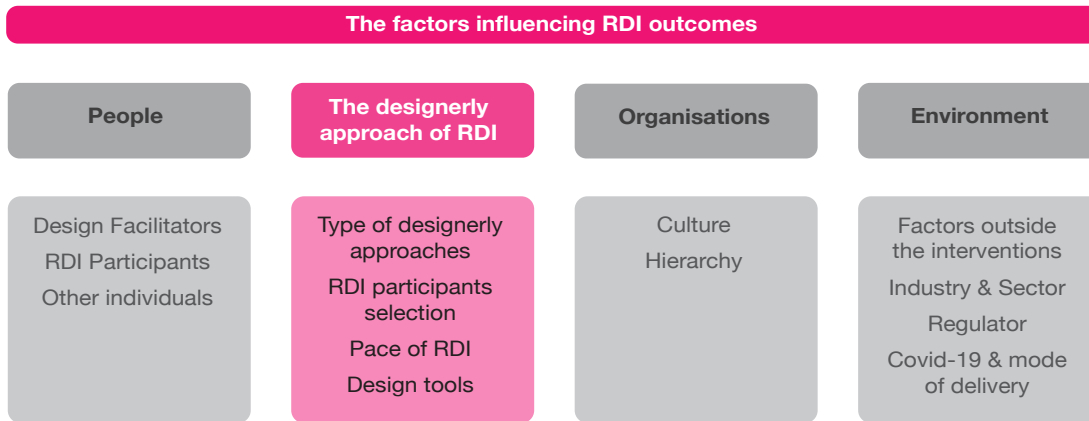
*So they were excited about something, and we'd do a whole pile of work on it, and then try and make the organisation do it. And oftentimes, they met with failure because people don't always want to change. (Pauline, I4-p)*

*[DI practitioner's name]'s previous team was very open to innovation and interested in creativity, but other teams within the organisation aren't. (X5-o)*

*To be honest, I knew we weren't going to do anything dangerous, but I knew that for many of my colleagues, this would be totally unacceptable. (Claire, D1-p)*

If in a positive mindset, other individuals can enable participants to develop exciting new ideas and projects for their organisation. RDI participants will be excited and feel passionate about the ideas, concepts or strategies they developed during the RDI, and will be ready to take them further with their teams and their organisation and enact change. On the contrary, a reluctance of other individuals to support RDI is likely to negatively impact the participants' willingness to engage and develop ideas in RDI over time, as they know they are likely to be disregarded.

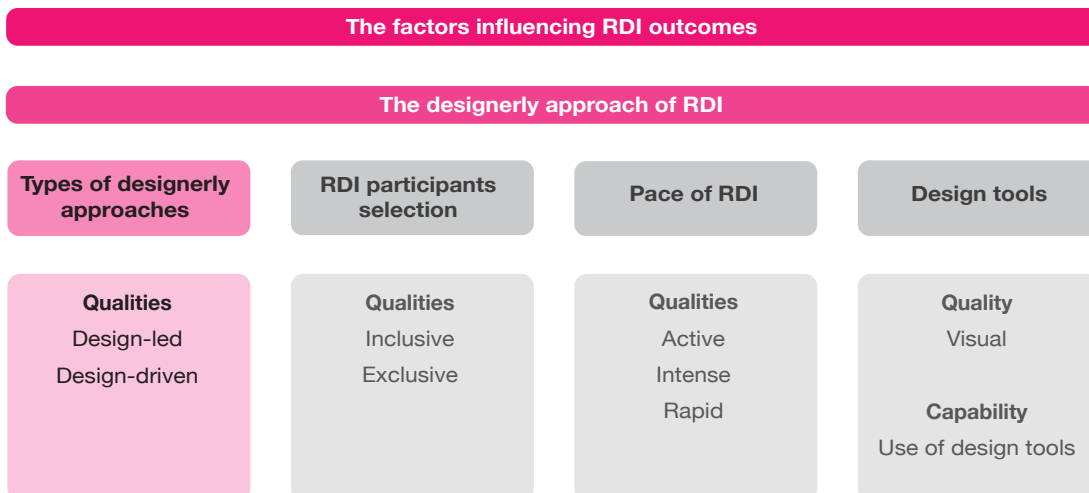
### 5.7.1.2. The Designerly approach of RDI



**Table 5.12:** Overview of the factors influencing RDI outcomes, including themes, categories and codes.

The second influence on the outcomes of Rapid Design Interventions that the data analysis brought to light is, not surprisingly, the very nature of RDI. From the beginning of this study, it struck me as a key theme to investigate and address, as I was trying to understand why RDI differs from other workshops. As one of the key questions during interviews, this theme was discussed with the research participants. Interestingly and without steering the conversation in this direction, design thinkers and doers (X1-o & X2-o) and GRTI-A participants (S1-o) mentioned the approach of RDI as being of importance.

#### 5.7.1.2.1. Types of designerly approaches



**Table 5.13:** The designerly approach of RDI category overview, types of designerly approaches code and sub-codes overview

### Critical Review

'Types of designerly approaches' helps build an understanding of Rapid Design Intervention approaches, differentiate Rapid Design-Driven Interventions from Rapid Design-Led Interventions and discern what each of them entails. Combined with the literature, this code allowed the refinement of the following definitions;

Rapid Design-Driven Interventions are aiming at the development or betterment of a product, a service or even a system (Verganti, 2009) and can resemble Design Sprints, popularised by Google Ventures (Knapp et al., 2016), which allow organisations to rapidly go through a design cycle (Architecture, Design & Planning, 2020).

Rapid Design-Led Interventions are an exploration of the potential futures for the organisations, leading to the creation of a strategy (Design Council, 2021) to realise their preferred future (Simon, 1996). They are usually delivered by design consultancies and institutions.

With regards to the data collected in relation to the types of designerly approaches, it is important to note that research participants who participated in the Festival were not asked any questions about this, as time was very limited. Further, other RDI participants really struggled to differentiate and clearly explain design-led and design-driven when asked to during their interviews, often mixing them up with Design Thinking. This confusion of terms is not surprising as there are subtle differences between them that non-designer RDI participants are unlikely to fully appreciate yet.

If this data set mostly captured thoughts from Design Thinkers and professional DFs, they too find this exercise difficult, recognising that they were sometimes guilty - I know I definitely am - of using these terms interchangeably, especially in conversations.

### Triangulation

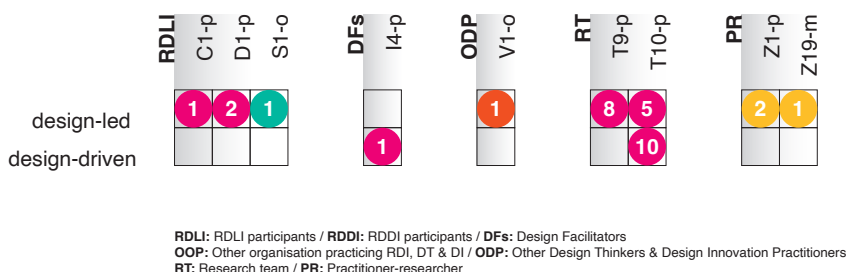


Figure 5.15: Type of designerly approaches triangulation overview

## Qualities

### *Design-led - substantial level of confidence*

Supported most by data, a design-led approach to RDI is where design meets with business strategy. It is “an approach [...] to action, discovery and development that is multidisciplinary but led from the perspective of design principles and practices” (T10-p). Using this approach, DFs will question participants about their intent and the reasons behind business directions and decisions, which participants from GRTI (RDLI) confirmed, although they did not employ the term design-led. Indeed, DFs work together with participants to understand and capture the organisation’s long-term plan and create a roadmap to achieving it. Through the process, they together design something that the organisation can produce, while considering multiple factors such as the environment, the conditions and the capabilities needed to achieve the organisation’s vision, goals, and direction.

*Right, this is my understanding [from] not being a design person. So traditionally design would be the making of things - that’s the traditional definition of design. But that’s just about working out what the problem is that needs to be solved, and working through possible solutions, and trying them, to fit that work - ‘would that work? And, would that work?’ (Claire, D1-p)*

*Design-led, in difference to design-driven, is about the approach more. For me, design-led is [...] an approach that integrates multiple disciplines that is led through the principles of design. And that may well be things like rapid idea generation, problem scoping, principles of prototyping, user-centred, even though I don’t particularly like that. (T10-p)*

A design-led approach relates to abductive thinking, tolerance and ambiguity, and takes participants on a journey to exploring their organisation’s possible futures,

*Being accepting of the fact that [they] are going to start an inquiry, start exploring the space confident in the fact that [they]’ll be able to do something in that space that arrives at some sort of concrete outcome. (T9-p)*

The outcome mentioned in the data takes into account all stakeholders and potential beneficiaries who may be adversely affected by the change the organisation is planning to make and involves being conscious of the consequences, so that the participants innovate responsibly. To that end, DFs and participants speculate about future possibilities to learn something about them.

### *Design-driven - low level of confidence*

Somewhat less supported by data, a design-driven approach involves progressing ideas to address a challenge, selecting those with the most potential, developing solutions, and prototyping them. Rapid Design-Driven Interventions are honest about

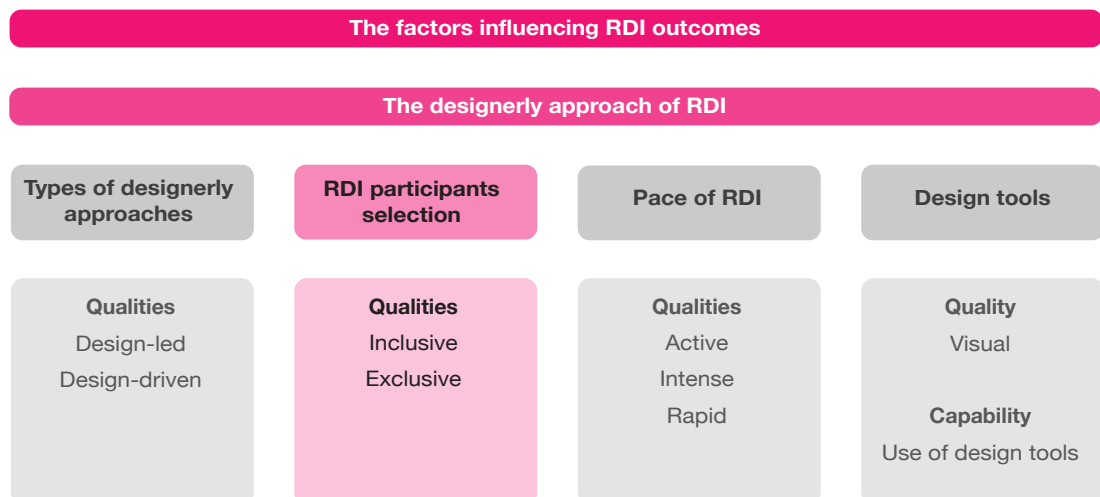
what they can achieve in a short timeframe, and they often apply and adapt the five steps of Design Sprints to generate and progress the ideas. As data shows, they are focused interventions addressing a pre-identified challenge.

*We apply the design sprint methodology and have probably innovated that methodology a little bit to suit our needs. So one of the examples is that we've created this thing at the festival called [name of the activity] - so this is specifically there for projects that are not going as fast as we want, [where] we already know what the problem is and what the solution is, but the progress that we're making is not fast enough, or we haven't got the right people around the table to make it happen. (Pauline, I4-p)*

These interventions usually involve organisations that establish their business strategy around product, service and system creation, allowing them to generate new thinking from across their organisation. As one of the members of the research team highlighted during their reflection,

*Design there is very much being used in terms of an organisation that is [...] deriving consumer products for the marketplace or even services and their business strategy is then being derived around that wedge and that progression and develop[ment] of that as a platform for value creation. (T10-p)*

#### 5.7.1.2.2. RDI participant selection



**Table 5.14:** *The designerly approach of RDI category overview, RDI participants selection code and sub-codes overview*

#### Critical summary

'RDI participant selection' highlights a tension between the two modes of selecting RDI participants; inclusive or 'exclusive.

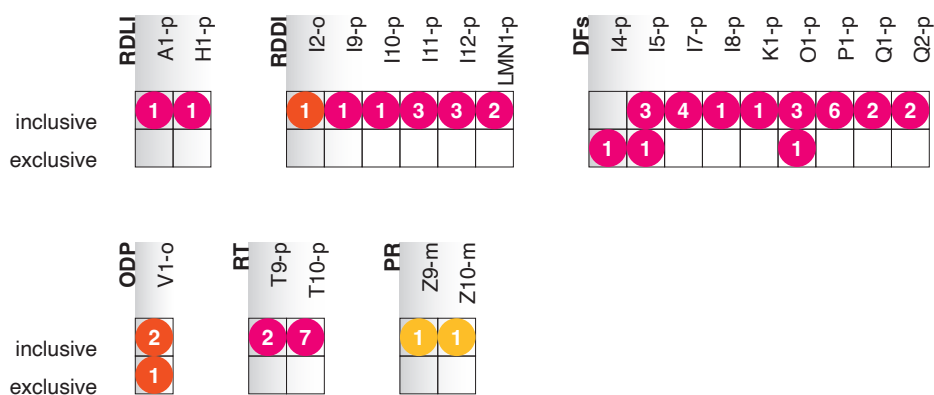
Data gathered illustrate that Rapid Design-Driven Interventions are inclusive of



backgrounds, disciplines and hierarchy. This mix of participants working together towards developing or improving a product, a service or a system, enables productive diversity. In contrast, Rapid Design-Led Interventions are exclusive: engaging with leaders, founders and key stakeholders of an organisation to explore the potential futures of the organisation and develop a strategy. Here, exclusivity enables constructive agreement.

This RDI participant selection code is critical, as it indicates that the types of design-led approaches used in RDI, and their potential outputs and outcomes, are influenced by and dependent upon the individuals invited to join the interventions.

### Triangulation



**RDLI:** RDLI participants / **RDDI:** RDDI participants / **DFs:** Design Facilitators / **ODP:** Other organisation practicing RDI, DT & DI / **ODP:** Other Design Thinkers & Design Innovation Practitioners / **RT:** Research team / **PR:** Practitioner-researcher

Figure 5.16: RDI Participants triangulation overview

### Qualities

**Inclusive** - outstanding level of confidence

According to Design Facilitators, Design Innovation practitioners and Design Thinkers who contributed towards the data set, Rapid Design-Driven Interventions are not just about users or consumers. They are about all stakeholders involved in the situation that is being addressed by the intervention. By bringing diverse audiences and getting heads together, RDDI are seeking to

*draw in employees of an organisation or employees across organisations to come together and to work together. [...] And it may be outside of the organisation, so it might be broader stakeholders, or citizens, or something else. (T10-p)*

RDDI actively involves people from a mix of disciplines in order to break down traditional silos and benefit from the participants' distributed intelligence. Indeed in RDDI

settings, everyone's thoughts have the same weight and importance, as individuals bring with them insights from their professional fields and experience of life and bring different lenses to a specific situation. Supporting this equitable approach, participants abandon corporate attire and suits and leave hierarchy outside the room to fully embed a democratic process reliant upon what each individual can contribute. Within design-mature organisations, no one is too big to donate their time to such activities, and, seeing leadership team members buying into and participating in such interventions is appealing to participants, creating a healthy work dynamic (see 5.7.1.3.2. Hierarchy, p. 165).

*When I started the sprint, got chatting with people, I realized it's such an interesting array of personalities here, people from so many different backgrounds. (Jack, I11-p)*

Notwithstanding this, bringing together a diverse group of individuals comes with challenges, as participants highlighted. Introverts, for example, might be a bit less comfortable in large groups. Addressing a challenge that does not always get fully resolved is often unsatisfying and frustrating for them, but also for detail-oriented individuals.

*Is there a way, though, that you can use introverts in your Sprints that makes them feel comfortable? Could you just go [...] off and see if you can come back with an answer in a couple of hours and allow them the time to self-reflect, not in a noisy environment, but just maybe they can be online right and are there? [...] So I think there's something there about getting the most out of introverts that we haven't teased out yet. There's something about neurodiversity, something about making it feel like a welcoming environment for everybody. (Lee, I7-p)*

Despite the efforts made to bring diverse groups of individuals together in Rapid Design Driven Interventions, there is still a lot of work, learning, and refinement to be done to find a way to make the RDDI environment inclusive and welcoming to all and to better engage with all different personality types and preference, with neurodivergent individuals, and with people from all social backgrounds and locations (I5-p, I7-p, J1-p & I9-p).

**Exclusive** - low level of confidence

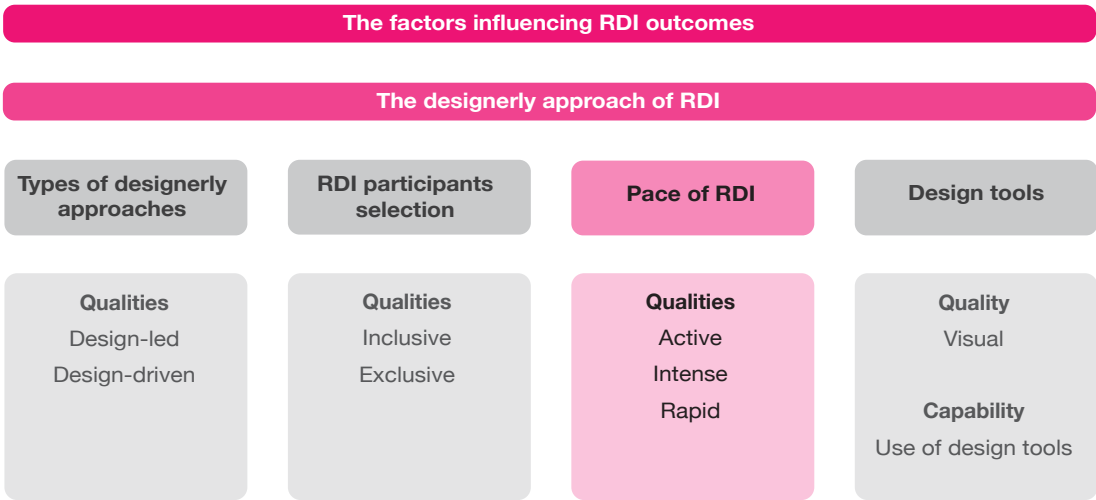
If Rapid Design-Driven Interventions connect diverse groups of individuals and are inclusive to most, my experience as a Design Facilitator is very different in the context of Rapid Design-Led Interventions, such as GRTI. Although little data supports this, RDLI set-up is usually exclusive rather than inclusive. Its essence is to bring in individuals with extensive knowledge of an organisation, its values, goals, and objectives, to work towards a strategy, which implies being either the owner, the founder or being in a leadership position. However, if there is a restricted number of participants in RDLI,

the DFs encourage participants to think and consider multiple perspectives, as Layla recalled;

*You're coming at it from a different perspective. I think that's the main thing. It was so many different perspectives, [and] the main things that I was being asked when we were doing [GRTI] were 'what about this?' Or 'have you thought about it in this way?' And that was the main thing for me. I mean, when you think of an intervention, you [think of] coming in and questioning things. So that's my first sort of the point of call - that's an intervention - you're going to come in and go, 'actually, have you considered this?' Or, 'what about this person? Or what about this audience? What about this? What about that?' It's basically questioning things. (Layla, C1-p)*

In addition to encouraging participants to embrace this multi-perspective stance, DFs contribute to this approach, each offering their own understanding of the situation and unique angle (G1-p, Z45-m & Z49-m). This last point, was emphasised in one of the memos I recorded before I participated in GRTI with my company, The Blooming Platypus, stating that “the main benefit I can forecast from my participation in GRTI is getting fresh eyes looking at [The Blooming Platypus], and different perspectives” (Z47-m).

5.7.1.2.3. *Pace of RDI*



**Table 5.15:** *The designerly approach of RDI category overview, Pace of RDI code and sub-codes overview*

**Critical summary**

*'The pace of RDI'* incorporates different qualities of the interventions, which are; active, intense and rapid. Active, the most important code, revolves around active engagement of the participants during RDI. Although it is mainly discussed in the context of participants, some data show that Design Facilitators in RDLI are very active in the

delivery, in order to grasp information and make sense of the organisation, but also to start interrogating the participants in order to investigate potential futures. Interestingly, these findings relate back to the (pro)active listening capability of Design Facilitators, and align with an earlier study of Rapid Design-Led Interventions, where Gribbin et al. (2018, p.X) identified that the interventions required “practice and active participation in the workshops” from participants and Design Facilitators.

The RDLI pace specifically is perceived as intense by participants, who have admitted the interventions can be “overwhelming” at times. There are two dimensions that can explain the data;

- The type of activities, locations, settings and tools used are potentially unfamiliar to most participants,
- They were being asked to think deeply about things they had possibly never thought about before and in ways they may not have been familiar with.

Intense is crucial in influencing the RDI outcomes as things that are found hard, unfamiliar and challenging by people often leave more of an impression on them- a lasting impact.

Data captured that Rapid Design Interventions enabled organisations and participants to quickly initiate or progress an idea. However, data contrasted the meaning of rapid, as it had barely been mentioned by RDI participants. One of the possible explanations is that participants are in fact not used to being part of design activities, and often have a main occupation outside of these interventions. So what appears to be rapid from a design practice perspective can actually be a lengthy commitment for someone who has to take a break from their other day-to-day activities.

### Triangulation

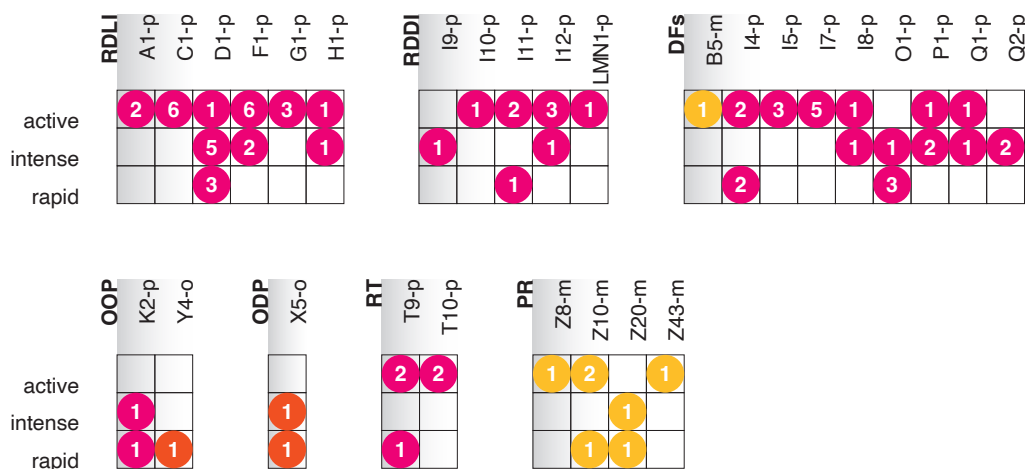


Figure 5.17: Pace of RDI triangulation overview

## Qualities

*Active* - substantial level of confidence

Rapid Design Interventions are co-creative settings in which a designerly approach, different to the values, behaviours and practices that a lot of employees would find in their traditional work settings are being embedded. As a result, they create the space for individuals to be involved. Indeed, RDI participants emphasised how much they appreciated the collaborative approach and the fact that they were considered as equal and could contribute, as opposed to being talked at - which is the case in many other business settings such as seminars, or conferences.

*I don't particularly like seminars or anything like that, because I tend to zone out and feel like my time is better spent elsewhere. But I really enjoyed the hands-on approach of that entire event. (Grace, A1-p)*

*The [Festival] is not a conference. It's not a spectator sport. It's a full-contact sport. Rather than doing innovation to people, it includes them. (Pauline, I8-p)*

*You actively want to hear what each individual person has to say because it will be something different. (Jack, I11-p)*

*You can still contribute even if you're not an expert in the field. (LMN1-p)*

*We just put our energy into the sprint. (Vincent, P1-p)*

Specifically, data showed that the active nature of RDI influences the intervention's outcomes by making the content "stick". As the participants actively engage throughout the process and co-create the outputs of the RDI, their memory absorbs the work that is being done, making them more likely to remember and act upon it once the intervention is over.

*I was expecting more of what I had already gotten, somebody talking at me, and not to me, and asking me to be involved. [...] The way that you guys did it, it's not only what you're saying to me that makes it stick, but as you're involving me ... because now, I can't get it out of my mind, all of the things that I want to incorporate into it. (Emelia, G1-p)*

Although most data in relation to the active pace of the delivery is discussed from an RDI participant perspective, it is essential to note that in RDLI, research participants and data set contributors discussed the active engagement of DFs. Design Facilitators indeed are actively listening to participants, in order to grasp their ideas and build an understanding of their organisation, but also to challenge them.

*It was like really delving in and looking at every little aspect of what I'm wanting to do, how it needs to be done. [...] I will say that I just have to applaud you*

guys because that's a lot of work from your end to delve into somebody's business like that. (Violet, F1-p)

*I think what happened in these co-creative sessions is that the expert facilitator absorbs, [...] actively listens and plays that back. 'So what you're telling me is, you're only able to sell fifty pizzas a weekend because you haven't got space in the van for more than fifty pizza boxes.' But simultaneously, your brain is taking away some of the barriers, and, so when you say 'Okay, you're telling me you can only do fifty pizza boxes tadadadada...' you don't finish the sentence there like an active listener would, your sentence carries on. 'So what if you did so and so? Like this?' So you're asking that challenging what if question. (T9-p)*

#### **Intense** - substantial level of confidence

If RDI allows participants to “behave and operate in a different way” as well as generate new thinking to address an old problem (I8-p & I6-p), it is not always an easy process for the participants. Specifically, for most RDLI participants, the interventions and the processes “very intense” and “overwhelming”.

*I was absolutely shattered. So it's really, really intense - they asked lots and lots of questions, and they really made you search your mind, [asking] 'Why do we do that? Why, why?' So I do remember every time there was a tea break, we were all desperate for a cup of tea and a biscuit! (Claire, D1-p)*

*That three hours man, [...] whew, that's brewing. (Violet, F1-p)*

#### **Rapid** - substantial level of confidence

As the name suggests, Rapid Design Interventions are rapid and allow organisations to make rapid progress on the challenges they are trying to address, whether it is to kickstart it, or to advance it. In addition, the rapidity of these interventions helps build momentum by injecting some energy into the room and getting individuals acquainted. It accelerates processes and achieves a level of familiarity between participants within a few days or a few hours.

*We're really open to applying this methodology [...] to then make rapid progress on things that we know we need to address. [...] So we'll do that sprint to, as you say, really kickstart activity but that will then go and have legs of its own. And in some ways, that's where the Sprint is amazing: everybody's got loads of energy, and you come out with some great things. (Pauline, I4-p)*

*After three days, you lose all those fears. You're friendly with everyone. You know, you just throw out your voice. If it's a good idea, if it's a bad idea, everyone just wants to listen. (Jack, I11-p)*

However, rapid is nuanced and put into perspective by data. Indeed, RDI are rapid from a Design Innovation practitioner perspective. That is in comparison to longer

Design Innovation projects that can last weeks, months or years.

*So, rapid is clearly a context, a term that can be contextualised. So, if I'm trying to design an aircraft carrier, then a rapid intervention might be a couple of weeks, or a couple of months. Still rapid in aircraft carrier terms.*

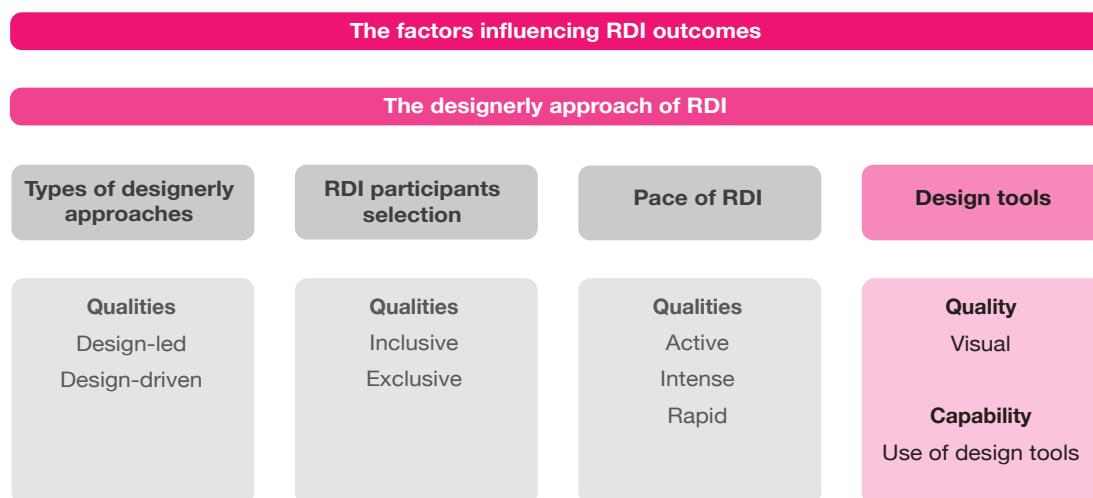
*But what we really mean in the context of your study is things that can be contained within a day, or a couple of days. Two or three events that may together comprise twelve, fifteen hours of activity. The sort of intensive, high pressure, high pace. We don't spend too much time on the niceties and go straight to the difficult questions. (T9-p)*

But for RDI participants, who most of the time are not working in the design field, have other jobs, and need to make time to attend these interventions, it can be challenging to commit and ring-fence time. As a result, DFs try to adapt and sometimes reduce the length of such interventions, which eventually influences the outcomes, and the outputs.

*I think the challenge is always it's very hard to put the day jobs on one side. So I've been I've been ducking in and out of meetings and again. [...] So for me it's the challenge is just getting people to really commit and ring fence that time. (Ewan, K2-p)*

*I think it's harder for people to give up three or four days. [...] I'm totally undecided. Because I felt five days was too long. Sometimes. Then we've done five days before I thought it did four days, a couple of years back. And then we did three days this year. And I just don't know what's right. Today, it's felt a little bit too squeezed. I just, I'm trying to get my head around what's right and what's right, from a client perspective. It's about whether they get the relevant solutions out and work to the level that they want. (Eugene, O1-p)*

#### 5.7.1.2.4. Design tools



**Table 5.16:** *The designerly approach of RDI category overview, Pace of RDI code and sub-codes overview*

## Critical summary

Although it is less supported by data, ‘design tools’ raises interesting points. Data indeed showed that the tools used in RDI were mostly visual, which allowed Design Facilitators and participants to capture the conversation and information, as well as make sense of it. Individuals within an organisation can be taught how to use these tools to deliver RDI themselves.

However, it is important to understand that the use of design tools supports a design-erly way of doing that is creative. Data reminds us that Design Facilitation as a practice is more than just the use of design tools and is, in fact, a skilful deployment, adaptation, refinement and development of such tools. It is about the capability of the Design Facilitators to adapt and tailor these tools to the environment of an organisation.

## Triangulation

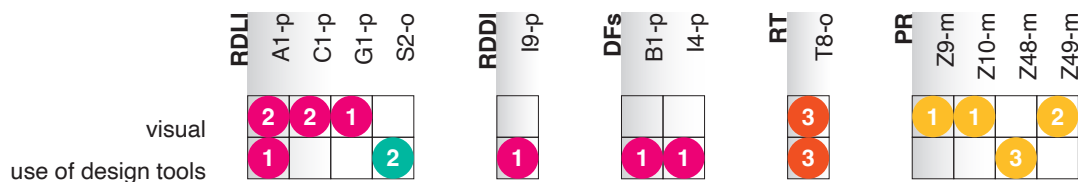


Figure 5.18: Design tools triangulation overview

## Qualities

**Visual** - moderate level of confidence

Although this is not much supported by data, some participants discussed the importance of visual tools as a way to enable the process. Specifically, participants found the use of templates, whiteboards and post-it notes ideal for capturing ideas and conversations to keep the participant involved but also to aid the sense-making process.

*I really enjoyed [the activities]. I don't like computers, I hate white pieces of paper and I hate lines on paper. I also hate big pieces of text. So the way that [GRTI] was really active, and the way it was all set out was literally just perfect for me. (Grace, A1-p)*

*I think also, it's just good for your own clarity to see everything. I'm a very visual person anyway and [GRTI] was a very visual process, and so it helped me to see everything on a big whiteboard with post it notes and grids, so I could say 'oh, okay, this is what the idea looks like, and then go from there.' (Layla, C1-p)*



## Capability

### *Use of design tools - substantial level of confidence*

The use of design tools made by Design Facilitators is less supported by data, but raises interesting points. Indeed, data shows that DFs are often pivotal in training the rest of their organisation to use the tools necessary to run RDI themselves.

*[Design Facilitator at Organisation I's name] is also responsible for tools that enable innovation. So for example, last year, when we were all grappling with home working, and wondering how on earth we were going to do [the] Festival, [he] was pivotal in mastering Miro very quickly, and then passing those skills on to others within our business. And we ran 388 hours of training for those people who are going to be participating in the Festival, and recorded it so other people could have it, because we knew that the success of the event would be on as many people being able to use it on Monday morning, when we opened up the doors. [...] So it has actually not only enabled innovation to bloom within the business, but also has grown capability across the entirety of the business. (Pauline, I4-p)*

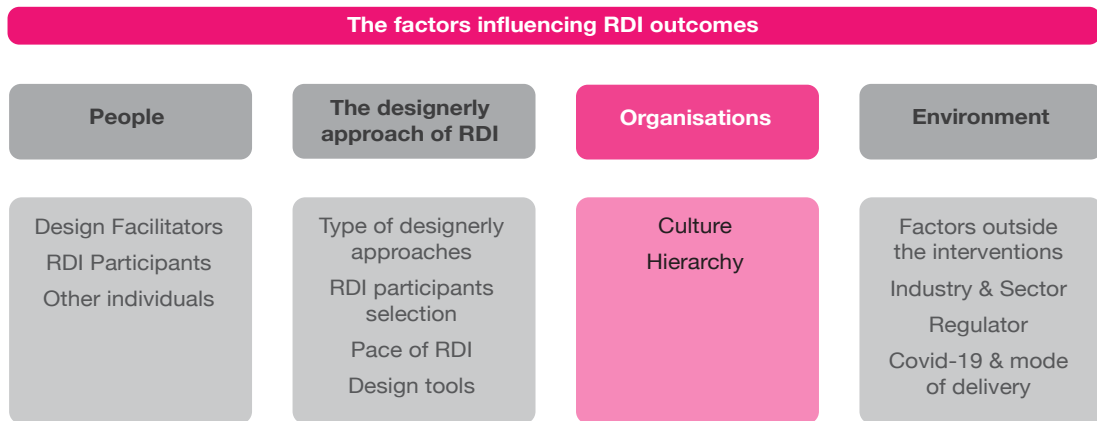
*However, data collected with the research team nuance the 'use of design tool' by everyone. If all individuals can use these tools indeed, it is a skilful deployment of these combined with a facilitation experience that allows successful RDI to be delivered. 'Design Tools' is not solely about the tools themselves. It is about the Design Facilitators' capability to utilise these tools as a loose framework that can be "adapted, refined and developed to fit the context" (T8-o).*

The question of the expert facilitator and their role in deploying tools. The tools are more a description. So actually, it's about the role of the people in the room and the question they ask that can/could deliver rigour. Might be that this becomes a legitimate approach if there is a step before all of this to do with tailoring tools the tools. (T8-o)

*I'm just thinking about the conversation I had with [colleague, Design Facilitator and Design Innovation practitioner's name] yesterday. And about how - yes, design tools and methods are useful, but design practice might be the most important. [...] But these tools can only be maximised and used to their full potential if they're used by skilful humans. (Z48-m)*

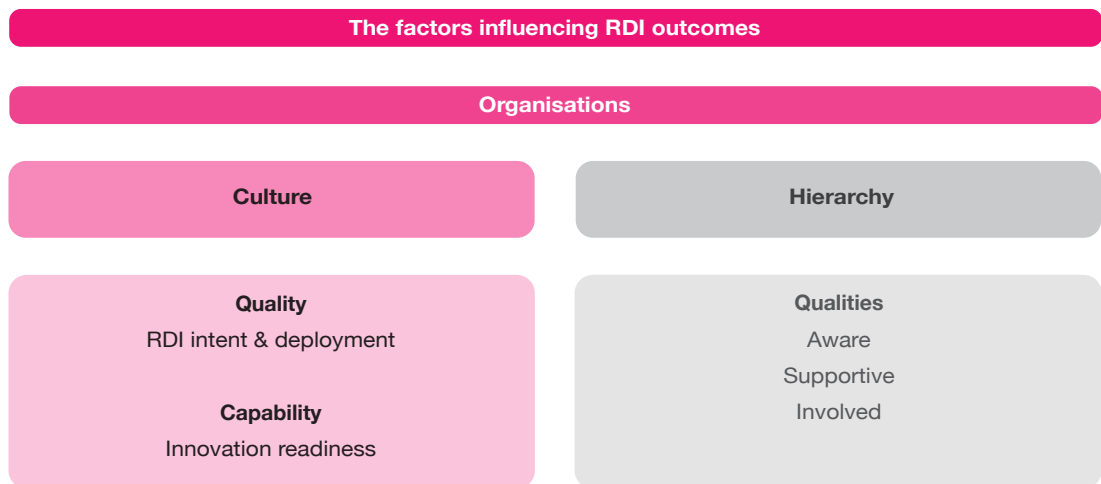
### 5.7.1.3. Organisation

With 26 activities and 85 references in total, the third influence on Rapid Design Interventions outcomes is ‘organisation’ and involves the culture present within an organisation and the teams of this organisation, as well as its hierarchy, as Table 5.17 highlights. ‘Organisation’ implies that organisations are living and constantly evolving entities made of individuals, their mindsets and their behaviours, which form a culture.



**Table 5.17:** Overview of the factors influencing RDI outcomes, including themes, categories and codes.

#### 5.7.1.3.1. Culture



**Table 5.18:** Organisations category overview, Culture code and sub-codes overview

#### Critical summary

‘Culture’ as a force influencing RDI outcomes pertains to the support and enablement of individuals to engage - or not - with Design Innovation practices and RDI. Culture captures organisations’ intent and deployment of RDI, but also their innovation

readiness. Ultimately, culture should be supportive of a designerly approach, as eventually, by witnessing good practices, successful interventions and learning from failures, more and more employees will be willing to engage in RDI.

Overall, it is essential to note that Organisations D, I and P are the only organisations who mentioned culture as of importance. The most likely explanation is that other organisations are either not big enough to have a culture influencing individuals, do not have an innovation culture in place, or that the research participants from bigger organisations did not have an understanding of such intricacies. In addition, the research team heavily contributed towards culture as a code, as we used our knowledge, experience and expertise to compare different organisations we worked with in the past (T18-o & T21-o). We noted that organisations with an innovation culture in place often provided infrastructure and/or processes to deliver RDI, which was not the case in those where this culture was non-existent. As a result, it was more difficult for employees to organise, attend and deliver RDI, as there were no pathways to do so.

### Triangulation

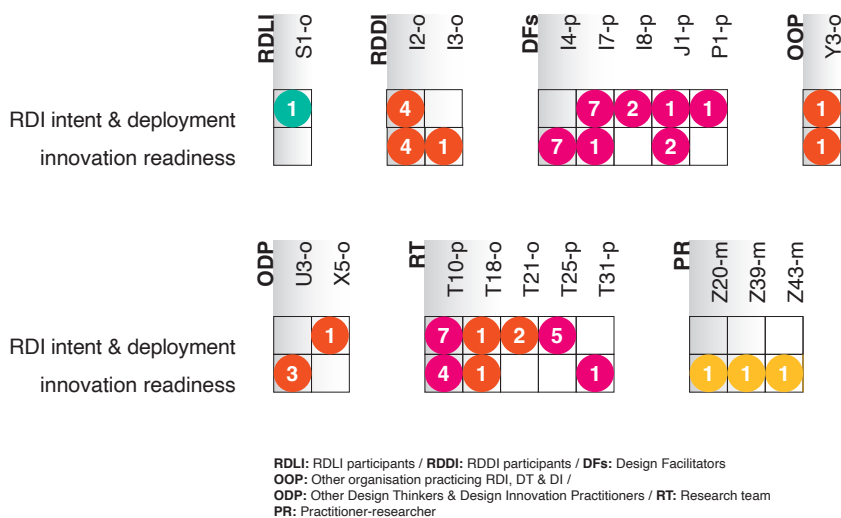


Figure 5.19: Culture triangulation overview

### Quality

#### RDI Intent & Deployment - substantial level of confidence

RDI intent & deployment focuses on what RDI are used for, and how they are being deployed within an organisation. Starting with the intent, RDI are mostly used by organisations as a way to spend a dedicated amount of time focusing on the business to “drive it forward” (I8-p). To achieve this, it requires organisations to identify and define clear purposes for the interventions prior to their delivery. From data, two types

of purposes were identified; internal-focused and external-focused (T10-p).

Internal-focused purposes are generally about the implementation of existing processes, developing new ways of doing, as well as getting rid of some of the arduous bureaucracy. External-focused purposes are usually about exploring new narratives for the organisations, new destinations, outputs and ways of communicating. These latter purposes are often a means to achieving business targets and a culture of innovation, as organisations realise that they cannot address today's challenges, be resilient as a business, and have sustainable business futures without innovation (I4-p & I8-p). By delivering RDI, organisations show their employees that they are ready to invest time and money in such practices (T21-p; P1-p & S1-o).

*But I guess that that underpins all of the work that we're doing in innovation, that if we continue to operate as we do today, we will not meet our business plan targets. We will not be fit and resilient for the future. And so we need these, these very big interventions, if you like, in order to disrupt what we're doing for us to then find new ways to do things better. (Pauline, I8-p)*

*The other [reason why we take part and invest in the Festival] is culturally for us. It demonstrates to our staff that we want to be innovative, we want to think differently, want to work differently, and it's a really strong message that we can use internally that we don't just talk about doing things differently, we actually act on it. (Vincent, P1-p)*

However, the intent for delivering RDI does not have to be split between internal and external-focused. Innovation is indeed a lot more complex, and addresses wicked problems that are multi-faceted, meaning that organisations can achieve different purposes .

*So across the UK, every year, there are about 100,000 utility strikes, so this is when people managing gas or digging up a road, worker] accidentally catch a comms cable, a water cable or electricity cable. So firstly, and most scarily, this can kill people, because they're digging blind - they're digging up tarmac and stuff. So health and safety is a massive, massive risk and unfortunately, people have died. Secondly, it's a massive disruption to customers, because we have to dig up roads and all the rest of it. If you don't know what you're digging up and what you're going to find, then it can take you longer than you anticipated. And thirdly, as a business, we want to be more efficient, so we want to save our money. (Pauline, I4-p)*

On the contrary, an unclear purpose or a lack of purpose can influence RDI outcomes in the sense that nothing happens after the intervention. As a result, resources - human, time, and money - are being wasted as RDI are not used to their full potential.

*So I think it's fair to say that when I joined the business, there were pockets of good things going on. But there was no order, or real purpose, and it was very much operating on a push... So they were excited about something, and we'd do a whole pile of work on it, and then try and make the organisation do*

*it. And oftentimes, they met with failure because people don't always want to change. (Pauline, I4-p)*

Lastly, it is important to note that the intent behind organisations' participation in RDI can also come from their environment. Indeed, in the case of Organisation I, involved in a sector where they have a monopoly, their regulator has added "being innovative" as a criteria to achieve (see 5.7.1.4.3. Regulator, p. 174).

Although there is little data about it, the deployment of RDI is also of importance in the culture of organisations and relates to the use organisations make of them . Are they an isolated, one-off event? Or are they part of a bigger picture?

*The cynic in me says actually, this is about creating good feeling within an organisation, within the employees, so staff feel valued. The less cynical, the more optimistic side of me goes 'well actually, this is a brilliant way of learning from all of the expertise and intelligence that your body of staff and your external setting has and really putting that to work to create something that is better than what you currently have.' (T10-p)*

## **Capability**

***Innovation Readiness*** - substantial level of confidence

The Innovation Readiness code refers to "the extent to which an organisation can sustain its ability to innovate" (Bailey et al., 2022, p. 2; Zeffass, 2005). Specifically, data shows that this capability regroups different qualities of organisations, such as their understanding of RDI and the risks associated with innovation practice as well as the agency they give their employees to innovate and take part in RDI.

In some organisations, the trust in innovation comes from the very top of the hierarchy, which regularly communicates about it. For their support, they ask their employees for one thing in return; honesty. When things do not work, when individuals are getting stuck, or are struggling, they are asked not to hide it, but to share it with each other. This culture specifically echoes one of the key innovation principles - there are no failures if there is learning.

*The other part of the culture that we've wanted to create, which I think that we have created, is that we're also pretty honest. So when things don't work, we don't hide it, and we're pretty happy to share that things don't work, because often things don't work for a whole host of reasons, and it's very rarely down to the individual who's leading the project. So actually, being honest and open about failure is actually really important. [...] Innovation is, by nature, a bit of a gamble, and hopefully an educated gamble. But it is not easy... And you know, on average, maybe four out of ten projects succeed. So you have to be used to having odds stacked a little bit against you, in order for things to happen. And if you're not then you're in the wrong game. (Pauline, I4-p)*

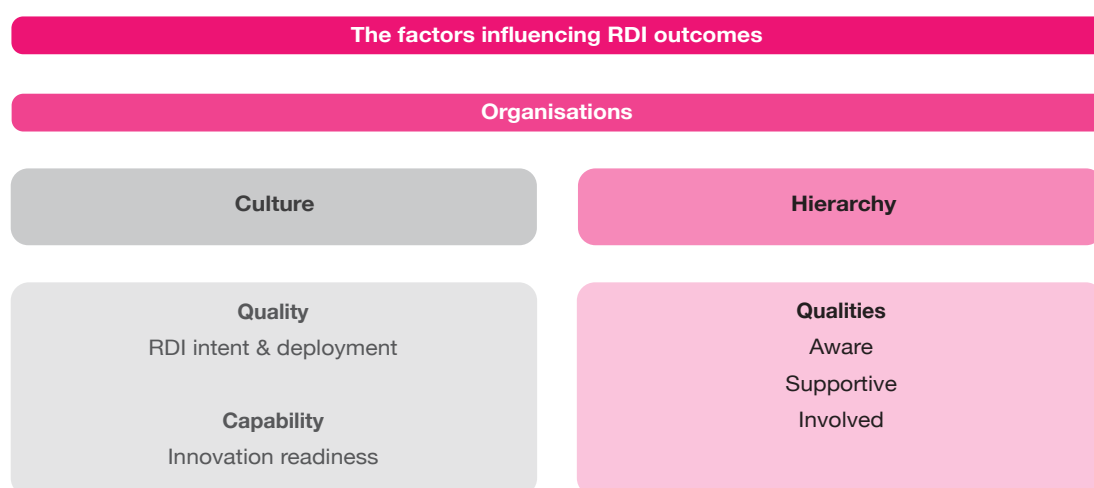
But culture is not solely an organisational matter. Data also showed that individuals present within an organisation are part of this culture and could influence RDI outcomes, specifically, their disciplinary upbringing and their support towards team members.

*Now, I can be rude about them because I'm an accountant, really, but they're not professions that are taught that innovation is a good idea. You know, I always joke that accountants get struck off for being too creative. [...] How we get disciplined for being too creative. Oh, yes - there's a big stick that 'you will not be creative'. And so 'creative' is almost a banned word, or a taboo activity. (D1-p)*

*[Design Facilitator and Design Innovation practitioner's name]'s previous team was very open to innovation and interested in creativity, but other teams aren't necessarily. (X5-o)*

Nevertheless, if creativity and Design Innovation practices are at the heart of an organisation, it is important to remember that not all individuals are comfortable using such practices. A data set contributor emphasised (Y3-o) the need to let individuals decide whether they want to partake in those activities and seven design facilitators (including the research team) reinforced this last point during one of their meetings (U3-o), stressing the necessity to give employees the agency to practice, or not, DI and RDI (T-10-p). If forced by their organisation to engage, it is likely that individuals would be a lot more reticent and a lot less enthusiastic in participating in RDI.

#### 5.7.1.3.2. Hierarchy



**Table 5.19:** 'Organisations' category overview, hierarchy code and sub-codes overview

## Critical summary

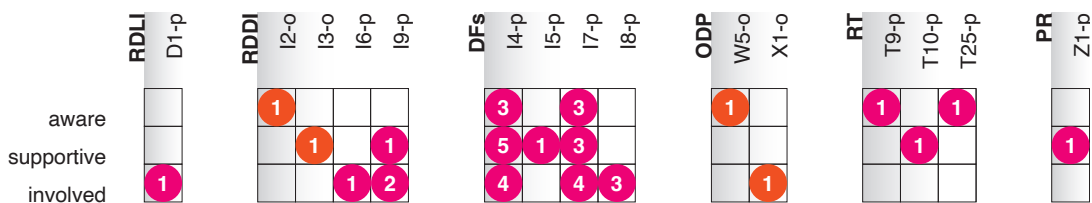
This 'hierarchy' code is particularly interesting as it was mentioned mostly by organisation D, I and P, as well as the research team and data set contributors. Still, there might be few explanations to this;

- *For Organisations A, B, C, F, G and H* - these organisations are too small to even have a hierarchy, most of them being run by one or two individuals. They are therefore not influenced by their hierarchy's support and approval or lack thereof.
- *For Organisations J, K, L, M, N, O* - these interviews were very limited in time and covered the scope of both this doctoral study and Organisation I's study.

There are three levels of hierarchy qualities that influence RDI outcomes; being aware, supportive and involved in the deployment, organisation and participation of RDI. Data showed that these levels are in fact building blocks. A hierarchy aware of such practices, will likely be more supportive of them, and over time will get involved in them.

The hierarchy's attitude towards RDI is an important part of employees' engagement in such activities, and their accountability supports the delivery of purposeful RDI. This last point is interesting as it ensures that RDI fit within a bigger picture and the business strategy.

## Triangulation



RDLI: RDLI participants / RDDI: RDDI participants / DFs: Design Facilitators / ODP: Other organisation practicing RDI, DT & DI / ODP: Other Design Thinkers & Design Innovation Practitioners / RT: Research team / PR: Practitioner-researcher

Figure 5.20: hierarchy triangulation overview

## Qualities

*Aware* - moderate level of confidence

Aware is one of the qualities of hierarchy and relates to two things; the hierarchy's awareness of RDI and Design Innovation practices as well as their awareness of the organisation as a whole. The former, is about the level of understanding the hierarchy has of such practices and their potential for the organisation, which will lead to the support or lack of support of employees in their engagement. The latter relates to the

RDI participants themselves being at a high hierarchical position within the organisation which means a great awareness of its intricacies, which enable greater engagement and depth of the discussion during the delivery of RDI.

*[Design Facilitator & Design Innovation practitioner's name] found that the higher up you go in the organisation, the easier it is to engage with the participants of RDI. The middle roles do not grasp the bigger picture. We need people who have an umbrella view. You are then talking about the same level. How do we understand their jobs? How do people see their jobs? It is about perception and the participant creating their own boxes. (W5-o)*

*MB's previous team was very open to innovation and interested in creativity, but other teams aren't. They also used to have a day per week, or 20% of their working hours, usually on Fridays, that they could dedicate to Innovation Projects. (T9-p)*

#### **Supportive** - moderate level of confidence

After being aware of RDI and Design Innovation practices comes being supportive of such practices. Data indicated the hierarchy's support of RDI and Design Innovation as a boundary condition. However, a supportive hierarchy does not mean an idle hierarchy. Data shows that individuals engaging in RDI and Design Innovation practices still help to account, which creates a healthy atmosphere in terms of business practices.

*I think that innovation only works when you have the buy-in of your senior lead and your senior leadership team. If you don't have that, then it is game over, and you might as well pack up your toys and go somewhere else. (Pauline, I4-p)*

*Managers and team leaders are encouraged to allow their people to go and attend [the Festival] even though it might not seem relevant, because the company recognises that this is a way we can get things done and as much as possible, particularly more so in recent years. (Ethan, I5-p)*

*I certainly don't have a clear path - I have to justify and sometimes use all sorts of different means in order to get what is required, but I think that it's healthy, and I think if I was just given a free run, then that would be not healthy either for me or for the business. So definitely the finance director who's holding the purse has every reason to ask me why I'm spending so much money, and what does the business get for that? (Pauline, I4-p)*

#### **Involved** - moderate level of confidence

Involved relates to whether an organisation's hierarchy directly and actively engages in RDI. Data revealed that the involvement of the hierarchy in the organisation, delivery or participation of RDI could influence RDI outcomes, positively or negatively;

*The fact that you see the top people in the company buy into these things. It*

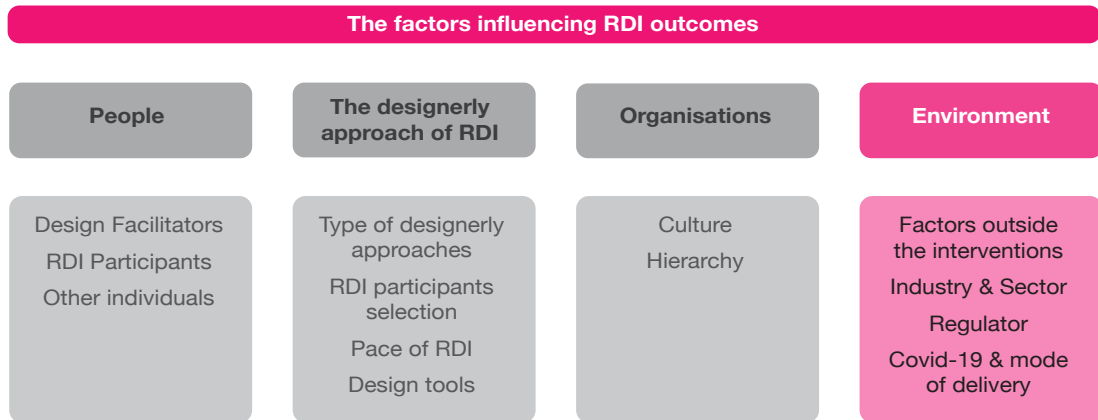


*certainly shows us that no one's too big to make time for these activities. And I know that's kind of an ongoing thing within the company because people you know, we work 365. But it's the fact that they will prioritise it, that made you think; actually, I should probably have it higher on my agenda. [...] Just being able to see these people there, they illustrated our company values. (William, 19-p)*

*The possible losses were time. It was a commitment that I accidentally (if let's say it went really badly wrong) wouldn't get a second chance for. Because [the two employees who participated with Claire] would have just said, 'that was a waste of time and we're not doing it again'. And so that offers risk. And I was a relatively new Chief Exec., and all Chief Execs need to have their team trust them, so I could have lost that, if I'd taken them on something they thought was a waste of time. And it would have created quite a problem dynamic. So it was risky. (Claire, D1-p)*

Indeed, in the context where RDI are *successful* and all goes well, the involvement of the hierarchy is seen as an embodiment of the organisation's values. Here, the hierarchy leads by example, which encourages the rest of the organisation to follow. However, should the RDI be *unsuccessful* or deliver negative outcomes, it could jeopardise the hierarchy's position as leaders as well as the deployment and implementation of RDI in the future.

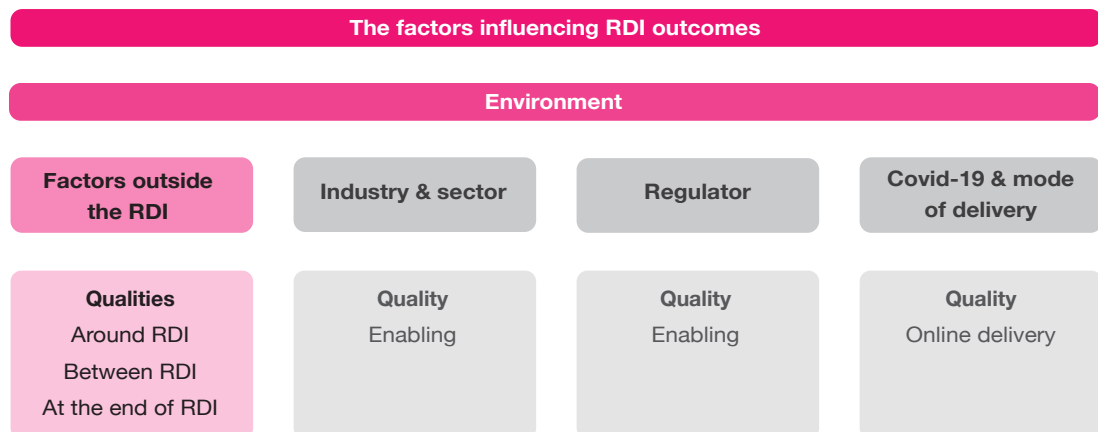
### 5.7.1.4. Environment



**Table 5.20:** Overview of the factors influencing RDI outcomes, including themes, categories and codes.

*Environment* is one of the categories in the *factors influencing RDI outcomes* that is the least supported by data. Overall, it has been discussed in 12 different activities with a total of 23 references. Yet, this category is fascinating as it opens up the enquiry and understanding of the boundaries of these influencing forces. Eventually, this section highlights the fact that the outcomes of an RDI donot solely depend on the individuals present within the room and their organisations, but can also be impacted by external organisations that are not present, such as regulators, as well as by other activities happening outside the interventions.

#### 5.7.1.4.1. Factors outside the interventions



**Table 5.21:** ‘Environment’ category overview, ‘factors outside the RDI’ code and sub-codes overview

## Critical summary

Rapid Design Interventions are often perceived by participants as a definite point in time, with a beginning, a middle and an end. However, data showed that there can be things happening around, between and at the end of RDI.

This category has been mentioned by DFs and participants of both RDDI and RDLI. However, data shows that what happens outside these RDI varies depending on the approach of the intervention. In the context of RDDI, the Festival provides participants with activities to stimulate their thinking and creativity, which are necessary for idea generation and the development of new products and services. For RDLI, the interventions are more of a journey through which participants, who often in the case of GRTI embodied their business, (or at least had a big influence on it), try to get as much as possible from the little time available.

## Triangulation

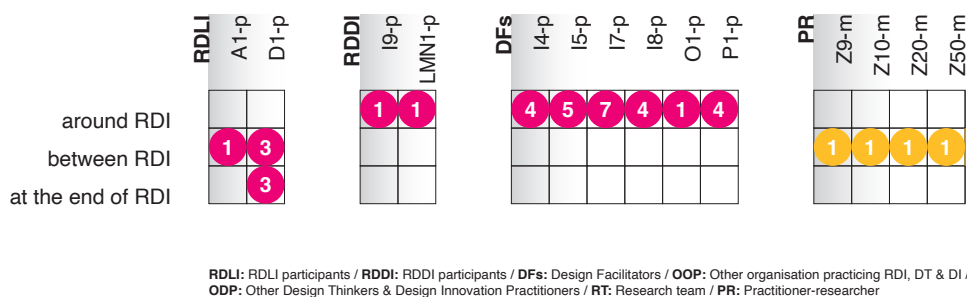


Figure 5.21: 'Factors outside the RDI' triangulation overview

## Qualities

### Around RDI - low level of confidence

Data collected in the context of the Festival organised by Organisation I, shows that other activities carefully planned and curated around the RDI can influence their outcomes. Based on the conversational interviews with the Innovation Team at Organisation I, these other activities can be organised in two different categories; inspirational and relaxing.

#### The inspirational activities

The morning 'welcomes' first thing in the morning, before the beginning of any RDDI, aim to bring delegates together and set the tone for the day (I5-p). The 'sponsors' talks' and 'lightning talks', usually delivered by celebrities during the day, are there to add to the excitement of the festival (I6-p). These talks are not picked at random. Rather, they are carefully selected and speakers are invited because of their connections with the spaces the RDDI will investigate, and their

talks are curated to inspire the delegates (I8-p). Equally, the demonstrations, technology showcases and suppliers exhibition are not solely there for the sponsors to promote their work.

#### *The relaxing activities*

The Festival provides delegates with a wide range of relaxing activities, such as comedians, juice bars, food stalls, pub quizzes, massage and yoga (I6-p). According to Lee, these activities were put in place by Organisation I because “participants and delegates are giving us time, so we have a duty to take care of them” (I7-p). They work hard during the RDDI, but these relaxing activities help them to feel a bit better about themselves, which allows them to be more creative and present during the RDDI (I5-p).

The inspirational and relaxing activities are a part of “giving back” to the participant for their time and contribution, but also break down their daily routine (I7-p). They enable the participants to be in the moment as it is when an individual is out of their comfort zone or laughing that they have the best ideas. Although these activities may seem just fun, they are in fact not as frivolous as they seem. They are part of the strategy that takes people’s brains into play spaces which aid the creative process necessary for RDDI and other innovation activities (I5-p & I8-p).

These activities *around* the RDDI allow participants to get inspired and initiate conversations concerning the RDDI, but also to create an atmosphere where participants are comfortable with one another (I5-p & K1-p). For example, magicians and other performers are there to create bubbly energy in the room and encourage RDDI participants to “ask themselves how would a magician solve this problem?” for example (I7-p). However, it is essential to note that DFs had a more nuanced view of these activities around the delivery of RDDI. As discussed above, they indeed enabled the process and sparked creativity, but on occasions, they became disruptive and hindered progress.

*At times, it’s great, because somebody comes in with this, they’ve been inspired by the morning talk, they’re fired up or they’re in the creative mindset. So day one, that’s that excellent. By day two or three that’s distracting, or they’re expecting that element to continue for two to three days. So I’m not saying it’s right or wrong. I guess I’m just giving you my feedback.*

*As a facilitator, that makes it quite difficult. [...] You can send people for a coffee break and see you back in 20 minutes, and they come back roughly in 20 minutes. If they don’t, you can go and hunt them. [...] Here, people aren’t back because they inevitably get caught up in a conversation with somebody else. [...] It’s like herding cats at times. [...] [So] it breeds creativity and all of that. But it comes with complications. (Eugene, O1-p)*

### ***Between RDI - low level of confidence***

Even if it is less supported by data, data collected in relation to GRTI (RDLI) which is delivered by, on average, one three-hour session per week, for four weeks, show that this format allows for things to happen between interventions; DFs worked, reflected and prepared the next session while participants “brainstormed”. However, some participants highlighted that it was difficult to know what DFs did between sessions. They would reveal this at the beginning of the next session, which was at times perplexing for the participants;

*The first session is quite confusing because you don't get anything back, so you just talk and talk and talk. And they write it all down and they scribble away, but you've no idea whether you're talking nonsense or not. And then you go away (and I can't remember the order) but when you come back they go: 'and we've done this!' and you go, 'wow! How did you do that?'*

*They go 'tada! We made this!', again, it's a big shock. And [you think] 'oh, right, I've got to absorb this new information, now.' And they were gonna do another intensive session! So it was very hard to know what was going on when we weren't in the room. (Claire, D1-p).*

The fact that DFs worked between sessions and came back the following week with something new that made sense of the conversation helped building trust with the participants. On their end, having been stimulated during the sessions, participants used the time between the sessions to brainstorm which made them feel enthusiastic about their work.

### ***At the end of RDI - low level of confidence***

Still in the context of GRTI, when came the end of the RDLI, some DFs offered participants a tour of their studios to help them see how they work on a daily basis. Equally, participants asked DFs for a lesson on Design Thinking to make sense of the process they had just been through. Doing this sparked an interest for the practice in some participants, but also helped them better understand the process they had just been through.

*Which is why at the very end, we were asked if we wanted the tour. But we also asked, basically, for a lesson in Design Thinking, because we were trying to make sense of what they were doing. [...]*

*And also, I knew all we were going to get was twelve hours, and yes they may have solved our problem, but also, I was trying to quickly grab all the information I could, to enable us to absorb this way of thinking. And because they didn't tell you [what they were doing] as you went, in the final two hours I was going 'explain again what you just did!' It was like watching a magician saw the lady in half - that's the best way to describe it; it was a bit like a magic show. (Claire, D1-p)*

5.7.1.4.2. Industry & sector

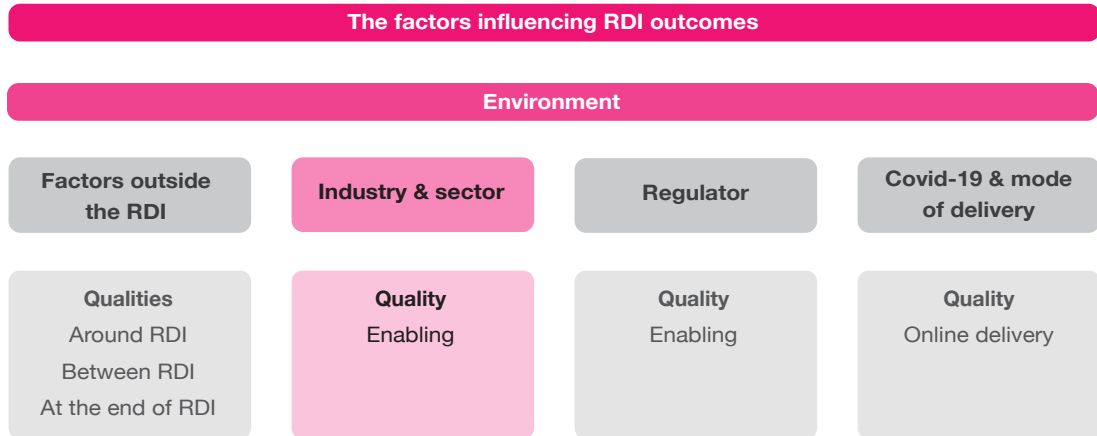
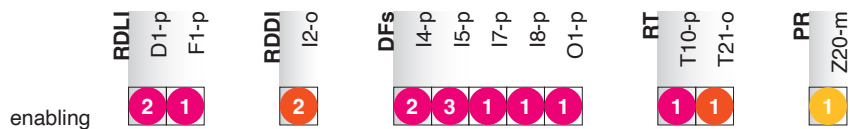


Table 5.22: ‘Environment’ category overview, ‘industry & sector’ code and sub-code overview

**Critical summary**

The ‘industry & sector’ an organisation belongs to can either push or restrain them from being innovative and creative. In two different ways, data collected in relation to Organisation F and Organisation I show that the industry and/or sector they belong to are encouraging them to become more innovative. Whether it is about standing out from the competition, or giving the best they can to their users and customers, setting in both cases a context supportive of RDI and other Design Innovation practices. On the other hand, the rigid and rigorous practices in Organisation D’s industry set a context that made innovation practices more difficult, but not impossible, as Claire demonstrated in this study.

**Triangulation**



RDLI: RDLI participants / RDDI: RDDI participants / DFS: Design Facilitators / OOP: Other organisation practicing RDI, DT & DI / ODP: Other Design Thinkers & Design Innovation Practitioners / RT: Research team / PR: Practitioner-researcher

Figure 5.22: ‘Industry & sector’ triangulation overview

**Quality**

*Enabling - substantial level of confidence*

The industry and sector an organisation belongs to can hinder, or be supportive of Design Innovation practices and the delivery of RDI. If not all industries are supportive

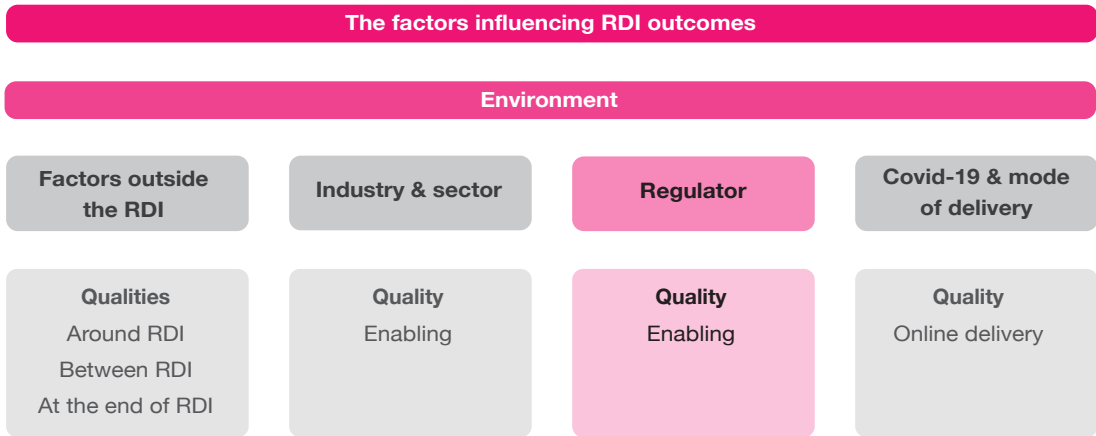
of creativity and innovation practices;

*I've [already] joked that we're not allowed to be creative accountants [as] we're not really taught to fail. It's really hard for us, because we are trained in very precise answers and very precise rules, and 'selling' doesn't really fit with that. [But] we're trained in a lot of ethics, and that's probably a means of me selling, but not feeling ethically compromised. (Claire, D1-p)*

Some industries, such as the beauty industry, are very competitive, which pushes organisations to find ways to stand out from a very saturated market and separate themselves from the competition in order to survive and thrive. It is with this intent that Violet signed up to GRTI-US and attended her first RDLI (F1-p). Supporting this, Pauline (I4-p) discussed how the rewards they get from their regulator not only depend on their performance as an organisation, but also on the performance of other companies in the industry. No matter how well they are doing, if other organisations are doing better, then it sets a threshold where Organisation I are actually doing poorly in comparison.

Organisation I's way of dealing with this type of competition is unique. Indeed, when they first started the Festival, they invited another utility company from their sector to attend the Festival, which they did. Five years later, all UK utility companies from their sector, along with foreign utility companies, are taking part in the Festival and RDDI delivered there. (I2-o, I8-p, J1-p, I9-p). This has led to a real culture of innovation in the sector where all organisations are trying to do things differently and better, together (I2-o, O1-p).

5.7.1.4.3. *Regulator*



**Table 5.23:** ‘Environment’ category overview, ‘regulator’ code and sub-code overview

## Critical summary

This *regulator* code is very interesting as it evidences the potential influence of external organisations on the outcomes of RDDI. Indeed, by making innovation compulsory for all organisations in their sector and setting up financial resources for innovation projects, they establish an environment supportive of innovation practices. As a result, employees from companies in the sector they regulate are likely to feel more empowered and motivated to actively participate in RDI and help their organisation in achieving some of their innovation goals.

It is essential to note that this code was solely discussed in the context of Organisation I, which participated in RDDI. However, we can speculate that ‘regulators’ don’t only influence RDDI, but all RDI, as their influence on the outcomes depends on the nature of the organisation (monopoly & utility in the case of Organisation I), rather than the type of intervention delivered. Nevertheless, it raises an interesting point regarding the potential influence of other regulating bodies such as national governments and local authorities on the RDI outcomes of all types of organisations.

## Triangulation



**Figure 5.23:** ‘Regulator’ triangulation overview

## Quality

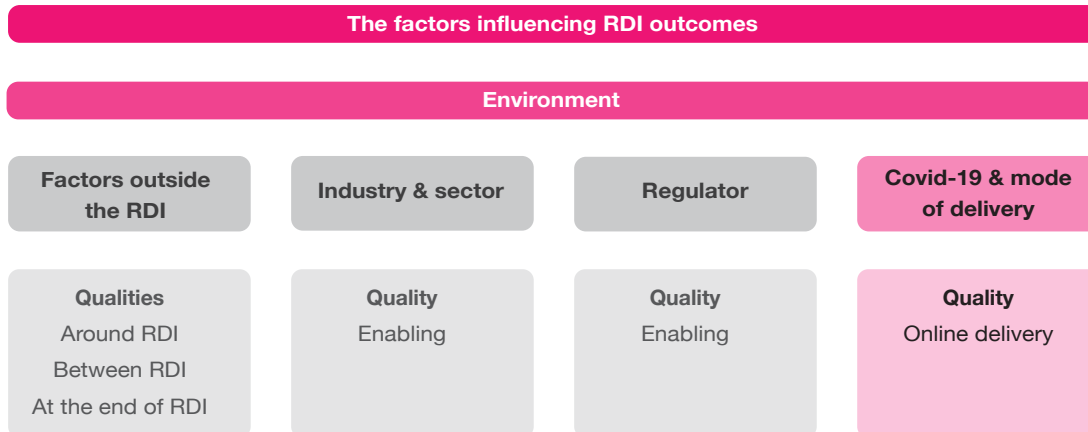
*Enabling* - low level of confidence

Although there is little evidence about this in the data set, it appears that regulating bodies have the potential to influence the outcomes of RDDI. Data showed that when an organisation has a monopoly, their sector is regulated and their actions highly scrutinised. Therefore, there are many rules around how they can operate, earn, and spend money because ultimately, it is customers’ money (I4-p). Recently, Organisation I’s regulator made innovation compulsory, and released an innovation fund to support this. This allowed all organisations in their sector to enter innovation bids and competitions (I2-o, I5-p & T21-o).

*Quite often our thinking these days, is our regulator [regulator’s name]. They run a an innovation competition with a fund. And so we’re sort of selecting certain of the Sprints and identifying them as potential projects that could come out of that Sprint that we could then apply for funding from the offer competition. (Ethan, I5-p)*



5.7.1.4.4. Covid-19 and mode of delivery



**Table 5.24:** ‘Environment’ category overview, ‘Covid-19 and mode of delivery’ code and sub-code overview

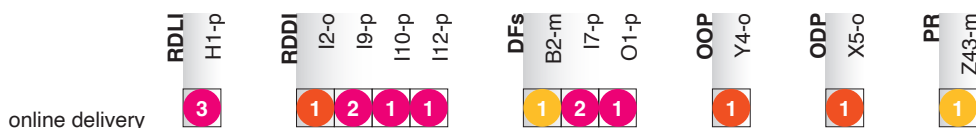
**Critical summary**

Moving from face-to-face to online delivery of RDI had quite a big impact on the way of delivering RDI. Unlike their usual practice, DFs had to react to the situation as opposed to being proactive; having to quickly learn and adapt to this new mode of delivery. It was an iterative learning curve.

‘Covid-19 & mode of delivery’ was not mentioned at all by the participants in the first rounds of GRTI, as the interventions were delivered face-to-face, prior to the Covid-19 pandemic. Conversely, participants attending RDI in 2020 and 2021 were particularly impacted, even if they felt that everything was done by DFs to adapt to this context by offering an online or a hybrid delivery of the RDI.

However, the remote delivery of RDI was sometimes a blessing, or an unforeseen positive aspect of RDI, allowing individuals from around the globe to attend the same intervention, and also sometimes removing the influence of ‘other individuals’ in the room.

**Triangulation**



RDLI: RDLI participants / RDDI: RDDI participants / DFs: Design Facilitators / OOP: Other organisation practicing RDI, DT & DI / ODP: Other Design Thinkers & Design Innovation Practitioners / RT: Research team / PR: Practitioner-researcher

**Figure 5.24:** ‘Covid-19 and mode of delivery’ triangulation overview

## Quality

### *Online delivery - substantial level of confidence*

Covid-19 & mode of delivery is an influence that was unforecasted when this study started in October 2019. The Covid-19 pandemic forced many organisations to adapt overnight and shift from a face-to-face to an online delivery of RDI, which was the case for both GRTI-US (RDLI) and for the Festival (RDDI). DFs had to rapidly learn how to use online facilitation tools such as 'Mural' and 'Miro' and adapt their interventions to this new mode of delivery. If this has allowed participants from all over the globe to take part in RDI, it also raised the issue of the time zones. Sometimes, solutions were found with a morning and an evening overlap between participants when running continuous RDI for a few days, but it made it difficult to get all participants' heads together with a similar level of engagement and energy than to being together in the room.

Some, like Organisation I, found ways to inject energy behind people's screen, by sending them a festival box in preparation of the Festival containing the Creative Confidence book by Tom & David Kelley, tea and coffee, chocolate, a reusable mug and bunting.

This box gave the participants a sense of belonging and festival atmosphere, although not equalling the feeling of being together in a room. This was emphasised by RDI participants and facilitators expressing that they missed being together in the same room. Further, it made the DFs' work harder, removing the possibility of observing the participants' non-verbal communication and acting upon it.

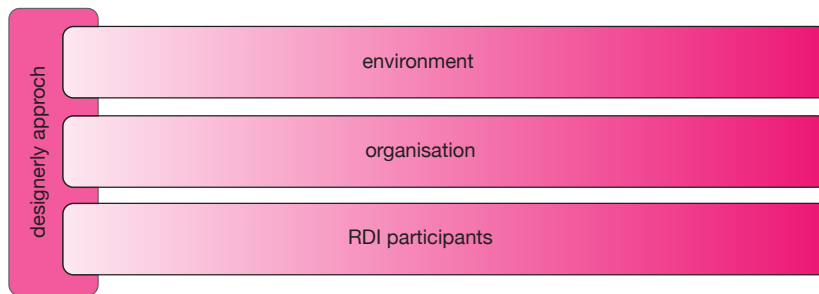
*From a personal perspective, I didn't enjoy it anywhere near as much. I think as a facilitator, you learn to interpret the room. You can get that body language that you don't get [online], it's just way better being in a room. You can engage people, more productively, they enjoy it more, you can do things for longer. You don't have to break the deal. So yeah, it's just not as inspirational. (Eugene, O1-p)*

However, the Covid-19 pandemic might have had a positive influence on the RDI outcomes in some cases. Indeed, in 2021, I delivered, with *The Blooming Platypus*, a face-to-face RDDI. As lockdown rules only slowly lifted, the client was unable to attend in person and only joined us online for the brief and the final presentation. Reflecting upon it, this client questioned (Y4-o) how critical the RDDI participants would have been if they had been there sharing their thoughts, views and opinions. The client believed that their absence certainly gave the freedom to participants to challenge them and build an independent opinion.

### 5.7.1.5. Summary of the factors influencing RDI outcomes

In this section, I have presented the factors influencing RDI outcomes; people; the designerly approach of RDI; the organisation of the RDI participants; and the environment in which the organisation and the RDI operate.

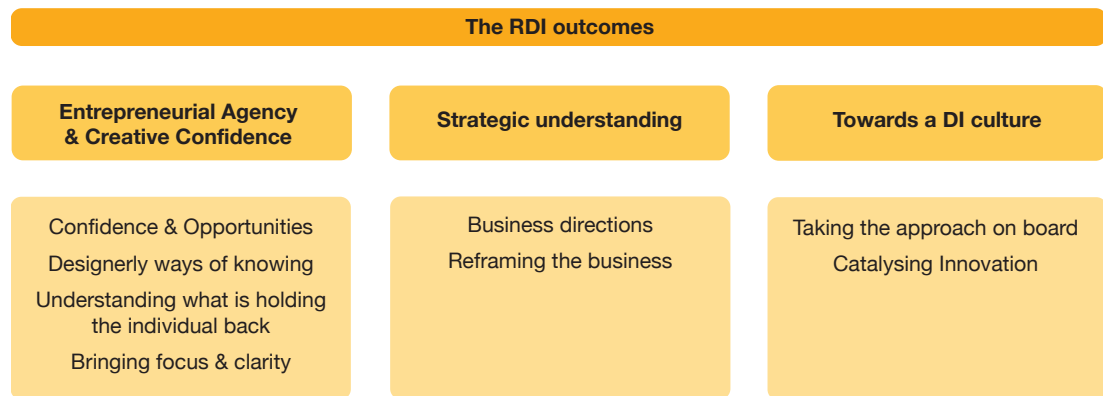
However, it is essential to highlight that the designerly approach of RDI is crucial here, as it is embedded within Design Facilitators and it is the reason why these interventions are design interventions, as opposed to any other type of intervention. If all these factors influence the RDI outcomes, the capability of people, organisation and their environment to embrace a designerly approach of RDI will greatly impact the RDI outcomes and the level of outcome reached by the participants and their organisation.



**Figure 5.25:** Summary of the factors influencing RDI outcomes.

### 5.7.2. The RDI outcomes

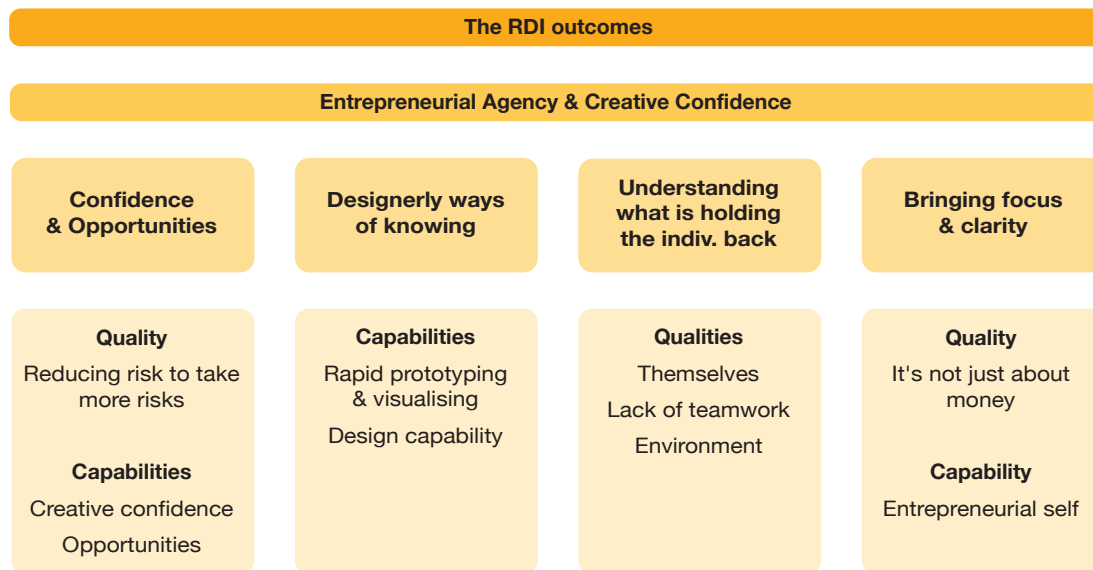
Rapid Design Interventions were proven to be valuable by the research participants and data set contributors in helping RDI participants develop (1) an entrepreneurial agency and creative confidence, (2) a strategic understanding of their organisations and supporting organisations (3) towards a Design Innovation culture. This section, is structured as follows;



**Table 5.25:** Overview of the categories and codes included in the RDI outcomes.

### 5.7.2.1. Entrepreneurial agency & creative confidence

‘Entrepreneurial agency & Creative confidence’ is the most important category of RDI outcomes. It is present in 51 activities with a total of 372 references in total. This category is very interesting as it relates two different capabilities to one another; entrepreneurial agency and creative confidence. The former is about the capability of an individual to adopt a more entrepreneurial attitude to innovation and experimentation. The latter refers to the capability of an individual to come up with novel ideas and act upon them. This category, will be presented as follows;



**Table 5.26:** Overview of the factors influencing RDI outcomes, including themes, categories and codes.

#### 5.7.2.1.1. Confidence & Opportunities

##### Critical review

‘Confidence & Opportunities’ is one of the most prevalent codes in the data. However, it is important to emphasise that in cases where data came from RDI outputs, it was not always possible to clearly identify whether RDI participants were referring to ‘feeling more confident in the future’ or creative confidence, as it was not possible to go back and ask further questions to the participants, having already been anonymised (S3-o). Therefore, some of the data about confidence had to be disregarded.

Confidence & opportunities relates to RDI participants better understanding how to reduce business risks while taking more calculated risks, which is supported by their enhanced creative confidence and capability in recognising, assessing, exploring and exploiting opportunities. Specifically, reducing risks to take more risks builds upon the participants’ increased focus and clarity about their entrepreneurial self (5.7.2.1.4,

p. 192) and their potential and preferred futures (5.7.2.2.1. Business directions, p. 196). Mostly, it relates to individuals prioritising their long-term vision and identifying the milestones that enable its realisation. Overall, it focuses on learning and building knowledge to take calculated risks in the future.

Creative confidence directly addresses the enhanced capability of RDI participants to come up with novel ideas and implement them. Enabled by the rapid and intense approach of RDI (5.7.1.2.3. Pace of RDI, p. 154) is where trust and rapport have been built, it is a first step towards developing designerly ways of knowing. Indeed, it makes the participants more comfortable about ambiguity and more willing to share “half-baked” ideas with the rest of the group, enabling collaboration and co-creation.

Opportunities were mostly mentioned in the context of RDLI, which is understandable as these questions were mostly asked in the context of GRTI-US. In addition, RDLI investigate business opportunities, or identification of opportunities. They are explorative and strategy-oriented. While more participants mentioned recognising opportunities, less discussed exploiting opportunities, but with more occurrences. This aligns with the data, which showed that participants are “supercharged” after identifying opportunities and cannot wait to start working on them.

### Triangulation

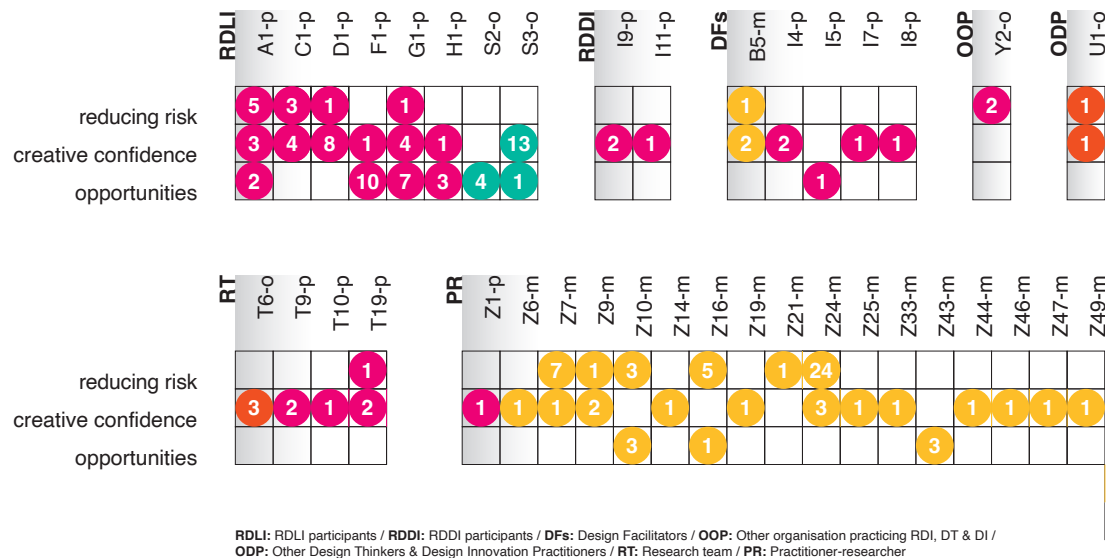


Figure 5.26: 'Confidence & opportunities' triangulation overview

## Qualities

### *Reducing risk to take more risks - substantial level of confidence*

Reducing risk to take more risks relates to the interventions providing RDLI participants with practices that enable them to reduce the risk in which they put their organisations, while taking some (calculated) business risks. The most important outcome allowing this to happen, is participants understanding the real value of constructive feedback and the need to talk to their customers, users and stakeholders to receive such feedback, as opposed working in isolation and getting feedback from their family. Testing stakeholders' opinions and perspectives early in the process means that participants can develop products, services, or systems in line with what the customer actually wants and needs.

*I might have said at some point 'oh, I ask my Mum all the time!' Because it's easy when you have a Mum who's in the industry, to just go to your Mum. She's literally working in UX, so I could just go to her and be like 'Mum, what do you think of this?' And it's very easy, because I know that she's got that knowledge, but at the same time... she's still my Mum, and she's still gonna be biased even if she tries not to be. (Layla, C1-p)*

*I would probably say that I used to just go to my Mum for an opinion [...], whereas having done GRTI, and from having different people around and getting different opinions, I realised that it's actually quite important to [...] ask the customer, rather than asking somebody who's close to me. I found that it's more important to find out what my customer wants. [...] So you've seen my new product. [...] And though they're all friends, I've put [the product] in a [focus] group with mums. And they've come back to me saying, 'oh, could you change this and could you reword that?' to make it a bit more accommodating for their children. [...] But getting their feedback was really important. (Grace, A1-p)*

Further, by using these practices to mitigate risk, RDLI participants start prioritising a long-term strategy. Indeed, data showed that some participants took some interesting directions in order to achieve some of their long-term visions, whether it was closing down their business, or taking on another job, for example. By prioritising these visions, they reduced the immediate risk on their organisations, and took on a learning journey which will eventually make them better equipped to innovate and therefore take risks further down the line.

*MB asked them if they used the cover as an opportunity to experiment a little bit with some of the things they were thinking about for their enterprise whilst being on somebody else's payroll. And they definitely did. They have been taking some risks to try out new ideas while lowering the risk for their own business. (Y2-o)*

*GRTI seem to help participants put strategies and mindsets in place, so they can lower the risk for their own businesses while taking some calculated risks. (Z16-m)*

*'Make you talk about things that didn't work in a positive way', shifting the mindset from failure to learning. Also, with the different iteration, it allows you to slowly build something that works, getting some bits right, some wrong which teaches you something that you can apply in the next iteration. 'It makes it less intimidating'. (Z24-m)*

## Capabilities

**Creative confidence** - outstanding level of confidence

Creative confidence is very well supported by data, which showed that by the end of the RDI, many participants had an enhanced creative confidence. Specifically, they felt less constrained and more able to come up with new ideas that they could articulate. A great sign of this is individuals stepping out of their comfort zone to contribute to and engage in the activities.

*[They] have conversations [where] they would say: 'I never knew I was creative, I never knew I was able to do this' - they were willing to contribute in [the] light. So when you're doing an exercise, they were no longer cowering under the desk, hoping you wouldn't pick on them, you know - they were readily rushing up with their poster and getting actively involved. (Pauline, 14-p)*

*The one thing I think I was just nervous about was not knowing what to say, or like being nervous to say what I thought, but I mean after three days, you lose all those fears. You're friendly with everyone. You know, you just throw out your voice. If it's a good idea, if it's a bad idea, everyone just wants to listen. (Jack, 111-p)*

Further, data evidenced that RDI are like a motivator. They are a means to helping people adapt and believe that they can innovate (D1-p). By enhancing individuals' creative confidence, Rapid Design Interventions not only improve the ability of individuals to come up with novel ideas, but also implement them. This improvement was noted by many Design Facilitators and Design Innovation practitioners and if the research participants did not employ the term creative confidence directly, they most definitely described such behaviours as a result of the RDI.

*They keep coming. It's an overflow. Oh, my gosh. I don't have words to describe the way I feel about what you did. [...] Like I said, the ideas keep flowing. I have a little hand jar that I purchased. [...] And in the middle of the night, last night, I could not sleep because from our sessions, things were just flowing, so I had to write them down. [...] It definitely turned the light on. [...] I told you what I was going to do. I'm going to lay it all out, I'm going to plan it all out, and things will be happening. These will be action items. This is nothing to plan in seconds, it's for next year. These will be all actionable items. And the graphic [design] part is something I can definitely make sure it happens. (Emelia, G1-p).*

However, if some participants greatly benefit from enhanced creative confidence, it



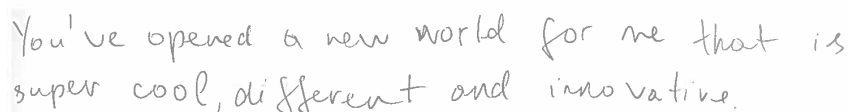
is important to consider the initial level of their creative confidence. William recalled, during our conversational interview, that his experience as Design Lead for a Design Sprint (RDDI) with college students from sixteen to eighteen years old as part of the Festival was very different to the usual Design Sprint with adults (I9-p). In his opinion, it was a bit “less filtered”, “more blunt and honest”, and “less constrained” with ideas. Whilst leading the intervention, he discovered a creative side he rarely got with adults, as students developed incredibly complex crafts and prototypes in a very short amount of time.

Data highlighted the role creative confidence can play in the wider dynamics of an organisation, as individuals who are getting more confident often take with them their close collaborators and team mates. Discussions with the research team emphasised that creative confidence is closely related to vulnerability and risk (T19-p, U1-o). By sharing their ideas, individuals (and businesses) expose themselves and take the risk of being judged by others. But data shows that the perception of that risk is related to the individual’s perception of the value of their idea and whether it should be shared or protected. By becoming more creatively confident, individuals realise that coming up with novel ideas is not a problem and that it is the implementation of those ideas that matters. As a result, they become less precious about their ideas, and more inclined to collaborate and share ‘half-baked’ ideas with the rest of their team.

*What I offer to those significantly younger than me, is the value of a half baked idea. But so I grew up coding. And when you're, when you're a coder, your mindset is no one can break your code, right? I mean, you try and make sure that your code is robust that you think of every possible scenario user might do this, a user might do that.*

*This could happen that and you it's complete is complete and if somebody if you bringing your code into a room or something, and it is incomplete, it's embarrassing, right? And I think that engineers tend to live by that principle wherever they do their engineering. And I think understandably, it's that kind of a human nature thing. [...] But I think what I've done is I've put something on the table that was just half thought through. And what that did is it allowed other people to add to it, and allow people to own it. (Lee, I7-p)*

Overall, creative confidence is about the RDI participants becoming more familiar and comfortable with uncertainty, which unlocks the their innovation potential.



You've opened a new world for me that is super cool, different and innovative.

**Figure 5.27:** GRTI-A participant answer to the question ‘How have you changed’?

### **Opportunities** - substantial level of confidence

Opportunities relates to business possibilities for an organisation, and the capability of an individual in recognising, assessing, exploring and exploiting opportunities. Data around this theme was gathered in the context of RDLI specifically, and many participants have admitted that the interventions have improved their capability in recognising opportunities, whether or not they already knew how to.

*A part of my job has always been to spot opportunities, which I think kind of helps me. I used to do it like when I worked in entertainment, but also like an event that came to us, and the kind of available, see if something was a thing or not stay in the market. So I had some experience with them, but I think for me it helped me. (Miles, H1-p)*

*I am able to recognize opportunities and also various partnerships that could be beneficial. (Violet, F1-p)*

Once opportunities are recognised and ideated around by the participants and the Design Facilitators, data highlighted that participants became more critical of these opportunities and assessed them more carefully than before. Here, participants are probing and filtering opportunities, and deciding which ones hold the most promise.

*But even within the opportunities to just be able to see which ones make the most sense to do a certain period of time. (Miles, H1-p).*

*I've learned and reinforced my listening and idea analyzation methods/skills. (S3-o)*

Further, RDLI have made participants more able to strategise and focus on their long-term vision, which enabled them to exploit these opportunities. For some participants, this outcome was quite profound and has changed their behaviour in some regards pushing them to act upon the work done during the interventions.

*JCW: Do you feel like you are able to realign your resources to exploit those ideas, if it is needed?*

*Emelia: Oh, I'm definitely supercharged. Yes. There are some things I feel a little anxious about, if I have the ability to because now that I'm going to be switching some things around and adding some things. [...] So, I get a little nervous about that, and wanting it to look good, and wanting it to be right. But I have the ideas and the energy behind it to start now. [...]*

*JCW: So, what do you think is holding you back at the minute?*

*Emelia: Nothing is holding me back. We will be moving on this, starting Friday. (G1-p)*

However, it is important to note that not all GRTI participants noticed a change in

their approach towards opportunities. A data set contributor specifically mentioned that they had not learnt how to recognise opportunities, and would not anyway until they needed to pivot because of their environment (Z43-m).

5.7.2.1.2. *Designerly ways of knowing*



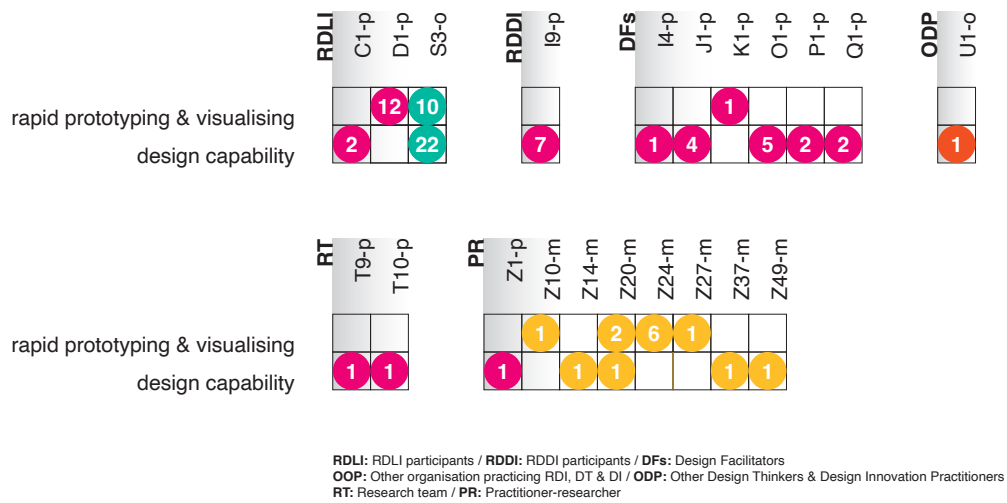
**Table 5.27:** *‘Entrepreneurial agency & creative confidence’ category overview, ‘Designerly ways of knowing’ code and sub-codes overview*

**Critical review**

‘Designerly way of knowing’ pertains to the development of a design capability through rapid prototyping & visualising. By quickly sketching an idea, or creating a product for example, the participants and the Design Facilitators can have a global view of what it could look like. It is about embracing the designers’ world of abduction, before critically assessing the idea, concept, or enterprise, as a team. Through their active participation and engagement in RDI activities (5.7.1.2.3. Pace of RDI, p. 154), participants develop their design capability. By doing so, it allows them to take such practices back with them to their day-to-day job role.

If designerly way of knowing is well represented within the data, it is slightly more prominent in the context of RDDI. A plausible explanation is that when delivering RDDI, and specifically a Design Sprint, the process is made very obvious to the participants, which could enable greater absorption of it.

## Triangulation



**Figure 5.28:** 'Designerly ways of knowing' triangulation overview

## Capability

### *Rapid prototyping & visualising - moderate level of confidence*

Data evidenced through the delivery of RDI, shows that participants learnt rapid prototyping & visualising to different ends; to communicate an idea, to test an idea with stakeholders, or to verify that they correctly understood what was said. By doing so, they saved on often limited time and financial and human resources, but also learnt from their mistakes and failures quicker, which allowed them to learn, refine and further iterate their ideas.

*To craft the numbers is amazingly elaborate work. And if it's just a concept and a sketch, you can knock it up quite quickly and find out what the problems are with it, and how to fix it, and things like that. So that's one of the other things I learned from this willingness to make a quick sketch; and it almost didn't matter how homemade it looked. Because it's just a means of translating the contents of my head into something we can discuss. (Claire, D1-p)*

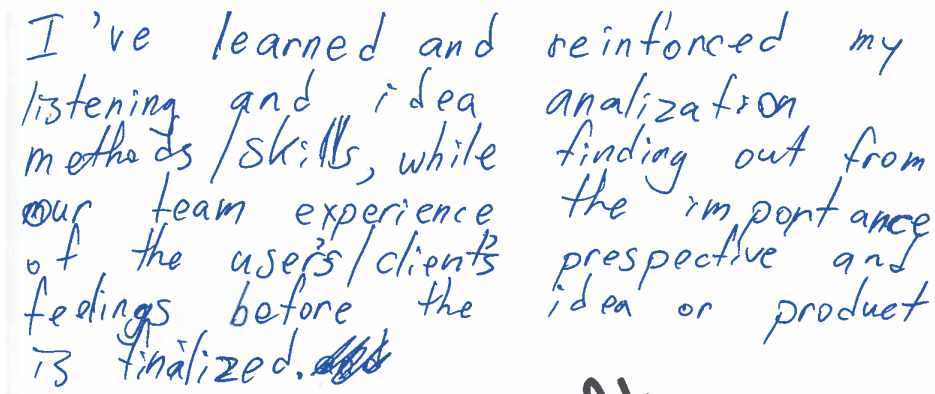
Through the learning of rapid prototyping & visualising, participants indirectly discovered some of the templated tools used by designers, such as the 'business model canvas' or the 'lean canvas' (S3-o), which allow them to prototype and detail an idea and/or an enterprise.

### *Design capability - substantial level of confidence*

By participating in RDI, data showed that participants started building (or improved) their design capability. Specifically, they understood the importance of gathering multiple perspectives to assess, challenge and build upon their ideas, but also to explore

other potential solutions. Through this, they realised the importance of teamwork in the design process, and the necessity of working together, as opposed to working in isolation.

*I know from doing things like GRTI, that [other people's perceptions are] really beneficial. And in the long run, you want all these perspectives, and you want people to give you their feedback because otherwise, you're just going to be working based on assumption again, and that doesn't ever end well. (Layla, C1-p)*



I've learned and reinforced my listening and idea methods/skills, while our team experience of the users/clients feelings before the idea or product is finalized. finding out from the importance perspective and

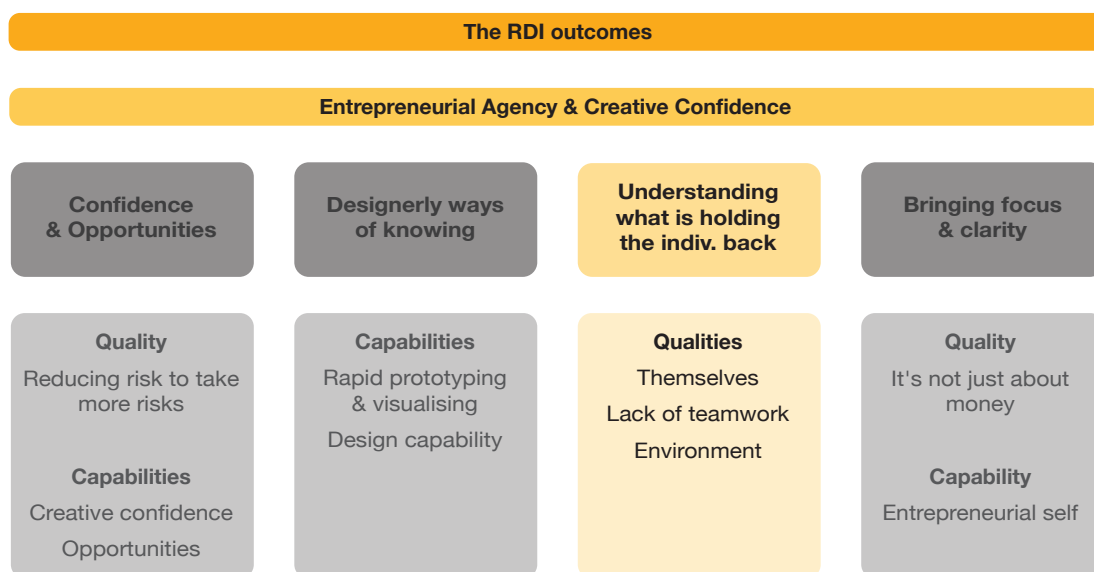
**Figure 5.29:** A GRTI-A participant's response to the question 'What have you learned?' (S3-o)

Furthermore, RDI were a great opportunity for participants to learn about creative problem-solving through design practice, which in some cases made them work in a different way. RDI were proven to be helpful in raising awareness about these kind of practices, and in helping participants to learn more about Design Thinking. As a result, when participants return to their day-to-day work activities, and when a challenge arises, they might decide to employ such practices to address it.

*[William speaking from a young person perspective:] 'We give up like a week of our time but then I can put down my CV and it looks good because I've got new skills and I've learned new ways of working.' [...] I think they will realise the benefit maybe when they come to like a problem-solving situation in work in the future. This sort of behaviour and way of working will come up, the ability to work with others in a team to be able to network and to speak to other people and gain that knowledge. I think those skills will all kind of come out and be beneficial. But I'm not sure that they're actually that aware that they're going to gain those skills from the week when they come. (William, I9-p)*

*I think it's not all of us think, with an innovation mindset. But if we can, if we can flick a switch with somebody who might be in an engineering role, or in a lab role, whatever it might be, if we can flick a switch with them to think, is this the best way of doing this? Then we've achieved something. And that's what I feel the festival does. (Eugene, O1-p)*

5.7.2.1.3. *Understanding what is holding the individual back*



**Table 5.28:** *'Entrepreneurial agency & creative confidence' category overview, 'Factors outside the RDI' code and sub-codes overview*

**Critical review**

'Understanding what holds them back' is a key code highlighting the identification of key challenges and barriers to progress as an outcome of RDLI. These fall under three codes; themselves, lack of teamwork and environment.

In many cases, data showed that in SMEs with limited financial resources, individuals do not delegate and become consumed by day-to-day activities, working in the business rather than on the business, as a result of a financial imperative.

'Understanding what is holding the individual back' was only mentioned in the context of RDLI, there are two probable explanations for this;

- RDLI are deeply introspective interventions, delivered in a small committee where trust and rapport is built by the DFs with participants, which enables honesty and the sharing of confidences. There, individuals have open-hearted conversations.
- Questions asking the participants directly if they had identified what was holding them back were only asked in the GRTI 1-2-many reports and during the GRTI-US interviews.

## Triangulation

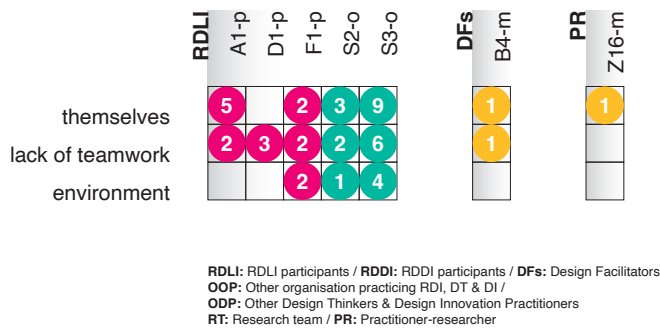


Figure 5.30: 'Understanding what is holding the individual back' triangulation overview

## Qualities

### *Themselves* - moderate level of confidence

Most of the data in understanding what is holding the individual back is about the individual. Indeed, data showed that participants are often putting some barriers up for many different reasons; the task needed for progress is boring, they have a gap in knowledge in achieving the task, they don't believe in themselves or in their idea, or because they are consumed by their day-to-day business activities, for example.

*The one thing that I put on hold the most was the instructions, because I didn't want to write them. (A1-p)*

*I feel like I've just said this because I've been doing this beauty thing for so long. There's that part of me that doesn't want to relinquish some of the things that I've been doing in the past to give those up and to look at something different. So it's kind of like holding onto the past, but you need to really let it go. (Violet, F1-p)*

*Think that it's impossible.*

Figure 5.31: A GRTI-A participant's response to the question 'What must you not do?'

### *Lack of Teamwork* - moderate level of confidence

RDLI have also helped participants realise that their lack of teamwork was hindering their organisation's progress and growth. Data showed that many research participants "don't like delegating" and try to do things on their own all the time, without asking for help. This is often due to a lack of trust or because the individual likes perfection. As a result, the team dynamics -when there is a team in place - are negatively impacted.

- teamwork (Healthy & professional)  
- how to delegate ... must delegate!

**Figure 5.32:** GRTI-A participants' responses to the question 'What have you learnt?'

Smaller organisations do not always have the resources to have an in-house team, and may have to work with freelancers. This makes teamwork more complicated for people to align schedules and get together in the room.

*Getting the 'team' together to build up the idea... because they aren't in-house, they are disparate. Do I need to build a new team? Do you need to build a different team just for live events - people who can get together and join you? (S2-o)*

The RDI participants' realisation that they should improve their teamwork is essential, as may anything happens to them, if there is no team in place, as a micro business, their organisation would come to a halt, or worst, to an end. Ultimately, this led the participant to consider whether they want to continue their journey on their own, or start building a team and delegate some of their work.

*I am a one-woman show. If I should grow the business, if I got sick, someone else needs to come behind me to know exactly what I do. So really finishing that [team member onboarding] manual, and really hiring somebody to finish it because that just takes a lot of time. (Violet, F1-p)*

Lack of teamwork is about RDI participants having identified this as a barrier, and acting upon it to find the right balance. Just like everything else in Innovation, it is a process comprising of trial and error and different iterations, like Claire emphasised;

*You're trying to do everything yourself, so it will take too long, and you're not really getting any help, so you're not going to get everything right. It's not humanly possible. [...] So I tried to set it up so, instead of me doing everything, everybody did a little bit. And that hasn't really worked... So it's ended up back on my desk, but with a bit more support. And also, I would say one of the big changes is, instead of it just being all me on my own, the way we're doing it now is a lot more collaborative, so I don't try and do everything on my own anymore. (Claire, D1-p)*

#### **Environment** - low level of confidence

Although there is a limited amount of data, RDLI has also helped some participants understand the importance of the environment their organisation sits within. Data evidenced that some of them did not conduct proper research before ideating or developing a product, or did not really understand their stakeholders prior to the intervention. However, by the end of the intervention, they were aware of their mistakes.

However, some participants were aware of their environment, but unfortunately could



not do anything about it, as Violet explained. In those cases, participants learnt the importance of reflecting and deciding whether to pivot and adapt to their environment in order to continue to progress towards their vision, or give up on the idea until it is achievable for the business.

*Some of the ideas that I had, especially [the idea]. After getting information from companies about going forth with that, it's very expensive to even start, you know, 20K up. And so it's like, wow, I need to maybe give up on that idea right now and look at something that's more attainable that I can afford to do. [...] It gets a little discouraging, but to know there're also some options. There are other ways to do this. (Violet, F1-p)*

5.7.2.1.4. *Bringing focus & clarity*



**Table 5.29:** *'Entrepreneurial agency & creative confidence' category overview, Bringing focus & clarity code and sub-codes overview*

**Critical review**

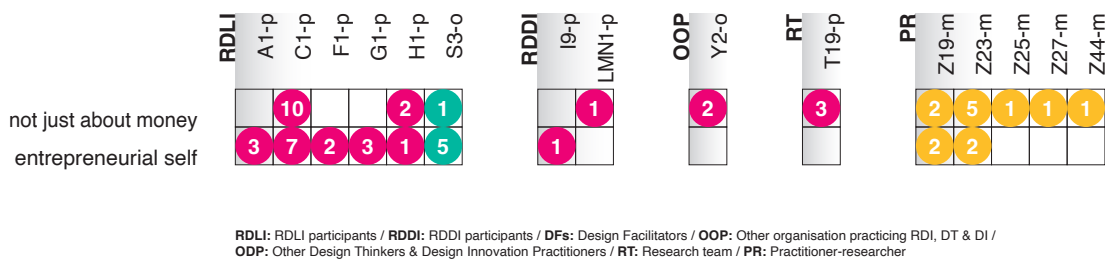
*'Bringing focus & clarity'* as a code mostly came from RDLI participants, even if some RDDI participants also contributed. This code is about individuals and entrepreneurs understanding what fulfils them and gives meaning to their life and enterprise. Data specifically highlighted that these participants uncovered their ambitions, sense of purpose and willingness to make a positive change.

It is an extension of the participants' mindset (5.7.1.1.2. RDI participants, p. 139), that is brought to the surface through these interventions, and embraced by them. However, in situations where participants are resistant to the approach, it often results in the disengagement of some, as we have seen in some interventions. A possible explanation

is that not everyone is comfortable sharing their personal thoughts with Design Facilitators, as seen in earlier sections of the results).

Bringing focus & clarity is key, especially in the context of sole-traders and small business owners, as the entrepreneurial journey is often challenging and therefore requires resilience, which passion, purpose and ambition underpin. As a result of this code, participants either redefined their ambitions and journeys, or left with a sense of validation of their vision and a renewed confidence in their own capabilities in succeeding.

## Triangulation



**Figure 5.33:** *Bringing focus & clarity triangulation overview*

## Quality

### *It's not just about money - substantial level of confidence*

The RDI participants' experience in taking part in the interventions has triggered some deep self-interrogation as a result of the Design Facilitators' questioning ((5.7.1.1.1. Design Facilitators, p. 133). By taking the time to pause, reflect and step out of their day-to-day work in the business, many participants considered "what makes leaving [their] bed in the morning worth it?" (Y2-o). Data highlighted that participants realised they were intrinsically motivated when they; had a clear sense of purpose, felt passionate about their work, had ambition and wanted to make a positive impact.

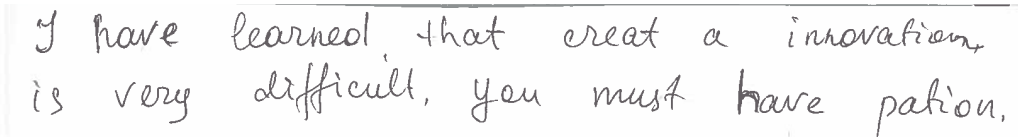
*We got nothing from it: we didn't get paid for it and we didn't ask to be paid for it, it was purely voluntary. But the feeling that I got from that was amazing, [...] they were so thankful. I thought: 'this is the nicest feeling'. But I think the idea came from GRTI. So that led on to doing that collaborative project, and that was one of the best things I've done - it was just so inspiring and nice to do, and just enjoyable. (Layla, C1-p)*

*They also believe that it has helped them thinking about what they want to get out of the maternity cover, and how to get the most out of their ambition and for the change they want to create. (GRTI Participant, Y2-o)*

*I've really like how it has been facilitated, the Sprints. There's lots we do,*

*where we talk a lot and nothing really happens. But there, we talked a lot and then turn it into actual solutions, and turned it into actual practical things. (Oscar, LMN1-p)*

It's not just about money is important is because innovation takes time and resilience (see 5.7.3.1.1. Regular practice & exposure to Design Innovation practice, p. 211).



I have learned, that creat a innovation,  
is very difficult, you must have pat'ion.

**Figure 5.34:** A GRTI-A participant's response to the question 'What have you learnt?'

And if there is no purpose, no excitement and no joy, there is no business. Indeed, for some RDI participants, this realisation was important and had, in some instances, a huge impact on their business, or in Layla's case, on the decision to close down her business.

*It was useful to get a better understanding of what I was doing, why I was doing it and who I was doing it for, and then obviously, I ended up deciding that this wasn't actually what I wanted to be doing anymore. [...] And that led to me going 'okay, actually, maybe this isn't the business that I want to be running.'* (Layla, C1-p)

## Capability

### *Entrepreneurial self - moderate level of confidence*

As a result of the interventions as well as the realisation and reaffirmation that it's not just about money, data shows that participants discovered and reaffirmed their entrepreneurial self. Having discovered what animated them, some participants like Layla, went on a completely different journey after the intervention.

*[GRTI] exposed me to a new discipline, [UX design], which I'm now pursuing as a career. [...] What I really want to say and make clear, is that it's been absolutely fantastic, though it's hard to communicate this because the business that I was working on didn't work out. And there's no bad reason as to why I shut it, it was just more that I personally wasn't doing something that was fulfilling. [...] I'm working on a new business now, and I'll definitely be using the stuff that I learned in GRTI on this business. And it's a fresh idea, so it's something I really want to work on.* (Layla, C1-p)

*When I actually applied for the job that I'm in now, I was able to use a lot of the experience that I had and say actually, I had done even though it was a completely different role to what I was in be able to say I have got experiences that because I've been part of the festivals I've done this and kind of learned these different skills.* (William, I9-p)

Others, however, got a reaffirmation that they were on the right path, and benefitted from a renewed energy and willingness to pursue their idea. As a result, they decided to invest more time and money into it, or even pivot their business (5.7.2.2.2. Reframing the business, p. 199).

*I left thinking this is brilliant - I've got all these new ideas, the things that I'm doing are working well, and people like my product. (Grace, A1-p)*

*I applied for the [loan name]. And hopefully, I can get some of that, and that's what I'll use some of that money for [the automated] parts [of the idea]. [...] Revolution. That's the word I'm looking for. That's what I've been thinking in my mind. It's a revolution. We're about to change some things here. We got to let go of some of this old stuff and move into our technical future. (Emelia, G1-p)*

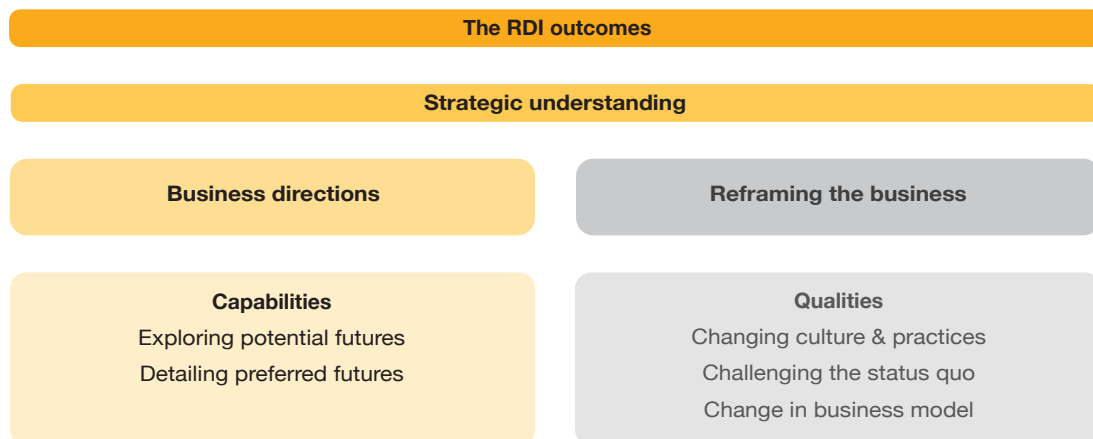
### 5.7.2.2. Strategic understanding

‘Strategic understanding’ of the organisation is the second category of RDI outcomes. It delves into the potential of RDI as a way to explore organisations’ potential futures, identify their preferred futures, and enact change to realise their vision through new culture and practices and by challenging the status quo. Overall, this category was captured from 32 activities and 172 references and is structured as follows;



**Table 5.30:** Overview of the RDI outcomes, including themes, categories and codes.

#### 5.7.2.2.1. Business directions



**Table 5.31:** Strategic understanding category overview, Business directions code and sub-codes overview

#### Critical review

‘Business directions’ is an incremental outcome where exploring potential futures is the foundations for detailing preferred futures. Exploring potential futures allows participants to take a fresh look at their organisation, taking a more neutral stance to critically assess the situation. This process is aided by the multiple perspectives brought either by the diversity of participants in RDDI, or by the multi-angle approach taken by the

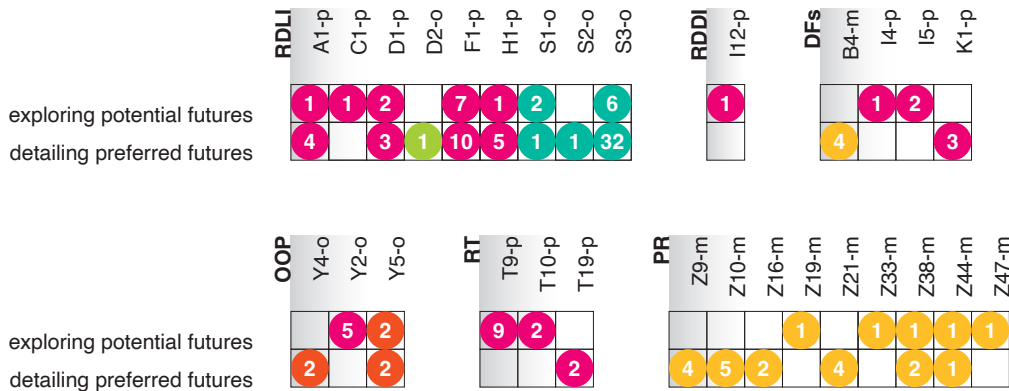
DFs and the participants in RDLI. By asking the right questions to participants, Design Facilitators are venturing knowledge. Here, the participants are encouraged to think outside the box and be disruptive. It is about doing things differently and exploring organisational futures, but more specifically, it is about the ‘abduction’ world designers live in; what might be true for the organisation. It is speculative.

After the exploration of these potential futures, participants are detailing preferred futures, becoming more purpose-driven and vision-oriented. From there, the steps taken and the milestones identified will be aligned to the bigger picture they have defined and chosen.

Although business directions were mentioned a couple of times in the context of RDDI, the results presented here come mostly from data in relation to RDLI, which can be explained by the nature of RDLI themselves, as captured in the definition presented in a previous section:

Rapid Design-Led Interventions are an exploration of the potential futures for the organisations, leading to the creation of a strategy (Design Council, 2021) to realise their preferred future (Simon, 1996). They are usually delivered by design consultancies and institutions.

### Triangulation



RDLI: RDLI participants / RDDI: RDDI participants / DFs: Design Facilitators / OOP: Other organisation practicing RDLI, DT & DI / ODP: Other Design Thinkers & Design Innovation Practitioners / RT: Research team / PR: Practitioner-researcher

Figure 5.35: Business directions triangulation overview

### Capabilities

#### Exploring potential futures - outstanding level of confidence

Exploring potential futures as an outcome is the result of a critical assessment of the participant’s organisation. With the help of Design Facilitators, the RDLI participant starts thinking differently about their enterprise, building upon what is holding it

back and exploring what the organisation's futures could look like. This code is about the individual taking a fresh look at the organisation and taking the time to pause, reflect, and map out its potential futures, in order to gain a better understanding of the situation.

*And it really, again, as I mentioned, makes you think about things a little differently because you're pulling out so many different parts and pieces that maybe are not at the top of mind. (Violet, F1-p)*

*GRTI 1-2-1 were very informative and have shaped how she thinks about what she does, her offer, including how she articulates what she does, [...] which was quite illuminating for her. It really helped her thinking about what she does in a different way. (Y2-o)*

*Even if the thing you do with it is say okay, 'now I understand the situation and I am not going anywhere near it, I'm not gonna invest in that because I now understand it.' (T9-p)*

In addition, data showed that in the process, participants got excited about the new possibilities. These opened up a whole new world for them, where they were capable of thinking outside the box and being more disruptive in their entrepreneurial approach.

*That [project] is probably the first tangible example [as a result of GRTI] [...] but it's opened up a way of working, and a line of income, that we just never had before. It is a completely new product, and it came from nowhere. It bears no relation to anything we've ever done before. So it's totally new, and if you'd asked me three or four years ago, 'do you think you could see yourself doing this?' I'd say 'No! It's stupid! Why would we be doing that?' So, it really has been a totally different way of thinking about things. (Claire, D1-p)*

#### **Detailing preferred futures** - outstanding level of confidence

Having gained a better understanding of their enterprise and navigated potential futures, data showed that RDLI participants decided upon their Detailing preferred futures. Here, participants become purpose-driven and define their ambition for their enterprise. Through the process and with the help of Design Facilitators, they start planning and roadmapping their next actions and the main milestones to undergo in order to achieve their vision.

*It helped me figure out what things were important, and where I needed to start, and it motivated me to actually create a plan of where I wanted to go. (Grace, A1-p)*

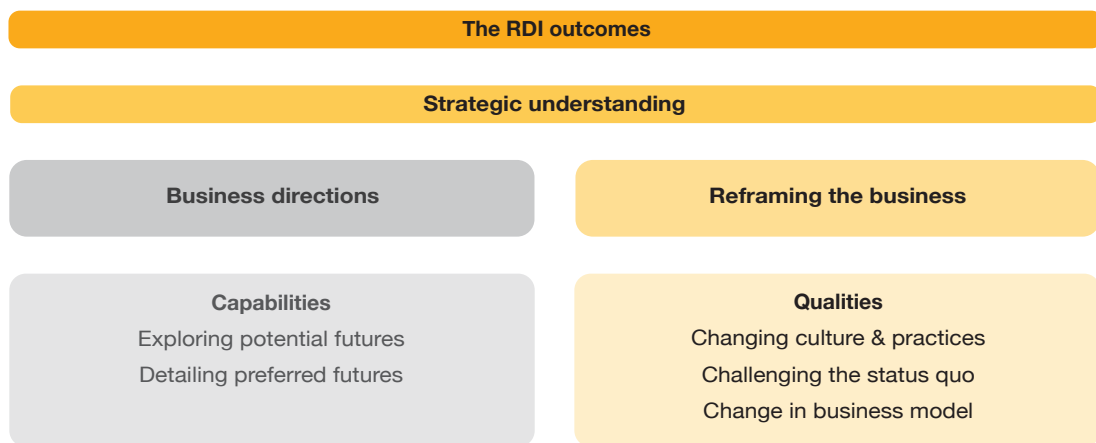
*It seems that once she saw the value of some of the things that we discussed during the sessions, she understood that it is necessary to take a leap of faith and try to make things happen, if she wants to achieve her business' vision. (B4-m)*

By taking a more strategic approach to the work they need to deliver in order to arrive at their preferred futures, they might decide to postpone the bigger projects in order to lay solid foundations for the organisation and maximise their current resources.

*I'm ready in some areas, in some ways, for a couple of things, but for the bigger projects, it's like, I need to do a little bit more research or put that on the back burner, until I get a lot of money to be able to do so. (Violet, F1-p)*

*Spotting the opportunities when they were drawn out on the business really helped. The timeline helped with deciding between opportunities that support the long term plan. (S2-o)*

#### 5.7.2.2.2. Reframing the business



**Table 5.32:** *'Strategic understanding' category overview, 'reframing the business' code and sub-codes overview*

#### Critical review

'Reframing the business' as an RDI outcome relates to a change in culture and practices and the challenge to the status quo, leading to the revision, or transformation of organisations' business model. It encourages organisations to become more critical of their ideas and potential futures, by using more visual ways of working and communicating (5.7.2.1.2. Designerly ways of knowing, p. 186), and building upon the feedback received from stakeholders.

This codes builds upon designerly ways of knowing as an outcome, and allows RDI participants and clients to build new understandings of their organisation as they engage with new practices. In addition, they start exploring it through different lenses, thanks to the diversity of the participants in RDDI, or the multiple perspectives embraced by the participants and Design Facilitators in RDLI (5.7.1.2.2. RDI participant selection, p. 151), permitting both participants and clients to take a step back and be more critical of their ideas and organisations.



Overall, reframing the business allows organisations to embrace the abductive world of designers, discovering what might be true and new potential futures for the organisation and acting upon them.

For this code, data are mostly related to larger organisations with an established business model, culture and practices. Indeed, they may have noticed the changes because a change as their scale, such changes are very noticeable. Conversely, in the case of sole-traders and micro enterprises, it is more challenging to differentiate change in the individual and change in the organisation.

### Triangulation

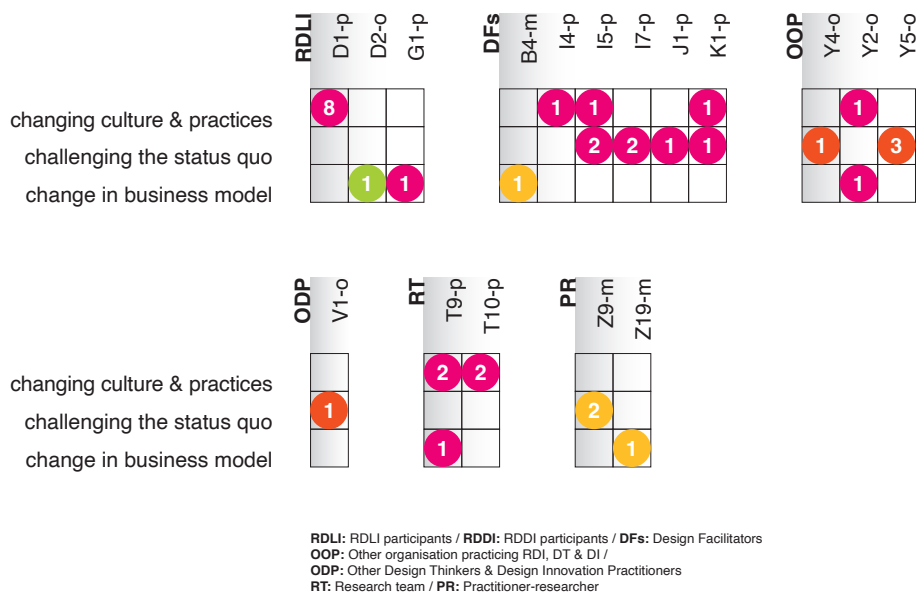


Figure 5.36: Reframing the business triangulation overview

### Qualities

#### Changing culture & practices - low level of confidence

Data indicated that some RDI participants and their organisations changed their culture and practices as a result of attending RDI. Through more collaborative practices - when the organisation size allowed - they became more explorative in their work in order to address challenges and improve their situation. Through the process and to better communicate their idea to others outside their area of expertise, they embraced a more visual way of working, using diagrams instead of numbers for example, which allowed a greater criticality, assessment of ideas and constructive feedback from stakeholders, prior to implementation or rejection of the idea. As a result, organisations became more purposeful in their use of resources.

*The business in itself has not changed. The manner in which it is being executed in has changed, for sure. (Miles, H1-p)*

*It is a similar sort of approach to say ‘okay, you let’s see what ways we can fix things and what’s going wrong,’ and that sort of thing. [...] If things aren’t working, then innovation is the answer, in its various forms. [...] So they’re more little things, but some practices clearly lodged. (Claire, D1-p)*

*The other thing I do that’s quite different, is we had a tendency to be very intense. So if there’s an idea, let’s pour resources on it, and let’s wrap this beautiful object with lots of numbers. And so that meant that we would be months working on something without really saying, ‘Well, does it work’? I do these things now, [...] I’ll sort of sketch up an idea. And [...] I’ll show that to people and I’ll say, ‘well, you know, we had that meeting. So what I’ve done, I’ve done a wee sketch’. [...] There’s no point in me showing somebody who’s not a finance person, a whole load of numbers. (Claire, D1-p)*

Further, and after years of RDI use,

*JCW: I’m quite intrigued to know, is the [Festival] triggering a higher number of people who want to join the innovation team or innovation ambassadors or to train in the innovation university?*

*Ethan: I would say it’s much less subtle than that. And it’s more subtly increasing and changing the culture of the organisation to make innovation a mainstream part of what we do business as usual. So, you know, everybody is encouraged, managers and team leaders are encouraged to allow their people to go and attend even though it might not seem relevant, because the company recognises that this is a way we can get things done and as much as possible, particularly more so in recent years. We try and make the subjects of the Sprints, things that are helping people’s day to day jobs, you know, improving the quality of [what Organisation I is responsible for], reducing carbon emissions, things that people actually will be working on in their day to day jobs anyway, so it’s not a huge leap. (Ethan, I5-p)*

### **Challenging the status quo** - substantial level of confidence

Challenging the status quo is one of the possible outcomes of RDI. Indeed, some RDI participants and clients indicated that regardless of whether they liked the outputs of the interventions, it had challenged the way they thought about their organisations. It broadened their horizons and potential futures, and prompted them to rethink what might be right for their organisation.

*The ideas presented by the learners forced [The Blooming Platypus client’s name] to think outside the box for their business’s future. It really triggered the fact that they needed to think about the business more broadly. It really opened the horizon for their organisation. Specifically, if they didn’t like one of the ideas that was presented by the learners, they loved the fact that it challenged their business model. [...] They got a fresh perspective and take on their business that challenged the status quo. (Y4-o)*

***Change in business model - substantial level of confidence***

If there is very little data about change in business model, data showed that it could be a long-term outcome of RDI, as a result of organisations changing their culture and practices as well challenging the status quo. However, and from the data collected, it appears to be an indirect outcome that was highly influenced by the development of a long-term relationship with Design Facilitators from GRTI 1-2-1.

*Claire mentioned that the long-term implication of partnering with the university is the complete shift of their business model. GRTI 1-2-1 questioned a lot of the work they were doing, as well as the purpose being it, and the LT relationship with the team at Northumbria [led by MB], resulted in a completely new business model for Organisation D. They now even have a business stream from partnerships with universities. (D2-o)*

*[Claire] completely redesigned her business. You know, they changed the offices, they just changed the way the culture of the organisation. (T9-p)*

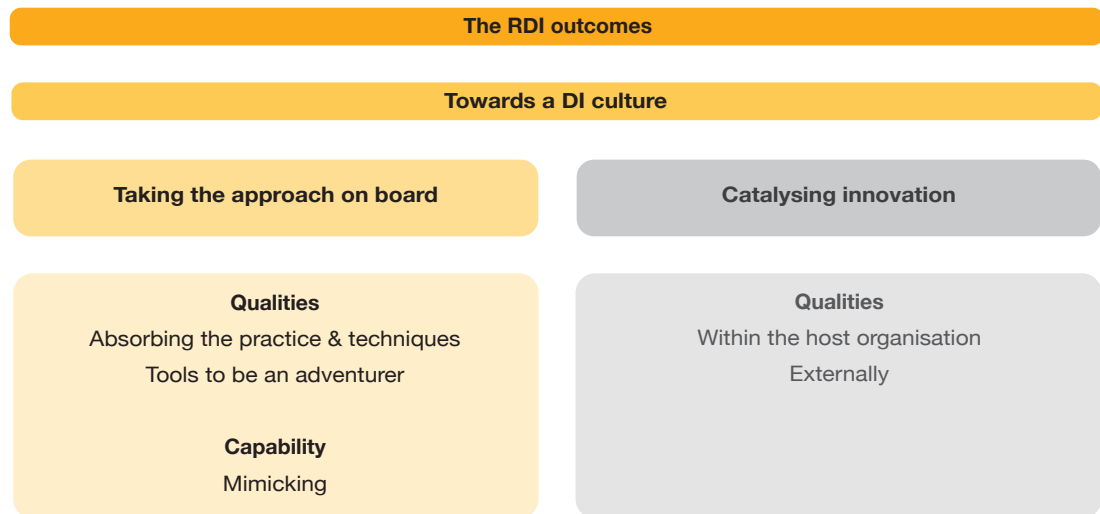
### 5.7.2.3. Towards a Design Innovation culture

'Towards a Design Innovation culture' is the last category of RDI outcomes. It explores the potential of RDI to start embedding Design Innovation practices within organisations, by taking the approach on board and catalysing innovation. Overall, this category was captured from 28 activities, contains 77 references and is structured as follows;



**Table 5.33:** Overview of the RDI outcomes, including themes, categories and codes.

#### 5.7.2.3.1. Taking the approach on board



**Table 5.34:** 'Towards a Design Innovation culture' category overview, Taking the approach on board code and sub-codes overview

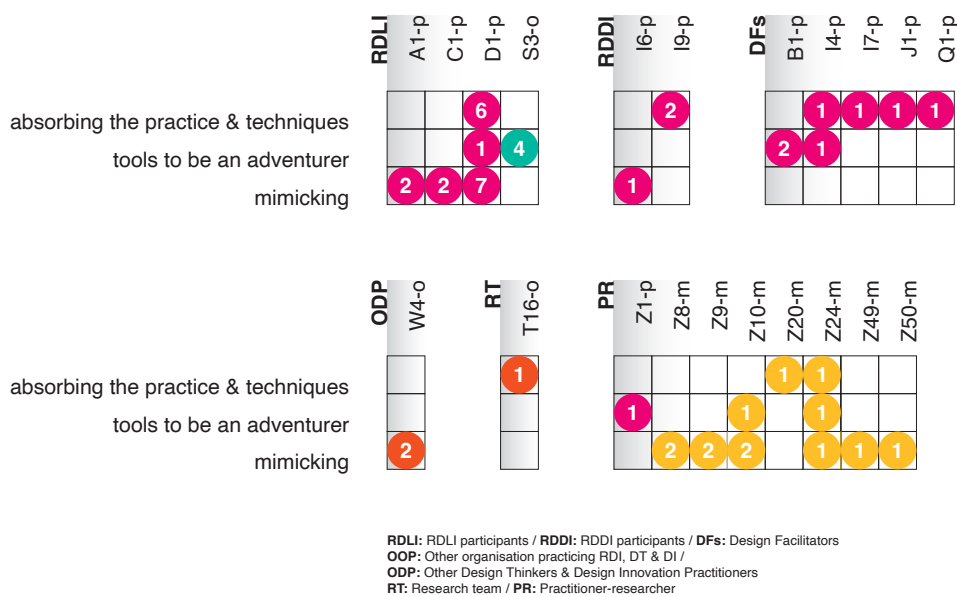
### Critical review

'Taking the approach on board' relates to RDI participants starting to develop new capabilities after the interventions, based on what has been done. Data showed that participants - consciously or unconsciously - take inspiration from what has been

done by the Design Facilitators during the RDI, and start using some of the tools, techniques and methods deployed then. Further, they start adapting them to their own organisation and environment, fully embracing them. As a result, they change their practice.

This code is indicative of a deep impact on the RDI participant and the transformation of their practice as a result of attending the intervention. However, the fact that only some of the participants mentioned this and were able to articulate it, is indicative of the fact that not all participants were impacted with the same level of depth.

## Triangulation



**Figure 5.37:** Towards a Design Innovation culture triangulation overview

## Qualities

### *Absorbing the practice & techniques - substantial level of confidence*

Data showed that participants absorb the practices & techniques discovered during the interventions, using and adapting them to fit their organisation. Through the interventions, participants have developed their confidence, as well as a designerly mindset, which supports the use of tools and the absorption of new practice and techniques. Indeed, the more participants use the tools, the more likely they are to grow and develop new capabilities inspired by RDI, such as sketching, as a way to communicate or validate an idea.

*So a lot of the techniques that we've been using in this sprint are things that we've brought into our business relatively recently. [...] We come with a sort of skeleton plan. And then as ideas sort of happen, we flex them. We use different*

methodologies at different stages to do different things. (Jakob, Q1-p)

So that's one of the other things I learned from this willingness to make a quick sketch; and it almost didn't matter how homemade it looked. Because it's just a means of translating the contents of my head into something we can discuss. [...] The other thing I do, and it's sort of an elaboration on this sketch idea, is I actually have multiple sketches. So rather than say 'that is the one answer', I'll actually sketch up three or four different interpretations, or versions, or something like that, and share those as a means of saying: 'these are all the variations I've come up with. Which one do you think is closest to where we're going?' [...] I've stolen that but I think [it is] influence, rather than anything we specifically covered. But this keenness to sketch, and throw it away and quickly iterate, I definitely got from [Design Facilitators' names]. (Claire, D1-p)

#### **Tools to be an adventurer** - moderate level of confidence

As part of the outcomes of the RDI, data showed that some participants have discovered new tools, learn about them but also started using them. Over time, participants have started implementing and applying them in their own organisations. This utilisation was not only enabled by their learning experience, but also by the confidence some participants have built as a result of the RDI.

So [GRTI] gave me some tools to enable me to go and be an adventurer. And I didn't know how, but afterwards I felt a little bit more confident doing it, because I had some tools. (Claire, D1-p)

On the back of last year's digital event, we had MO22 (organisation's name) come back to us and say that they had now adopted things that they learned during the festival week, which blew me away because I see them as being, you know, the innovation supremos. (Pauline, I4-p, building upon comments she had made about Miro and tools).

Specifically, when GRTI-A participants were asked what they had learnt from the interventions, some mentioned tools that had been used to deliver the RDLI (Figure 5.38).

Writing Business model canvas, design thinking,  
how to present the idea to make it clear &  
understandable.

I have learnt several useful business tools  
(business canvas model, pitch techniques.)

**Figure 5.38:** GRTI-A participants' responses to the question 'What have you learnt?'

However, in the context of GRTI, it is not surprising if some participants can specifically recall some of these tools. It appears indeed that it was one of the aims of the interventions to equip participants with a variety of tools to strategise on and grow their business without the help of Design Facilitators, post RDI.

*I think just giving them that roadmap, or at least equipping them with the tools to be able to think about how to create plans for what they need to do to see their business grow was valuable. (Becky, B1-p)*

## **Capability**

### *Mimicking - substantial level of confidence*

Mimicking is a very interesting capability as it relates to the RDI participants reproducing - consciously or unconsciously - what they have been exposed to during the intervention, whether it is the DFs' behaviours and ways of thinking, the methods or the environment. In most cases, data showed that this happened after the interventions and as a result of it.

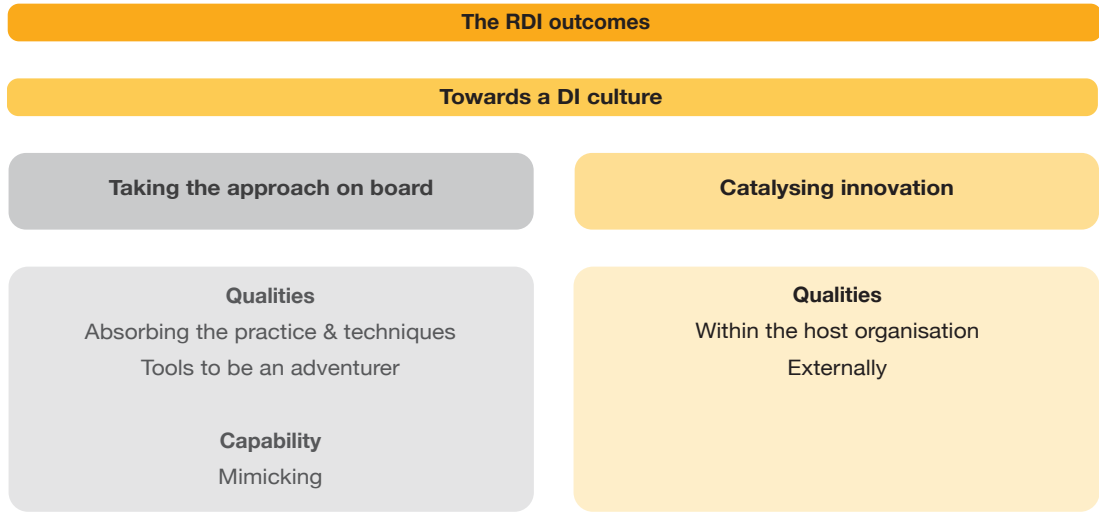
*I was sort of leading it and, and I did a lot of the things that I learned in GRTI. To be transparent, I wasn't necessarily thinking of GRTI as I was doing it, but I think I was first exposed to these methods through that program, and then I carried those over into other projects. (Layla, C1-p)*

*I've stolen that but I think it is an influence, rather than anything we specifically covered. But this keenness to sketch, and throw it away and quickly iterate, I definitely got from [the facilitators]. [...] So we have effectively mimicked the process elsewhere. [...] We mimicked in a different way because we created that [innovation] room: we mimicked the environment. [...] And we all did that: we wanted to replicate that way of thinking and that way of working. So we made a room for it. (Claire, D1-p)*

Most interestingly (though there is very little data supporting this point), it appears that by mimicking behaviours, ways of thinking, methods and environment, participants started to immerse themselves into this designerly world and live by it, which resulted in the development of new ways of working.

*I was first exposed to these methods through that program, and then I carried those over into other projects. So things like: figuring out who the service was for, what we wanted to achieve, what we wanted our customers or users to achieve it from it... And asking those more interrogating questions - I've done a lot more of that. Which is interesting, because some people get defensive. And I'm like, 'yeah, but what about this, now?' [And they say] 'We don't need to be asking those questions right now!' [And I reply], 'I'm taking a design-led approach, thank you!!' (Layla, C1-p)*

5.7.2.3.2. *Catalysing innovation*

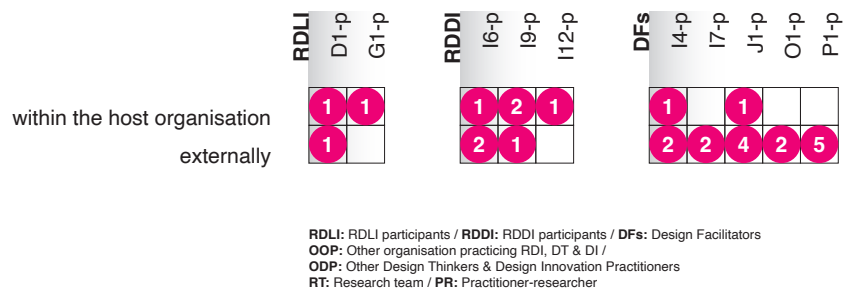


**Table 5.35:** *Towards a Design Innovation culture category overview, Catalysing innovation code and sub-codes overview*

**Critical review**

Although ‘*catalysing innovation*’ is limited in the data, it shows the possibility for organisations to catalyse innovation within their own organisation, but also external organisations, through the delivery of RDI. Indeed, data evidenced that by exposing individuals to innovation practices, it proved the value of such interventions as problem-solving activities, which was a necessary step towards embedding Design Innovation within an organisational culture.

**Triangulation**



**Figure 5.39:** *Catalysing innovation triangulation overview*



## Qualities

### *Within the host organisation - low level of confidence*

Data showed that RDI were successful in catalysing innovation within their own organisations in the context of larger organisations. Indeed, as DFs facilitate these interventions, they enable communication, break down silos, and help individuals build an understanding of the challenges faced by other departments, which ultimately helps employees make progress and engage in RDI. Further, during the intervention, DFs have the potential to inspire participants to build their Design Innovation skill set and deepen their knowledge of it, to then start participating in the delivery of such activities, benefitting both the individual and the organisation.

*I was just keen to build that up and be able to have the knowledge down the line to run [Sprints]. And especially having sat in workshops with [Design Facilitator's name] and people like that, maybe there's a bit of inspiration. I thought, actually, if I build the skill set up, I'll be able to do that confidently myself. And each year, getting additional training or skills and then the experience to kind of back that up too. (William, 19-p)*

*Being a small team, and by design, we rely on the good will of those people who are keen and have extra capacity to be able to actually deliver the stuff, because really, we are supporters, enablers, catalysts. But we often are not the doers. And actually we shouldn't be the doers. But with that means that we're in an organisation that is already pretty stretched and that extra level of capacity that's required to make meaningful progress can often be difficult. (Pauline, 14-p)*

### *Externally - low level of confidence*

Additional to catalysing innovation in-house, RDI, and specifically inclusive RDDI were proven to be valuable in catalysing innovation in stakeholder organisations. Specifically, by welcoming external organisations, the organising enterprise demonstrates the value of RDI, which inspires others to start implementing Design Innovation practices in their own company. If this shift is incremental, data evidenced that by exposing their team to RDDI, stakeholder organisations raised awareness about the use of RDI to solve problems.

*We think [Sprints] are a good methodology. You know, there's something we want to work on with [Organisation I], and we think the Sprint approach will work. So that's value saying it's probably been driven by me and my manager who's our innovation manager. We see value in it but we have only 10 or 15 people who have had any recent exposure to design sprints and stuff. [...] When we were earlier this year, we were trying to work out what we were going to do in terms of our involvement in the next Festival. [...] And one of the considerations was that if we are ramping up our involvement in Sprints, running Sprints or participating in Sprints. At this point in time, it's probably going to be more for that capability building and exposing more of our own*

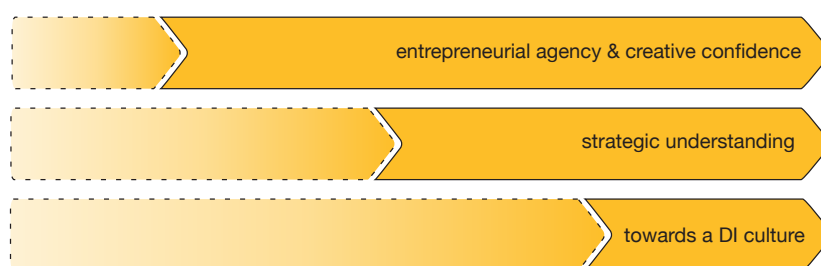
*staff to Sprints and that way of thinking and things. So, I suspect we'll do that in the next year or two, whether it's with [ Organisation I] or just on our own terms, but you know, maybe even start doing some mini Sprints or going into other teams to run a Sprint for them just to start building our chops in that in that space and across the business. (Matthew, J1-p).*

*It's SMEs, founders, business owners coming through the door, and understanding that there are problems not just in the [removed for anonymity purposes] industry, but there are problems that they could potentially solve. So it's giving them an idea of a solution, what they need to provide a solution for. And it's inspiring them to innovate. (Eugene, O1-p)*

#### 5.7.2.4. Summary of the RDI outcomes

This section unpacked the RDI outcomes identified by the research participants and data set contributors, identifying entrepreneurial agency & creative confidence, strategic understanding and towards a Design Innovation culture as the key outcomes resulting from Rapid Design Interventions.

These outcomes co-evolving and interdependent, although completion of one outcome is not a pre-requisite for the commencement of the next. The first outcome refers to the RDI participants' greater understanding of their organisation's dynamics and enhanced capability to come up with novel ideas and act upon them. The second pertains to their understanding of potential business directions, identification and selection of preferred futures, which leads them to reframe the organisation when needed. Finally, the last, invokes the organisation slowly becoming directed by Design Innovation principles, leading to the development of a Design Innovation organisational culture.

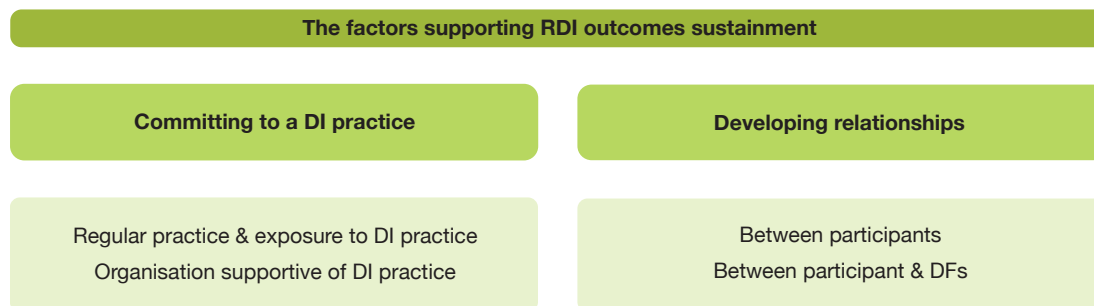


**Figure 5.40:** *The RDI outcomes.*

### 5.7.3 The factors supporting RDI outcomes sustainment

'The factors supporting RDI outcomes sustainment' is the theme least supported by data, with a total of 44 activities and 192 references falling under it. Data gathered in this set indicates that if RDI can trigger some quite profound outcomes - and sometimes outputs - a more regular or continuous Design Innovation practice is needed for those outcomes to be sustained overtime.

This regular practice can be manifest in two different ways; by committing to a Design Innovation practice as an individual and as an organisation and by developing long-term relationships between RDI participants and with DFs. All of these are supportive of a Design Innovation culture and contribute to the sustainment of outcomes in the long-term.

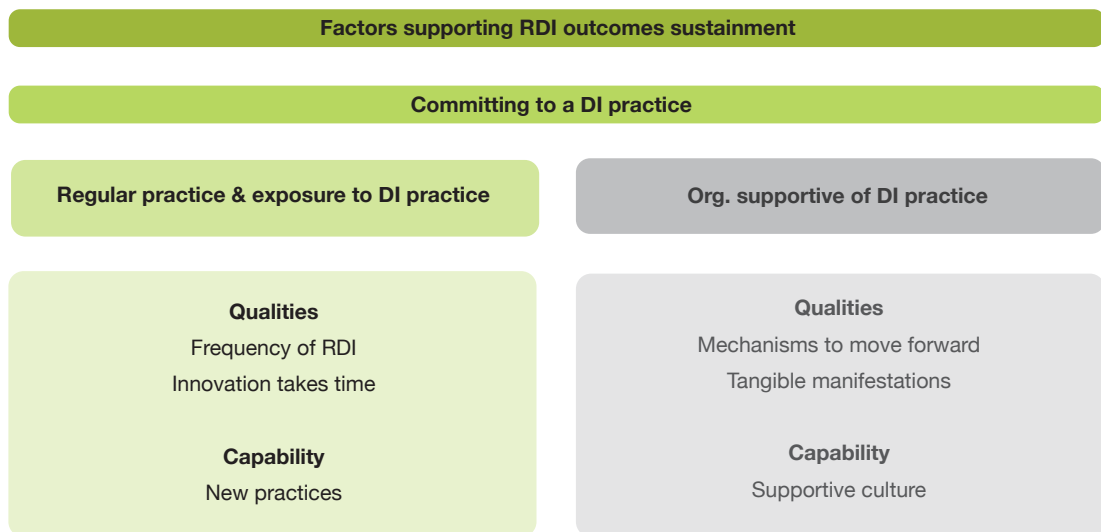


**Table 5.36:** *Overview of the categories and codes included in the 'factors supporting RDI outcomes sustainment'*

### 5.7.3.1. Committing to a Design Innovation practice

‘Committing to a Design Innovation practice’ is the most prevalent factor influencing RDI outcomes sustainment. It was mentioned in 42 activities with a total number of 174 references. Committing to a Design Innovation practice is about RDI participants regularly engaging in RDI and being exposed to Design Innovation, organisations being supportive of a Design Innovation practice, and the physical assets that are indicators of a Design Innovation practice.

#### 5.7.3.1.1. Regular practice & exposure to Design Innovation practice



**Table 5.37:** *Committing to a Design Innovation practice category overview, ‘regular practice & exposure to Design Innovation practice’ code and sub-codes overview*

#### Critical summary

The sustainment of the RDI outcomes is related to a regular (or continuous) exposure, engagement, and practice of Design Innovation. Although there are little data about this, those participants who did not engage in further RDI, appear to have been less impacted overall.

‘Regular practice & exposure to Design Innovation practice’ is about RDI participants investing time and actively seeking the development of new habits and new practices post RDI. Data showed that after engaging with multiple RDI, some RDI participants started applying some of the tools, methods and practices, but also mindset, in their day-to-day activities.

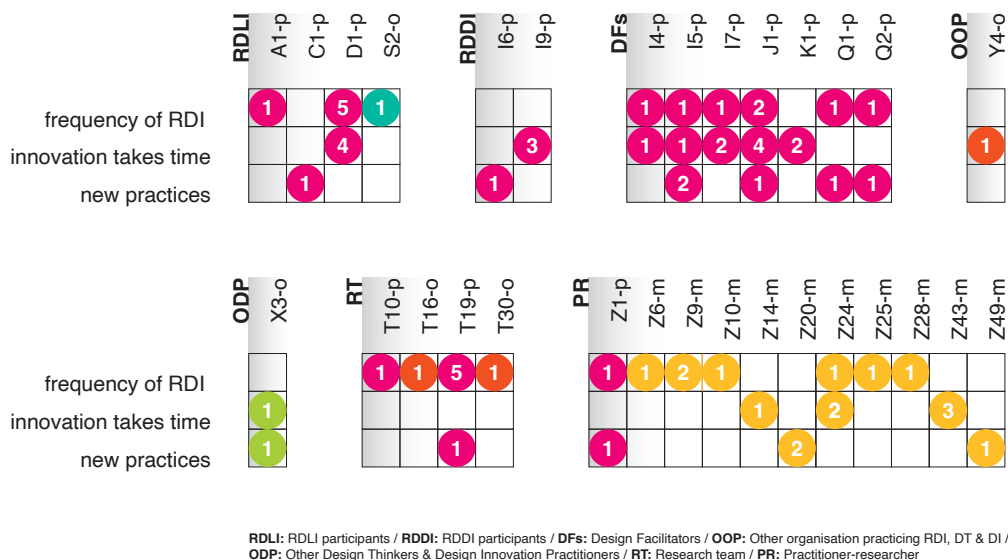
However, it is important to highlight that only Organisations C, D and I evidenced engagement with Design Innovation and/or RDI after their first attendance in an RDI.

With regards to Organisation F, G and H, the reason is likely to be because their interview was conducted less than a month after their participation in GRTI, not leaving them the time to fully appreciate the outcomes of the interventions and therefore, their sustainment.

If RDI sparks an interest in Design Innovation practice in participants, data has shown that it is then up to them to decide whether they want to embrace it and keep going. This is even more obvious for sole traders and small businesses, as individuals often are the business.

Finally, 'Reflective practice & exposure to Design Innovation practice' raises essential questions about the potential of RDI to redirect RDI participants' practices towards more responsible, sustainable and/or more creative practices.

### Triangulation



**Figure 5.41:** Regular practice & exposure to Design Innovation practice triangulation overview

### Qualities

#### Frequency of RDI - substantial level of confidence

During their interview, some participants mentioned that they would greatly benefit from a further intervention. They believed it would not only keep them on track with what they initially decided to work on, but also give them guidance for implementing their ideas. Supporting the idea that another RDLI would be of help, some participants engaged in further interventions after their initial RDI, which helped sustain their learning.

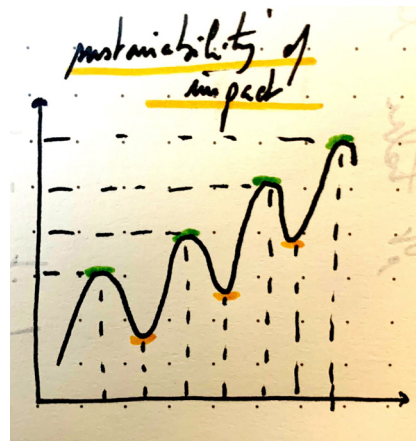
To be honest, I probably need another one of those interventions! I found that it set me on track. Like, sometimes I feel that I have ideas, or there's things that I want to do, but there's so much going on in my head [that] putting pen to paper or trying to figure out where to start is quite difficult. (Grace, A1-p)

JCW: So do you feel like the fact you've been exposed to those, like all those interventions, since you did GRTI (even though they weren't quite the same) has helped you and your organisation to sustain those practices that you learned?

Claire: Yes, I would say for me definitely. But I've had the most experience, because I did yours, and I did one at [MO17], and I went to the one at MO28, whereas other people only had one, or possibly two experiences. (Claire, D1-p)

These comments forced the research team to question the depth of these further interventions, and whether all participants would need the same intensity for future RDI in order to sustain RDI outcomes. But they also raised a question that challenges the data; Is sustainment enough?

However, even if they both needed a reminder, they didn't need the same depth. How often does an organisation need the nudge to maintain the impact? Is sustainment enough? What about growth? (T16-p)



**Figure 5.42:** Sketch done during T19-p, emphasising the previous quote from T19-p. RDI are represented in yellow, and the outcomes sustained, and grown in green.

In addition, other participants discussed the usefulness of having RDI at a fixed point in time. In the context of the Festival, having an annual delivery of such activities gives Organisation I and their stakeholders traction and helps them to keep momentum with their innovation practice. Some participants also discussed how other regular interactions focusing on Design Innovation outside RDI specifically, as a way to sustain such practices.

And we, as you know, meet once a month, and we give them oxygen and stuff that goes on from outside. (Pauline, I4-p)

*The festival is a fixed point in time. But it is actually something that gives you traction and helpshelp you keep momentum. (Ethan, I5-p)*

### ***Innovation takes time - substantial level of confidence***

Even if there is slightly less data about it, I discussed on different occasions in my memos (Z14-m & Z-43-m) the RDLI potential to support innovation within businesses and as a transformative tool for entrepreneurship, as they enable participants to de-risk the innovation process. In contrast, they support both their individual and business development. Illustrating this last point, I recalled (Z14-m) the mindset of one of my business advisors, who explained about investing in an individual instead of investing in a business. Because a resilient and strong-willed individual might have a bad idea and fail once, twice, or thrice with a business. However, in the end, they will find a way to make it work. This last point is significant, as innovation takes time, and many organisations give up before getting to a point where they reap the benefits of it or even can quantify the value of RDI.

*I think that's the nature of our work, in that everything has really long lead times. But I always argue that that's one of the features of innovation - that if it was genuinely innovative, you could do it in a week. But proper innovation takes blooming forever! Quick fixes don't but they're not really that innovative. (Claire, D1-p)*

*And that's coming to fruition now. So this is three, four years later. But that just sort of shows you how something goes from a tiny seed or an idea at one year to work to a sprint next year to up to a pilot and a regional pilot and then at national. (Ethan, I5-p)*

In the context of RDDI, data showed that implementing ideas, like Organisation I have done in the past, is a practical way to keep engaging with DI practice (I5-p , I8-p). In a more intangible and indirect way, RDLI participants Claire and Layla pursued their interaction with Design Innovation practice through learning; Claire, by engaging with literature about Design Thinking, and Layla, by signing up to a UX Design course where design tools and methods, as well as Design Thinking, were taught.

## **Capabilities**

### ***New practices - substantial level of confidence***

Some participants admitted that attending further RDI helped them sustain their learning over time. However, there is little data about this as not many research participants attended multiple RDI. Those who did believe in engaging with multiple RDI enabled “more pronounced” effects on them (D1-p); developing new practices, and using new ways of working as they regularly engage with Design Innovation.

*As ideas sort of happen, we flex them, we use different methodologies at different stages to do different things. And that's simultaneously teaching everybody else agile innovation methodologies, but also we're learning back from, which ones work and which ones don't. We will kind of produce a framework or methodology. They'll then take that direction we maybe haven't thought about. So we kind of get some learning back from that stuff as well. So there's genuine bi directional learning going on as well. (Jakob, Q1-p)*

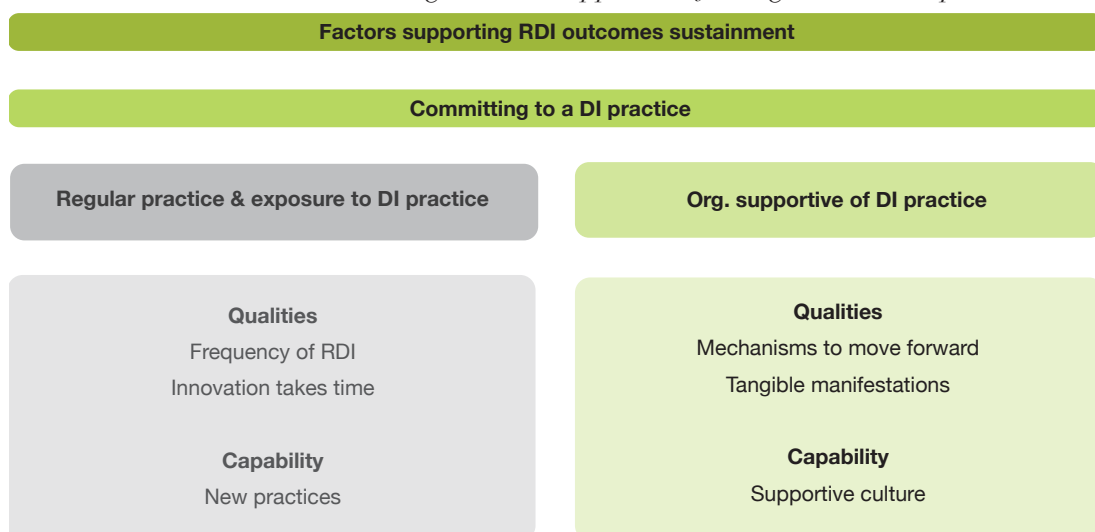
Reflecting upon this, the research team discussed, on multiple occasions, the potential of regular interventions and Design Innovation practice as a (re)directive practice, posing many questions: How difficult is it to accept and continue a new form of practice? How resilient to the forces influencing RDI outcomes should participants be? How much resource and energy does it take to sustain a new practice for it to become embedded?

*Is this thing a fundamentally redirective practice? That is to say, a practice that helped people redirect their own practices, usually to be more ethical, fairer, etc. But maybe it's a practice that redirects towards a more creative set of practices. (T19-p)*

Layla's creative confidence has been built enough so now, she is feeling safe to use the tools and methods, mimicking our approach. This is a result of GRTI, but also the fact that the outcomes of GRTI were probably sustained by her moving into design and specifically UX, which means she was constantly reminded of the DI practice. (Z49-m)

The questions raised by 'new practices' would need further investigation to determine whether RDI has the potential to redirect practices, and if so, to investigate the nature of this redirection; towards more sustainable and responsible futures and/or creative practices, or something else.

#### 5.7.3.1.2. Organisation supportive of Design Innovation practice



**Table 5.38:** *Committing to a Design Innovation practice category overview, 'organisation supportive of Design Innovation practice' code and sub-codes overview*



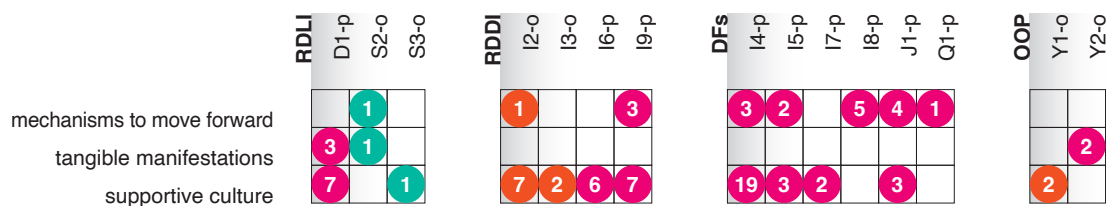
## Critical summary

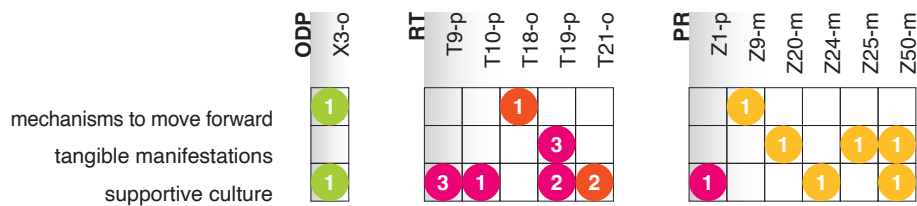
An organisational culture supportive of Design Innovation practices is evidenced within organisations with the delivery of innovation activities, the deployment of mechanisms, and the investment in resources supporting those activities, whether they are human, financial, or physical. By doing so, organisations demonstrate their willingness to engage in innovation practices, which encourage and enable their employees to actively participate in RDI, as they realise that the outcomes of their RDI or other innovation activity will be acknowledged, considered and discussed, as opposed to being disregarded by their hierarchy. However, there is also a responsibility from the participants required, as they are an integral part of this organisational culture. Their open-mindedness and willingness to engage with RDI and Design Innovation practices proposed by the organisation will eventually impact the time it takes to fully implement them in-house.

Design Innovation is not everyone's common practice and sometimes individuals need a gentle nudge. Tangible manifestations are objects and places that embody innovation for the organisation, and they can be as simple as a shelf with innovation books, a specific collaboration desk or an innovation room. Although they might seem trivial, they are physical prompts towards an embedded innovation practice, reminding employees that innovation is an investment; it takes time and effort, and occasionally requires them to step away from their day-to-day tasks. However, these findings were again mostly supported by medium and large organisations, which seems logical, as sole traders and small enterprises do not necessarily have the resources to invest in these physical artefacts.

Nevertheless, it is essential to contrast these findings as only medium and large organisations, with individuals who committed to a Design Innovation practice contributed towards this data set. It is likely that a regular practice and exposure to Design Innovation of individuals in managing or leadership positions enables the development of a supportive culture. In addition, sole traders and small organisations do not necessarily have an organisational culture in place.

## Triangulation





RDLI: RDLI participants / RDDI: RDDI participants / DFs: Design Facilitators / OOP: Other organisation practicing RDI, DT & DI / ODP: Other Design Thinkers & Design Innovation Practitioners / RT: Research team / PR: Practitioner-researcher

**Figure 5.43:** ‘Organisations supportive of Design Innovation practice’ triangulation overview

## Qualities

### **Mechanisms to move forward** - outstanding level of confidence

Data in limited amounts showed that organisations can put mechanisms in place to move forward after the delivery of an RDI, as well as to support Design Innovation practice. These mechanisms can be of two natures; human, or material. Human mechanisms involve people, who are actively working to progress ideas and projects. In the context of the Festival, Organisation I have put in place “busy bees” and bubbles”.

*We’ve experimented with putting people we call busy bees in different Sprints, so they go and deliberately pollinate from one to the other. So they might spend an hour on each sprint each day. We put Sprints that we think are kind of going to converge in some way, next to each other. (Lee, 17-p)*

*We also have bubbles. Because we have so many activities now, [...] we definitely need to create these ways in which we have strong dialogue across topic areas that are quite similar, to make sure again, that they’re adding, building and putting in insights that can perhaps avoid duplication and to build on other ideas that are happening. [...] In the run up [to the Festival], those bubbles are established and then the bubbles leads will bring the bubble together so they can share what they’re working on, what speakers they’ve got and what they’ve got planned for the [Sprint] week.*

*And then across the week, they’ll touch in with each other, just to make sure that they won’t have duplication. And then really, one of the key things and the really hard bit then is to actually drive action out of the festival. So the bubble on the Friday morning this year, we’ll meet for three hours to actually do a proper planning session and the proper downloads so they can really understand what are the strongest ideas coming out. How can they take them forward and what do they need to take that forward? And how does that fit with what other work is going on within that particular space? And we’re putting a real focus on that. The senior leaders are there. So there’s somebody from the executive team. They have the bubble owners in there and then we’ve also assigned a mentor, so that is somebody from the innovation team who will understand what is going out and probably has a better understanding of how we can help some of those ideas to be taken forward. Because that is the hard bit. (Pauline, 18-p)*

*Material mechanisms, such as 'idea passports' and 'idea springboards' are also used by organisations. These material mechanisms allow the organisation to follow an idea from its generation, to its implementation, summarising the challenge it addresses, the actual innovation, the potential cost of it, etc. and provides some rigour and basic diligence to the process. Its structure is such that it forces employees to ask themselves some of the key questions to make an idea feasible and sustainable in business terms. In addition, it allows to filter employees that have some level of excitement and passion about an idea, making its implementation more likely to happen (Pauline, I4-p).*

These mechanisms - human or material - should be put in place prior to the intervention, to allow for a better transition after the RDI and to ensure that outcomes (and outputs) are being moved forward.

*And then, [after the RDDI] we sort of took the foot off the accelerator afterwards and didn't really just push to grab those outcomes and use them. [...] We didn't have a clear thing planned out for how we're going to use the outcomes. [...] And so it's sort of just fizzled. (Matthew, J1-p)*

#### **Tangible manifestations** - substantial level of confidence

Participants have described the importance of tangible manifestations dedicated to innovation to give them meaning and value. These manifestations can be things such as an innovation room, but can also be a lot more affordable, such as a bookshelf full of innovation books that employees can pick up and read or learn from. Discussing this with the research team, a participant highlighted that those tangible manifestations were a way of making Design Innovation practise tangible within the organisation's premises, which then encouraged the users of the space to live by it.

*And [MB] and [NS] know this (as I even sent the photographs): at that time we were moving into a new office, and in our back office we labelled the innovation room, and we equipped it with post-it notes and pens and rolls of paper and tried to get some of that ethos. And I know it's not the same as what you do, but [we wanted] to create a safe space for people to be innovative. (Claire, D1-p)*

*When Claire discusses how they tried to replicate the working environment within their premises, so that employees would have a physical space for innovation, it reminds me of when we worked during MDI with a global manufacturer. After having about 8 of their key leaders and managers attending a Design Sprint facilitated by my team, they went on to create their own innovation room on-site, in their NE factory. I met with the manager about three years later, and he told me that the space was being used a lot by their team and that some of them had actually taken on a facilitation role to enable those activities to take place in-house. (Z50-m)*

*If you make those things tangible, you then have to live by it and that may help declutter some of the noise (Y2-o)*

But a tangible manifestation does not always sit within the premises of an organisation. Indeed, the Festival in and of itself is a physical manifestation of Organisation I's innovation culture. Once a year and for about a week, it becomes a place where Organisation I's employees and stakeholders gather to celebrate innovation and participate in RDDI.

Discussing this concept of tangible manifestations, the research team discussed them in Claire's world, an innovation room, and compared them with Layla's signing up to a UX design course or with Organisation I hiring a Head of Innovation or creating an Innovation University (T19-p, Z25-m & Z50-m). These actions all indicate a certain level of commitment that some participants felt after having experienced RDI.

### Capabilities

#### *Supportive culture - outstanding level of confidence*

Even if there is a lower level of confidence about this, data showed that RDI is an iterative process where participants get uncomfortable, try things out and make mistakes, and it is down to whether they feel supported by their hierarchy and organisation that they will iterate the process. Specifically, and according to a global design agency, successful design organisations allow all employees to engage and get involved in such activities (X3-o). Data showed that when the RDI participant is at a C-level role, enjoy the intervention and see value in it, they will not only implement such practices within their organisation, but they will support other employees to embrace it.

*We ran our first design sprint, about six and a half years ago [...]. The outcomes were good as they led us to walk away and redesign [a product] for example. [...] And so we repeated that I guess a couple of times. [...] So we've got sort of a bit of a cadence running around doing [Data] Hacks and [Design] Sprints, probably one every couple of months. [...] [Then], I was in the shower, literally, and I thought, well, I quite like British summer festivals. I wonder if you were to sort of smash those two things together, what would happen? [...] It'd be like Glastonbury but without the sex and the mud. And I said more seriously, you would have Hacks and Sprints, but we would wrap it in an envelope of something that would be a bit fun, a bit creative. (Lee, 17-p)*

Just as an organisation can influence the outcomes created in the first place, it can also influence their sustainment. Indeed, data evidenced that the culture and practices in place within an organisation will be determining for the future. Several participants commented on the fact that committing to an Innovation practice came from the very top of their organisation; either from a willingness to be more innovative and do things differently, or from witnessing the potential of such activities first-hand.

*So lots of things changed. Some of that is because I like this stuff. And obviously, if somebody likes doing it, they do it more, and they tend to drag other people on the journey with them... And especially when it started to really work, when we got a project where we got paid, [and] suddenly everybody*

*thought it was a marvellous idea! (Claire, D1-p)*

From participating in a first RDI, iterating the experience, and then starting to use such practices on a daily basis, some organisations have developed a culture where the delivery of RDI and/or Design Innovation practices are 'business as usual'. Over the years, they have actively engaged and invested in those practices. Organisation I, for example, who are the farther in their RDI journey have;

- Recruited a Head of Innovation and an Innovation Team,
- Created a voluntary scheme of Innovation Ambassadors across the organisation, who meet once a month and play a crucial role in breaking down silos across the organisation,
- Put in place a pot of money for employees to implement their ideas and run their own innovation projects,
- Created an in-house Innovation University to teach their staff about these practices.

By doing so, they provided for their employees who wish for ways to engage with and commit to RDI and Design Innovation practices. However, it is essential to indicate that it is not possible to force employees to embrace this approach. Some will quickly adopt it, and others might take more time.

*Maybe it happens more regularly because you are encouraging people more often within their professional setting to question. And [...] it's about in these co-creative settings that Rapid Design Interventions construct, there are a set of values and behaviours that are different to the values and behaviours and practices that a lot of employees would find in their traditional work settings.*

*And I think that then says 'well, look, this is, this is okay in our organisation, it is okay to think like this, it is okay to ask questions, it is okay to do this'. And I think that the idea is that it would seep and permeate throughout the organisation. So that they can make those changes to their own working practice, is a possibility. It's not to say it would always happen, but for some, they would start to more naturally ask those questions. Others wouldn't. (T10-p)*

But supporting employees, and giving them time, space, and agency to explore RDI and Design Innovation practices, is essential for the sustainment of RDI outcomes. No matter how the RDI went, if an employee does not feel safe to use these practices in their day-to-day job, they will stop using them.

### 5.7.3.2. Developing relationships

Although less supported by data than ‘committing to a Design Innovation practice’, ‘developing relationships’ was mentioned in 13 activities with 18 references. This code captures the importance of relationships developed amongst RDI participants and between RDI participants and Design Facilitators in supporting the sustainment of RDI outcomes over time.



**Table 5.39:** *Committing to a Design Innovation practice category overview, ‘Developing relationships’ code and sub-codes overview*

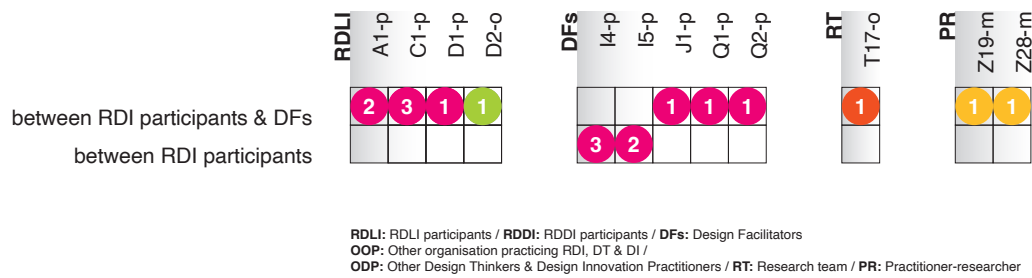
#### Critical review

The data in this section is very contrasted as the type of relationships developed in RDI appears to depend on the RDI intent and form of delivery. On the one hand, RDLI are exclusive interventions, bringing together a handful of carefully selected participants and a few DFs, delivering the intervention in a hands-on fashion. On the other hand, RDDI are more inclusive interventions, attended by a more diverse and larger group of people and DFs that are more less directly engaged in co-creating with participants during the delivery of the activities. As a result, participant-DF relationships are being developed in RDLI, while DFs are excluded from this development in RDDI.

One possible explanation for these meaningful participant-DF relationships developed during RDLI can be found in the data. Indeed, while working together and on an equal footing with the participants, DFs offer their ideas to the participants with no restriction, which results in participants perceiving the DFs as being generous. Another explanation might be that most DFs mentioned by the dataset are very passionate individuals, who were undoubtedly inspired by RDLI participants. They therefore did not perceive the delivery of RDLI as an end point, but as the potential beginning of something greater. In contrast, RDDI participants, due to their common interest and contribution in addressing a challenge, developed a bond, as well as a safe environment, which are great foundations for a possible implementation of ideas.

However, in the context of both types of RDI, these evolved and deepened relationships post-intervention triggered regular interactions that appear to have acted as a reminder for the participants’ Design Innovation practice, and therefore supported the sustainment of outcomes over time.

## Triangulation



## Capabilities

### *Between RDI participants & Design Facilitators - substantial level of confidence*

The data set highlighted that by working closely together, DFs and RDLI participants started building trust and developing rapport. In the context of GRTI, data showed that these relationships went beyond the boundaries of the RDLI. On separate occurrences, research participants bonded on a deeper level with a DF, leading to further collaborations, mentorship, research bids, long-time support and friendships;

*I think, coming away from it, [I want to mention] our relationship. I think it's been ongoing throughout, and I know you've always messaged me, and replied to my Instagram stories and things like that. And I think that's really nice, and it's such a boost, to know that you're still following my journey, which means that you must enjoy what I do. (Grace, A1-p)*

*It was life-changing though, because I met people through that, for example, I met [facilitator's name], and he's had a massive impact on my life. Massive. He's the one who helped me get my job at [company's name] in 2018, and he has been helping me with a project; on a little business I'm working on. He's helped me with that and he's been one of my closest friends and allies. [...] It's changed my life. Because of a number of reasons, including the fact that I met people like yourself, and [facilitator's name], who I've stayed in contact with. (Layla, C1-p)*

### *Between RDI Participants - low level of confidence*

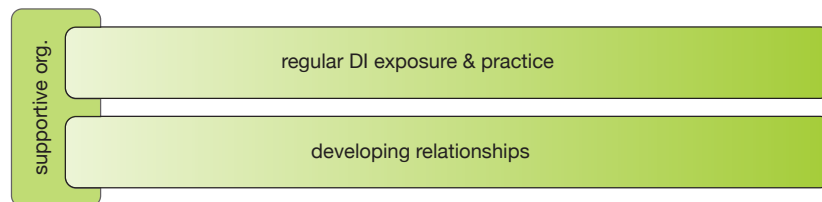
From an RDDI perspective in the context of the Festival, there is some evidence that working collaboratively towards a challenge as a group allowed participants to share knowledge and information and open themselves up to others. In some cases, those relationships resulted in long-term projects and collaborations. However, it is difficult with the data collected to understand if the RDDI are the sole reason, or if the Festival as a whole contributed towards this outcome.

*Okay, another another value of it. I suppose, is in networking, so it's rare to go to the festival or not meet at least one or two people who ask to achieve a set up something with or you just get out a good a good idea or a good you build up a rapport and get to know them as well. (Ethan, I5-p)*

### 5.7.3.3. Summary of the factors influencing RDI outcomes sustainment

This section investigated the three factors influencing RDI outcomes sustainment; the RDI participants' regular practice and exposure to Design Innovation practice following the intervention; an organisation supportive of DI practice; and the RDI participants developing relationships with other participants and Design Facilitators as a result of the intervention.

If all these factors support the sustainment of RDI outcomes, it is essential to note that the support coming from the organisation is decisive. Indeed, the level of support RDI participants receive from their organisation following their participation in RDI will directly impact the longevity of the RDI outcomes, but also their involvement in further RDI and engagement with DI practice.



**Figure 5.44:** *Summary of the factors supporting RDI outcomes sustainment.*



## 5.8. Rapid Design Intervention Theory

Before presenting the theoretical model constructed as a result of this analytical process, it is essential to note that its construction and explanations of it are of *nomothetic* nature, as opposed to *idiographic*. Indeed, this theoretical model “explains a class of situations or events rather than a specific situation or event” (Bhattacharjee, 2012, p. 26). Specifically, it captures Rapid Design Interventions outcomes as well as the influencers of these outcomes and their sustainment at a macro level. Overall, it represents the conditions influencing RDI outcomes and supporting their sustainment in a broader context.

The theoretical model presented at the end of this section (p. 226) is the result of numerous iterations done by myself and the research team throughout the analytical process. I decided to follow Whetten’s (1989) and Bhattacharjee’s (2012) guidance to create the first iteration of my theoretical model (Figure 5.45, p. 225, iteration 1), clearly capturing:

- **Constructs** - the ‘what’ of the theories, which are the important concepts to explain a phenomenon. .
- **Propositions** - the ‘wow’ of the theory, which is how concepts are related to each other. The propositions for my theoretical model will be presented at the end of this section.
- **Logic** - the ‘why’ of theory, explaining why constructs are related.

Constructs have been detailed in 5.7. Results of the analytical process on page 130, while propositions and logic have been introduced. Both propositions and logic will be further detailed at this end of this section.

- **Boundary conditions and assumptions** - the ‘who, where, and when’ of theory, relating to the circumstances under which constructs, propositions and logic work. The boundary conditions and assumptions provide the scope of the theory, and will be presented in 7.4. Limitations of the research on page 261.

As all key components of the theory had been captured, and based on Whetten’s (1989, p. 491) recommendations for a clear graphic depiction of the theory balancing “parsimony and completeness”, I decided to simplify this first model through a second iteration (Figure 5.45, p. 225, iteration 2, version1), which was then discussed and refined during a reflective workshop with the research team (Figure 5.45, p. 225, iteration 2, version 2). Following the reflective workshop, I cleaned up the theoretical model and further refined it to create an intelligible model, where all constructs were clearly captured, leading to its third iteration (Figure 5.45, p. 225, iteration 3).

Figure 5.45: Construction of the theoretical model



At this point in the study, in March 2021, I was independently contracted to undertake a separate research project with Organisation I, where I was allowed by the organisation and the research participants to integrate the data collected in relation to RDDI into my study. So I held onto the model's third iteration until all data related to the Festival had been incorporated into the doctoral study and had undergone the three levels of coding. After the end of this research project in September 2022 and having taken the time to reflect, I was able to critically assess the third iteration of the model, finding it very complex and impenetrable for someone outside of this doctoral study.

Further, I realised it was not sticking to the data, codes and memos as well as I would have expected. As a result, I decided to look back at the results of the analytical process to simplify the theoretical model and create its fourth iteration (Figure 5.45, p. 225, iteration 4, version 1). In preparation of a further workshop with the research team, this model was cleaned and the language clarified (Figure 5.45, p. 225, iteration 4, version 2).

During the last reflective workshop of this study, the research team discussed specifically the propositions and logic of these theoretical models. Thoughts were captured on the previously presented model (Figure 5.45, p. 225, workshop discussion). Finally, the theoretical model was reviewed and modified to incorporate feedback from examiners suggesting to better visualise its dynamics (Figure 5.45, p. 225, 5th & final iteration).

The theoretical model constructed as a result of this study (Figure 5.46), is dynamic, and illustrates the logics between the constructs presented earlier. It is answering the research question “How do organisations and individuals recognise and sustain the outcomes of RDI, and what are the influencers of these outcomes”. It incorporates; the RDI outcomes, the factors influencing them, the factors supporting their sustainment.

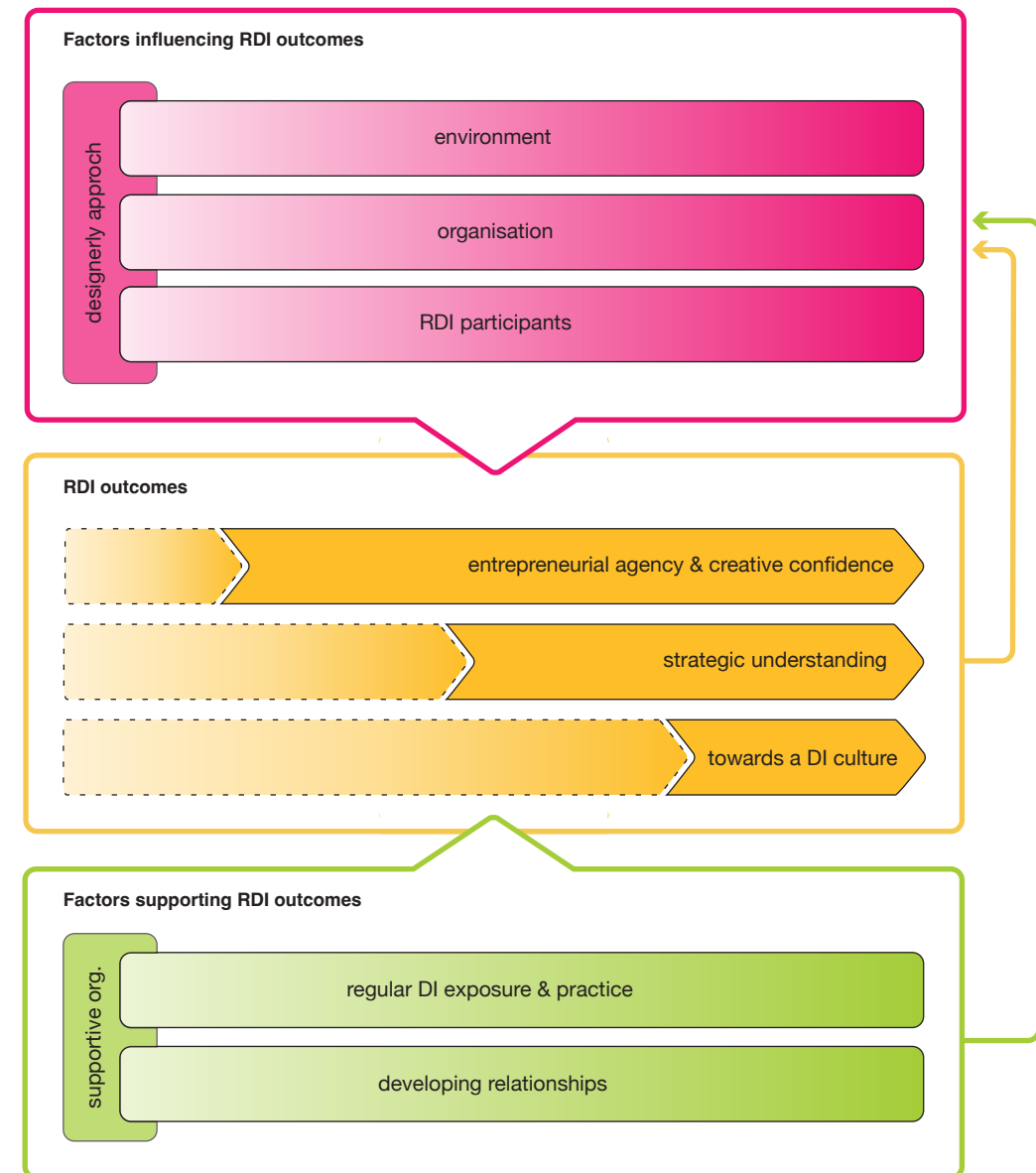


Figure 5.46: The Rapid Design Intervention Theory

The Rapid Design Interventions (RDI) Theoretical model captures three components and their dynamics; the RDI outcomes, the factors influencing RDI outcomes and the factors supporting the sustainment of these outcomes. Prior to reading this model, it is crucial for the reader to understand that there is no prescribed entry point. Design Facilitators designing and delivering RDI, organisations resourcing and supporting RDI or participants attending RDI, may all decide to read it in different ways. However, their understanding of the three components of the model is fundamental to its overall comprehension.

This model presents the three RDI outcomes that participants and organisations recognise; the entrepreneurial agency & creative confidence (outcome 1) of the participant that is being enhanced after the interventions, the participants' strategic understanding

of their organisation (outcome 2) and the organisation's evolution towards a Design Innovation culture as a result of the intervention(s) (outcome 3). These outcomes are co-evolving and interdependent, although completion of one outcome is not a pre-requisite for the commencement of the next.

These RDI outcomes are highly influenced by four major factors; the designerly approach of RDI that can be design-led or design-driven (influencing factor 1), the environment which relates to external aspects such as the industry or the sector (influencing factor 2), the organisation's culture and hierarchy and the support they provide to RDI participants (influencing factor 3), as well as the RDI participants themselves, their mindset and their engagement (influencing factor 4). Although these four factors are influencing the outcomes of RDI, dynamics between these influencing factors also exist. Indeed, the designerly approach of RDI itself influences the RDI participants, their organisation, and their environment.

The sustainment of the RDI outcomes is supported by three factors; an organisation supportive of a Design Innovation practice that allows RDI participants to act upon RDI outcomes and outputs (supporting factor 1), the regular practice and exposure to Design Innovation of RDI participants (supporting factor 2), as well as the relationships that have been developed between participants and Design Facilitators (supporting factor 3). Again, there are dynamics within this component, where the organisation supportive of a Design Innovation practice also supports the regular practice and exposure to Design Innovation as well as the development of relationships.

Finally, it is essential to reiterate that the designerly approach of RDI and an organisation supportive of a Design Innovation practice in this theoretical model are dynamic, and not fixed. These two factors are context dependant and therefore, their effect on other factors varies from one situation to another. The further they become embraced by, and embedded in the other factors in their category, the more the outcomes cumulate and intensify over time. This then influences the delivery of further interventions.

For example, if we look at the outcomes, Violet's (Organisation F) participation in RDI helped her build her entrepreneurial agency and creative confidence (outcome 1), as well as a strategic understanding of her sole-trading business (outcome 2). Having speculated about her potential futures, Violet decided to focus on the first milestone to achieve her long-term vision, which would help build up revenue, reputation, and momentum. In her case, the RDI outcomes stopped there. Though Claire (Organisation D) went similarly through the first two outcomes, it was not to the same depth. Indeed, Claire was so deeply affected by outcome 1, that she not only entirely reframed her business (outcome 2), she also started, as CEO, implementing an in-house Design Innovation culture (outcome 3). She completely took the approach on board and started using some of the tools in her day-to-day practice as an accountant.

## 5.9. Summary

This chapter 'Constructing meaning and theory from the data' demonstrated the rigorous application of Constructivist Grounded Theory principles, mindset and practices throughout the analytical process. With the use of memos as a sense-making tool as I conducted three levels of coding - initial, focused and theoretical - in line with CGT, I demonstrated how I constructed meaning from the data, identifying 3 themes, 9 categories and 26 codes. These epitomise the main constructs of the Grounded Theory constructed as a result of this doctoral study.

The theoretical model presented encapsulates these results by visualising the main constructs, propositions, and logic between (1) the factors influencing RDI outcomes, (2) the RDI outcomes and (1) the factors influencing their sustainment. The first are weighting on the second, when the last are supporting them.

Overall, this chapter raises key questions about design facilitation as redirective practice, as well as the requirements to deliver successful Rapid Design Interventions from a Design Facilitator, RDI participant and an organisational perspective. Further, it initiates a debate about the need for a strategic delivery of RDI as part of a bigger picture, with regular interventions, as opposed to isolated, one-off events.

06

*Discussion*



## 6. Discussion

### 6.1. Introduction

Design academic research aims “to develop an accessible, robust body of knowledge that enhances our understanding of design processes, applications, methods and contexts” (Cooper, 2010). Specifically, this study contributes to the understanding of Design Facilitation as a practice, which Mosely, Markauskaite and Wrigley (2021, p. 10) describe in their systematic review of Design Facilitation literature as “a highly complex, integrative, emergent practice that is innately linked to design process knowledge and understanding”.

In this chapter, I discursively consider the theory and new knowledge constructed through this doctoral study in relation to existing bodies of knowledge. Here, I present Rapid Design Interventions as a directive practice through which participants develop their Entrepreneurial Agency and Creative Confidence and investigate the role of Design Facilitators in the delivery of successful Rapid Design Interventions. In particular, I identify the phenomenon of Design Listening as an essential skill of Design Facilitators in enabling the creation of outcomes. Lastly, I argue the necessity of a strategic delivery of RDI as activities embedded within an organisational culture supportive of Design Innovation and as part of a wider organisational strategy, as opposed to isolated, one-off events.

The contribution of this research is significant to academics interested in the field of Design Facilitation, Design Thinking and Design Innovation, to practitioners and Design Facilitators to enable a more purposeful design and deployment of RDI and to organisations in developing the potential power of design practice and directing their resources towards it.



## 6.2. Entrepreneurial Agency & Creative Confidence

An enhanced *entrepreneurial agency & creative confidence* were evidenced in the results of this study by the RDI participants after taking part in the interventions. 'Entrepreneurial agency' is the capability of an individual in adopting a more entrepreneurial attitude towards innovation and experimentation in order to develop or adapt organisational functionality (systems, processes, and behavioural practices) (Bailey et al., 2018), leading to value creation and/or venture creation (Jones, 2019). Successful entrepreneurial agency is a self-negotiated action directly related to the conviction and perception of individuals (Jones, *ibid.*).

Creativity is "the expression of self" (Hegarty, 2014). It is innate, which means that everybody is creative. So much so that "there's no word in the Tibetan language for creativity or being creative. The closest translation is "natural" (Kelley & Kelley, 2013, p.6). Creativity is something that we lose as we grow up, and through modern education (Rohini, 2018; Land, 2011). Building upon this understanding of creativity, creative confidence is "the ability to come up with new ideas and the courage to try them out" (Kelley & Kelley, 2013). But specifically, it is about helping people in rediscovering their innate creative state, and reminding them how creative they can be (Kelley & Kelley, 2013). Confidence has priorly been identified in the context of RDLI by participants (Lampitt Adey et al., 2019; Bailey et al., 2022a). The increase of confidence was even linked to the validation of the participant as an entrepreneurial individual by Design Facilitators (Bailey et al., 2022a, p. 7), in line with the findings of this study. This can be explained by the fact that the research participants in this study, but also in Lampitt Adey et al. (2019) and in Bailey et al. (2022) were all Get Ready to Innovate participants, and therefore, entrepreneurs. They already had "the confidence to put their ideas into practice", and yet, still "appreciated the confidence building" resulting from the intervention (Bailey et al., 2022a, p. 7).

Both entrepreneurial agency and creative confidence are linked to self-efficacy (Bandura, 1996; Bailey, 2021) and are about the individual taking some control of the goals that they set and the route that they take to achieve them. The results of this study evidenced that RDI contributed to developing these two capabilities in RDI participants. Specifically, confidence & opportunities relates directly to the development of creative confidence, while understanding what is holding the individuals back and bringing focus and clarity relate to the development of entrepreneurial agency. Interestingly, designerly ways of knowing appears to be supporting the RDI participants in developing both entrepreneurial agency and creative confidence by providing the participants with tools and methods to express these capabilities, which helps in building their self belief. Rapid Design Interventions enable a change of perception of self in the participants, which then drives their actions.

It is likely that the *safe space* (Bailey & Smith, 2010) provided by DFs through the RDI enabled and supported the (re)development of such capabilities during the intervention. Post the interventions, data showed that this safe environment was created by the organisations through the *tangible manifestations* - such as in Organisation D, where an innovation room was created, but also through a *supportive culture*. Findings evidence that when the organisation and the hierarchy is *aware* that innovation comes with risk and is *supportive* when failures occur, participants feel encouraged and able to try things out. RDI are an approach to exploring challenges and opportunities, and through the process, RDI participants develop their *entrepreneurial agency* and *creative confidence*.

### 6.3. Rapid Design Interventions as directing practice

Redirective practice as proposed by Fry (2007) is a new kind of design leadership founded on the creation of new knowledge and the gathering of older ones, directed towards sustain-ability and challenging the ‘unsustainable’ status quo. This may not have been an explicit purpose behind the delivery of the RDI observed as part of this study, however, it might have unintentionally begin to address this. Although commercially focused as opposed to ethically focused in Fry’s sense (*ibid.*), the sessions were not solely centred on the creation of an economically sustainable enterprise. In Get Ready to Innovate for example, when working with MSMEs, there were some aspects of exploring how individuals could sustain their business, but also their values overtime.

The identification of RDI outcomes evidenced the role of Rapid Design Interventions in directing the practice of RDI participants. Indeed, the participants showed enhanced entrepreneurial agency & creative confidence post-intervention, especially by developing their confidence & opportunities and designerly ways of knowing, and bringing focus & clarity on their situation. Further, it emphasised the development of the participants’ strategic understanding of the potential business direction of their organisation, leading in some cases to the reframing of the business. Finally, it highlighted that by taking the approach on board, RDI participants and organisations had the ability to catalyse innovation. This outcome was particularly evident in participants of Get Ready to Innovate because the focus of the interventions was on Innovation Readiness (Gribbin et al., 2018; Bailey et al., 2022). Therefore, it is unsurprising to find aspects of innovation readiness, or the preparedness of participants to innovate, reflected in the data.

If it is likely that Rapid Design Interventions are directing the practice of RDI participants towards a more creative set of practices, they are not yet redirecting their practice in Fry’s sense (2007). Indeed, practices are the combination between knowledge, habits, and values of craft skills plus the activities of a professional occupation (Fry, 2009, p. 21). Redirecting one’s practice takes time, energy and consent as it is the iteration of “training, repetition, reflection and correction” that enable a foreign activity to become ‘taken-for granted’ (Fry, *ibid.*, p. 19).

However, this discussion highlights RDI as a favourable environment and a great opportunity for redirecting practice in the future. This point of discussion sparked the following questions; *How difficult is it to accept and continue a new form of practice? How resilient to the forces in the environment is it? How much resource and energy does it take to sustain a new practice for it to become embedded? What could Design Facilitators do during RDI to support the deployment of RDI as an enabler of redirective practice? To what extent does the enhancement of capabilities such as*

*entrepreneurial agency, creative confidence and design capability, support the development and absorption of a new practice?*

## 6.4. The role of Design Facilitators in delivering successful RDI

The review of literature indicated that there is still little knowledge about how DFs influence innovation projects (Minder & Lassen, 2019) and Rapid Design Interventions. In this study, *Design Facilitators* or *designer as facilitator* refers to designers trained through a design education where design principles and practices were established and fundamental and who apply Design Thinking and Design Innovation knowledge in collaborative, participatory and co-design contexts (Minder & Lassen, 2019, p.3; Kimbell, 2012; Mosely et al., 2021). In this section, I discuss what this study revealed about who they are and their unique skill set.

### 6.4.1. Design Facilitators and Non-Design Facilitators

The increasing popularity of Design Thinking outside the design field (Verganti, 2006; Brown, 2008; Martin, 2009) and its perception as an attitude rather than an activity (Cruickshank & Evans, 2012) resulted in both Design Facilitators and Non-Design Facilitators delivering Rapid Design Interventions and through them, a version of the design process (Mosely et al., 2021).

However, this popularisation of design has brought some challenges, one being the opposing values of designers and non-designers (Minder & Lassen, 2019). As Liedtka (2010, p.8) highlighted, if the design approach widely differs from the core values of the management, it is the “core assumptions and decision drivers underlying each approach” that widely differ. Business thinking is rational and objective. Its decision-making process is cold and clean: researching trends, analysing reports and benchmarking competitors, resulting in a set of strategic recommendations. On the other end, design thinking focuses on human experience and real-life behaviours for its decisions. “Reality, for designers, is always socially constructed”, and their mode of thinking is too constructive (Liedtka, *ibid.*, p.8; Martin, 2009; Cross, 1982). To achieve that, it is recognised that designers have developed a skill set that enables them to support participatory and co-creative activities with non-designers (Ambole et al., 2016), having learnt, discovered, or been taught that problems are most effectively solved with a solution-oriented strategy (Cross, 1982).

One aspect that data highlighted is the generosity of Design Facilitators, recognised by RDI participants. Specifically, their willingness to engage and contribute ideas towards the RDI participants’ surprised and shocked some of them. However, when discussed with the research team, I realised that we all agreed that this was an essential part of our job, and that not sharing ideas with participants would hinder not only the process, but also the relationship with the participants. By sharing half-baked ideas, and presenting them as such, DFs lead by example, proving to the participant that it is a safe space and that there is no right or wrong answer.

## 6.4.2. Novice and expert Design Facilitators

The results of the analytical process emphasised the probable correlation between the level of experience and expertise of Design Facilitators and the outcomes produced through Rapid Design Interventions. The findings differentiate novice facilitators (NFs) who are professionals-in-training - often design students or recent design graduates, from expert facilitators (EFs), who are trained design practitioners, academics and researchers (Lampitt Adey et al., 2019). But developing mastery of processes, methods and skills takes time and practice, as Brown (2019) stated:

*There is a difference between the performance of a neophyte and that of a master with thousands of hours of practice. Similarly, rookie teams, even if they contain one or two masters, rarely outperform teams who have developed trust and understanding through previous projects. [...] There is no real substitute for mastery (Brown, 2019, p. 3).*

Although they are experts, EFs know better than positioning themselves as design experts. Conscious of the fact that they do not know all the answers, they however have the skills required to bring people together to address a challenge from multiple perspectives (Lai, 2016). This is very likely the origin of Design Facilitators' perceived generosity. They know that their idea could not reach its potential, unless it is shared, built upon, transformed or even disregarded by a wide range of stakeholders. As opposed to looking for the 'best' answer, they are looking for a better answer (Liedtka, 2010, p.9) by exploring potential futures and what might be true (Martin, 2009).

If NFs have not yet fully developed the extent of their design skill set, they bring with them a freshness, a perspective and a naivety that can be beneficial in building trust and rapport with the RDI participants (Lampitt Adey et al., 2019). Nevertheless, it is crucial to note that the level of expertise of Design Facilitators is not binary. There is a whole spectrum that designers navigate as they develop their expertise through experience and learning by doing (Mosely et al., 2021; Dorst & Lawson, 2009; Dorst, 2011). Mosely et al. (2018, p.1 86) identified that "the expertise level of facilitators impact the learning experiences of non-design[ers]" participating in the intervention. However, I was unable to identify literature discussing the impact of the DFs' expertise when participants are themselves DFs, echoing my (very specific and anecdotal) experience as an EF attending an RDI as a participant.

The review of literature contrasted Design and Non-Design Facilitators against Novice and Expert Facilitators. However, the results of the analytical process solely highlight findings in relation to Novice and Expert Facilitators, and suggest moving beyond the simplistic framing of Design and Non-Design Facilitators. Specifically, it emphasises the need for and builds an understanding of some of the Design Facilitators' specific capabilities, relating their competence-mastery to utilising these capabilities in action.

One of these capabilities, Design Listening, is discussed in the next section.

### 6.4.3. Design Listening as a capability of Design Facilitators

This results from the analytical process highlighted (pro) active listening and questioning as key capabilities of DFs in a RDLI context (5.7.1.1.1, p. 133). Brought together and working in symbiosis, they form the basis of a phenomenon identified in Expert Facilitators; Design Listening. This phenomenon was captured during this study and described in Design Listening: what designers hear and how they respond (Carrion-Weiss et al., 2022), which the research team co-authored.

#### 6.4.3.1. Listening, Listening in Design and Design Listening

Active Listening is the capability of the listener to accurately perceive and recognise other individuals' feelings, perceptions and memories that are "available to the consciousness" through an acute empathy (Rogers, 1959, p.210). Through this phenomenon, the listener properly processes information received from the listened-to, and demonstrates their understanding and interest to them (King, 2008). To achieve this, the listener usually repeats in their own words what they believe they heard from the listened-to, to not only sense-check their understanding, but also to prove that they were following the conversation. By doing so, the listener builds trust with the listened-to (Carrion-Weiss et al., 2022).

Initially a fundamental concept of Health Coaching (Huffman, 2010), Active Listening is also recognised as a core aspect of design facilitation and the design dialogue (Howard & Melles, 2011; Moseley et al., 2021). Indeed, listening is crucial in design, to such a degree it is defined as a strategy by Google Design (Google Design, 2018), as it allows designers to "practice empathy-driven listening" (Carrion-Weiss et al., 2022). In Rapid Design Intervention settings specifically, thoughts, insights, expertise and experience from RDI participants are crucial to address and solve wicked problems (Le, 2018; Zumbrennen, 2018). Going further regarding the role of listening in design, Napier & Wada (2017) recognise proactive listening as an essential capability of Design Facilitators to moderating and building "consensus" in a diverse group with multiple perspectives and account for this diversity.

IDEO's (2021) Creative Listening, the "process of tuning in, listening, and reflecting that helps you get more out of what you hear", which enables the listener to build their own confidence, takes the designers' act of listening a step further. More than listening, the designer then builds something as a result of having heard. Design Listening aligns with Creative Listening in that sense, but brings more individuals together through it and allows the listener to tune-in to "help the listened-to to build their creative confidence" (Carrion-Weiss et al., 2022).

Uncommon but not new, the use of the Design Listening appellation was introduced in design practice by Boltgroup (2016). However, they used the term in the context of the design process and to refer to the act of gaining empathy towards the challenges of users (Carrion-Weiss et al, 2022). If empathy is still an important aspect of the Design Listening phenomenon observed during this study, the intent of Design Facilitators behind its use differs. Here, it is not uniquely a way for the designer to create better designs. Ultimately, Design Listening in a RDI facilitation context is the act of (pro) active listening coupled with “a thought process that allows designers to build creative responses” as a means to co-create with RDI participants a strategic understanding (see 5.7.2.2, p. 196) of their organisation through exploring potential futures, situations and opportunities and detailing preferred futures (Bailey et al., 2019; Simon, 1996; Carrion-Weiss et al., 2022, p.590; Voros, 2017; Kimbell, 2015).

#### 6.4.3.2. Questioning

As seen in 5.7.1.1.1 (p. 133), RDI participants recognised questioning as a core capability of Design Facilitators who asked thorough questions, ‘drilling down’ into the participants’ situation. This questioning process allows DFs to build an understanding of the context and environment within which the organisation operates, as well as its dynamics, capabilities, capacities and resources (Bailey et. al, 2022a). However, it is important to note that

*when they ‘design listen’ [to the participants’ answer], DFs are listening out for connections, possibilities and opportunities whilst removing noise and barriers. They are ‘listening for a formed or unformed idea that holds promise’. They are also simultaneously listening to the bits of knowledge that make the bigger picture (Carrion-Weiss et al., 2022, p. 590-591; Levitt, 2018).*

This allows Design Facilitators to explore and determine the levels of priority of the challenges faced, informing the path for the intervention (Bailey et al.,2022a).

If Bailey et al. (2022a, p. 7) identified the use of why by DFs as a way to enable participants to capture and describe the purpose behind their entrepreneurial endeavours, then the results of the analytical process captured their use of what if? questions (Kimbell, 2015) to challenge, probe, and shape (Carrion-Weiss et. al, 2022). These three facets of Design Listening allow Design Facilitators to respond to what they have heard and achieve different purposes (Carrion-Weiss et al., p. 394-395):

#### **Challenge - the truth**

In this first facet of Design Listening, having heard what the participants told them, Design Facilitators challenge their version of the truth. As reality is socially constructed in design (Liedtka, 2010), DFs shine a new light on the participants’ reality and offer a different perspective. Through this facet of Design Listening,



RDI participants and DFs create new meanings, build rapport and deepen their trust (Lampitt Adey et. al, 2019).

#### ***Probe - the stickiness of an idea***

Because Rapid Design Interventions are relatively short in comparison with more general design practice, Design Facilitators and RDI participants do not have the luxury of time. As a result, DFs must present participants with half-formed ideas to test them as they arise. Here, the trust and rapport established in challenge help DFs to deliver these half-baked ideas in a safe way, once again using what if? questions. The responses from the participants, whether positive or negative, allow DFs to verify the stickiness of an idea. This facet of Design Listening is a “platform for propositions” (Carrion-Weiss et al, 2022, p.594).

#### ***Shape - new futures***

Progressing from challenge and probe, this last facet is also the most reflective, where moments of silence are welcomed by both parties. Shape is a co-reflection of ideas between DFs and RDI participants building upon their “collective experience”, enabling the critical assessment of “alternative perspectives” (Yukawa, 2006, p. 206). Here, DFs and RDI participants become co-creation activists (Bailey et al., 2019), exploring potential futures, identifying and detailing the participants preferred futures (Simon, 1996). This allows DFs to have a conversation with the dynamic materials of their design situation (Schön, 1992), the RDI participants and their enterprise. This facet of Design Listening is a “proposition for frame creation” (Carrion-Weiss et al, 2022, p. 595).

### 6.4.3.3. Final Remarks on Design Listening

Design Listening is about DFs “listening and having heard” (Carrion-Weiss et. al, 2022, p.590), leading to a meaningful discussion between them and the RDI participants (Moseley et al., 2021). The new understandings and meanings built allow for individual and collaborative speculation to take place and create new knowledge. Design Listening builds upon Martin’s (2009) dynamic interplay mindset and allows DFs and RDI participants to construct a speculative future together. It is likely that Design Listening influences the way DFs are being perceived by RDI participants and thus, enables the development of trust and rapport. Design Listening is linked to design dialogue, and the required capability of Design Facilitators to “encourage and mediate diverse opinions, questions, as well as re-frame and re-orientate participants’ ideas and contributions” (Mosely et al., 2021, p. 7). It is also probable that Design Listening is a capability related to design expertise and is an emerging capability of novice facilitators, and a core one of experts facilitators.

The emergence of Design Listening prompts many observations and questions that

would need to be addressed in further research to better grasp the extent of it as a phenomenon. If Design Listening is a means to context-building for Design Facilitators, it would mean that this phenomenon is directly related to the delivery of successful RDI, where it is not only essential to build an understanding of the challenges faced by organisations and their environment, but also to build context-specific outputs. Further, in 2010, Paul Bennett argued for the need to overlap Design Thinking with Design Doing (Design Council, 2010). In the light of Design Listening as a new phenomenon, it raises the question as to whether a model or framework capturing the essence of Design Thinking, Design Doing and Design Listening and their dynamics exists. And if so, if it would allow the capturing of the true nature of the act of designing.

Lastly, it is essential to note that Design Listening was only identified in the context of Rapid Design-Led Interventions. If the phenomenon may be happening too in a design-driven context, it is likely that it is easier to observe in RDLI due to the close proximity between DFs and RDI participants.

#### 6.4.4. Summary

This section highlighted the crucial role of Design Facilitators in delivering successful, as the designers and facilitators of the interventions. Their design training and unique skill set, as initially defined by Cross (1982), support the delivery of RDI and the engagement of participants throughout the process. Further, their competence-mastery of design capabilities can influence the RDI outcomes. They might have little control over the RDI participants' mindset, but with a skilful application of their capabilities, they have the power to manage participants' expectations prior to the interventions and build trust and rapport during the session. Through Design Listening they challenge the participants' version of the truth, probe the stickiness of ideas generated and shape new narrative for organisations.

## 6.5. Strategic delivery of Rapid Design Interventions

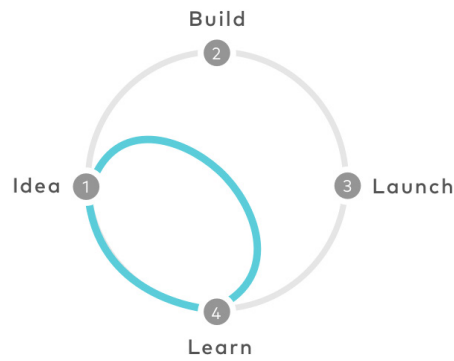
### 6.5.1. Rapid Design Interventions as an Innovation catalyst

Data emphasised the pace of Rapid Design Interventions as one of the factors influencing the RDI outcomes, highlighting active, intense and rapid as the key qualities of the interventions. These qualities became challenges at times, when it felt overwhelming. These observations align with O'Donnell & Bucolo (2016, p. 383), who state that the intensity of RDI can be an issue at times, where RDI participants need to keep their focus as “if a participant misses a key moment it will likely impact their experience and the quality of their output”.

But rapidity in this context is not necessarily a disadvantage. The fast-paced format enables Design Facilitators to “push attendees to get a result by the conclusion of the sprint” and allows RDI participants “to leave their comfort zone and consider an alternative way of solving complex problems” (O'Donnell & Bucolo, 2016, p.383). The time constraint enables the rapid generation and development of ideas, the pace allowing DFs “to invite participants to put their hesitancy or discomfort about an idea on hold so that its potential can be rapidly explored whilst not getting bogged-down in details” (Bailey et al., 2022a, p. 8). Indeed, the pace allows RDI participants and DFs to generate multiple ideas offering many possibilities, from multiple perspectives. As a result, the RDI allow participants to explore many versions of their organisation's potential futures, build a strategic understanding of it, and validate the preferred futures as the right direction (Bailey et al., 2022a; Knapp, 2016; Simon, 1996; Google Ventures, 2019).

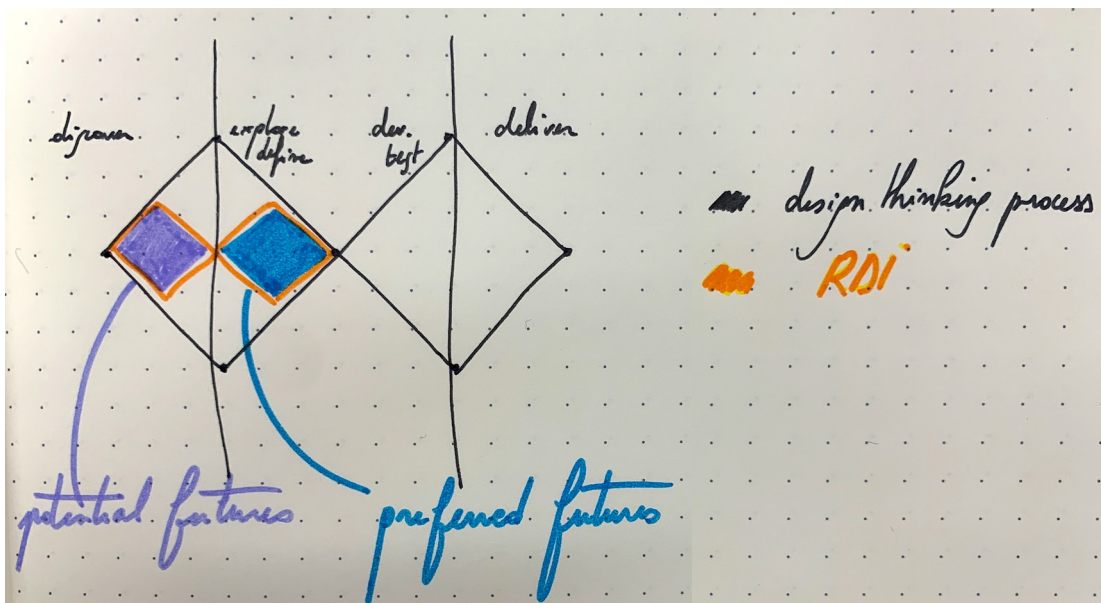
When talking about a rapid design intervention, the term rapid can also be understood as the pace through which DFs and RDI participants go through a cycle of the designing process. Rapid Design Interventions find their origin in design thinking, and follow a similar process to the design thinking process(es) (Design Council, 2005, 2021; Stanford University, 2010; IBM, 2021). Many RDI indeed take inspiration from these models to structure their interventions.

As seen in “5.7.2.2.1. Business directions” on page 196 and in “6.4.3.3. Final Remarks on Design Listening” on page 240 ,RDI are about building a speculative future. They are about navigating the world abduction designers live in and identifying “what might be true” in the future of the organisation (Martin, 2009). RDI take participants on a “voyage of discovery” without having to deliver a fully fleshed output. This is supported by Google Ventures (2019) who highlight that the Design Sprint “gives teams a shortcut to learning without building and launching” a finished product (see Figure 6.1, p. 243).



**Figure 6.1:** Google Venture's (2019) Design Sprint shortcut

If, theoretically, RDI allows DFs and participants to go through the entire process, findings in relation to the RDI outcomes show that exploring potential futures leads to the selecting and detailing preferred futures, which allow a strategic understanding of the 'business directions'. These findings prompted me to wonder if RDI were indeed taking RDI participants through the whole process, or if they were going through the whole process as part of its initial stages, as shown in Figure 6.2 (p. 243) using the Design Council's Double Diamond (2005) as an example.



**Figure 6.2:** The RDI process on the Double Diamond (2005)

This RDI process reminds us of the intent of RDI. They are not aiming at developing the final and perfect output. Rather, they are aiming at speculating about what the final, long-term output might be by exploring potential futures and learning about such output by detailing preferred futures through rapid 'visualisation' and prototyping. This rapid speculative exploration is only a small part of the work needed to allow

organisations to move “from the current state, or taking steps to move beyond it, to a preferred state in a matter of days” (O’Donnell & Bucolo, 2016, p. 371).

Lastly, this understanding of Rapid Design Interventions as an innovation catalyst highlights the mechanisms behind developing an organisational ‘design maturity’ and adds to the different Design Value and Maturity Models (Buley, 2019; Gardien & Gilsing, 2013; 2014; Westcott et al., 2013). Specifically, findings evidenced that RDI were supportive of RDI participants’ enhanced designerly ways of knowing, leading them to take the approach on board. This suggests that the outcomes delivered through RDI coupled with a strategic use of RDI by organisations can help organisations reach a higher level of design maturity and move towards a Design Innovation culture.

6.5.2. RDI outcomes & their sustainment

Some constructs identified in this doctoral study and that form the basis of the Rapid Design Intervention theory include O’Donnell & Bucolo’s (2016) preliminary observations of DLI Sprint outcomes (see Table 6.1 below), while expanding them.

Further, the Rapid Design Intervention theory adds new constructs previously unknown as well as a new dimension highlighting the logic between those constructs. This theory along with the previous section shows the potential of Rapid Design Interventions to catalyse innovation within organisations.

O’Donnell & Bucolo (2016) Outcomes	O’Donnell & Bucolo (2016) Facilitator Observations	Rapid Design Intervention theory construct including & expanding O’Donnell & Bucolo (2016)
<i>Raise awareness</i>	<i>The first step in the innovation journey is to establish that there is a need for change or a desire to explore alternatives and raise awareness.</i>	Factors influencing RDI outcomes   Organisation: <ul style="list-style-type: none"> <li>• Culture - RDI intent &amp; deployment</li> <li>• Hierarchy - aware</li> </ul> RDI outcomes   Entrepreneurial agency & creative confidence: <ul style="list-style-type: none"> <li>• Designerly ways of knowing</li> </ul>

O'Donnell & Bucolo (2016) Outcomes	O'Donnell & Bucolo (2016) Facilitator Observations	Rapid Design Intervention theory construct including & expanding O'Donnell & Bucolo (2016)
<b>Capability transfer</b>	<i>A key goal with the DLI Sprint is that it is accessible and in time repeatable. We pride ourselves on ensuring that attendees can use this approach in their own practices.</i>	RDI outcomes   Entrepreneurial agency & creative confidence: <ul style="list-style-type: none"> <li>• Confidence &amp; opportunities</li> <li>• Designerly ways of knowing</li> </ul> RDI outcomes   Towards a DI culture: <ul style="list-style-type: none"> <li>• Taking the approach on board</li> </ul> Factors supporting RDI outcomes sustainment   Committing to a DI practice: <ul style="list-style-type: none"> <li>• Regular practice &amp; exposure to DI practice</li> </ul>
<b>Show the value of design</b>	<i>The value of design and DLI continues beyond the sprint as the mindset we encourage provides new ways of approaching complex problems. The sprint provides a pathway to preferred future in a controlled way via experiments and projects.</i>	RDI outcomes   Entrepreneurial agency & creative confidence: <ul style="list-style-type: none"> <li>• Confidence &amp; opportunities</li> <li>• Bringing focus &amp; clarity</li> </ul> RDI outcomes   Strategic understanding: <ul style="list-style-type: none"> <li>• Business directions</li> </ul>
<b>Identify champions</b>	<i>Identifying champions who will continue the journey is essential.</i>	Factors supporting RDI outcomes sustainment   Committing to a DI practice: <ul style="list-style-type: none"> <li>• Organisation supportive of DI practice: mechanisms to move forward</li> </ul>
<b>Stimulate different conversations</b>	<i>Throughout the sprint and beyond we advocate thinking, working and engaging differently.</i>	Factors Influencing RDI outcomes   The designerly approach of RDI: <ul style="list-style-type: none"> <li>• RDI participant selection</li> </ul> RDI outcomes   Strategic understanding: <ul style="list-style-type: none"> <li>• Reframing the business: challenging the status quo</li> </ul>

**Table 6.1:** *O'Donnell & Bucolo's (2016) DLI Sprint preliminary observations and the relating constructs identified in this study.*

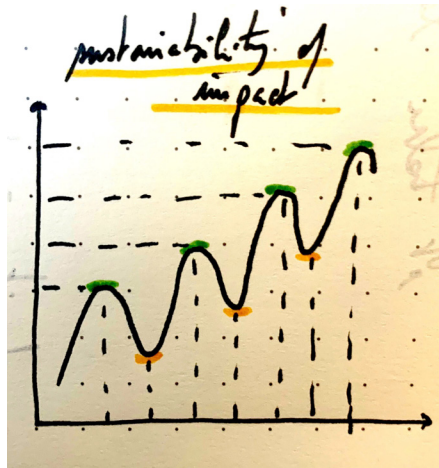
However, and because innovation takes time, it can be difficult for participants, their hierarchy, and their organisation to fully appreciate the RDI outcomes. One might ask how long does it take for softer impacts to amplify and transform into hard numbers? Although it might vary from one organisation to another, Claire, the CEO of Organisation D addressed this question during her interview;

*Part of that [intervention] was recognising that either we had to train the existing staff to be better at this, or we had to hire somebody who was good at it. And that turned into a role that we did recruit for, and she joined us in spring 2018. But it was really slow when we did the assessment because at the ERDF [European Regional Development Fund, one of the funding bodies of Get Ready to Innovate], you have to fill out a load of forms about, has your turnover improved? No. Have you created any jobs? No. Have you created any new products? No. But that was because they were asking too quickly. And I would say that there has been all of those things, but it took three years to recognise the results. (D1-p, Claire)*

It appears that RDI quickly transform the individuals participating, but that it takes a lot longer for the individual's mindset and actions to transform the organisation. Findings and observations specifically highlight the importance for the 'hierarchy' of being 'aware', 'supportive' and 'involved' in Rapid Design Interventions, but also of establishing a culture that is supportive of such practice to allow RDI outcomes to be sustained and therefore, recognised. This was demonstrated by Organisation I, its culture supportive of DI and its hierarchy involved in RDI and DI. There, RDI delivered as part of their Festival ended up catalysing innovation not only in-house, but in external organisations.

O'Donnell & Bucolo's (2016, p. 381) study aligns with the need for the delivery of embedded Rapid Design Interventions to reach their full potential, as opposed to isolated, one-off events. The organisation used for their case study had "undertaken a successful domestic DLI campaign over a period of 12 months" prior to engaging with a DLI Sprint approach. Their case study highlights "considerable shifts in attitudes and acceptance of new ways of working" as a result of the intervention. On the other hand, as Grace did not engage in any further RDI, nor took the approach on board, Organisation A showed very little signs of sustained outcomes. The most likely explanation is that this unique attendance to a RDI did not impact Grace enough for her start engaging with the Design Innovation practice on a regular basis after its delivery.

If this shows the power of RDI when they are fully embedded within a wider organisational strategy, it also raises a few questions. *What nature of stimuli is enough? How often should participants engage with RDI to sustain their outcomes? And how often should participants engage with RDI for growth of RDI outcomes?* These are the questions I captured in one of my memos in March 2021, shown in Figure 6.3 (p. 242).



**Figure 6.3:** *The evolution of the value created by RDLI overtime and with stimuli, Carrion-Weiss (March 2021)*

In addition, the differences in results between larger organisations and smaller ones led to further questioning. *Can a supportive hierarchy in a larger organisation be interchangeable with how a sole trader prioritises innovation? Or could sole traders working with an external body like in the context of GRTI, be supportive of their DI practice while being supported in directing their practice?* Bailey et al. (2022a, p. 9,) respond to these questions in the affirmative, linking the DFs role in helping RDI participants prioritising innovation, and state that;

*“Much of the data provided by participants indicates that their confidence in their own ability to come up with and develop sustainable innovation stemmed from the way in which DFs took their ill-formed ideas seriously and built upon them rather than dismissing them. DFs observed that design-led innovation readiness relies on how well fragments of ideas can be brought together to form a robust whole and that in the collaborative act of envisioning multiple possible futures and aligning them with an organisation’s values, ambitions and purpose, innovation readiness is not just measured, but nurtured.”*

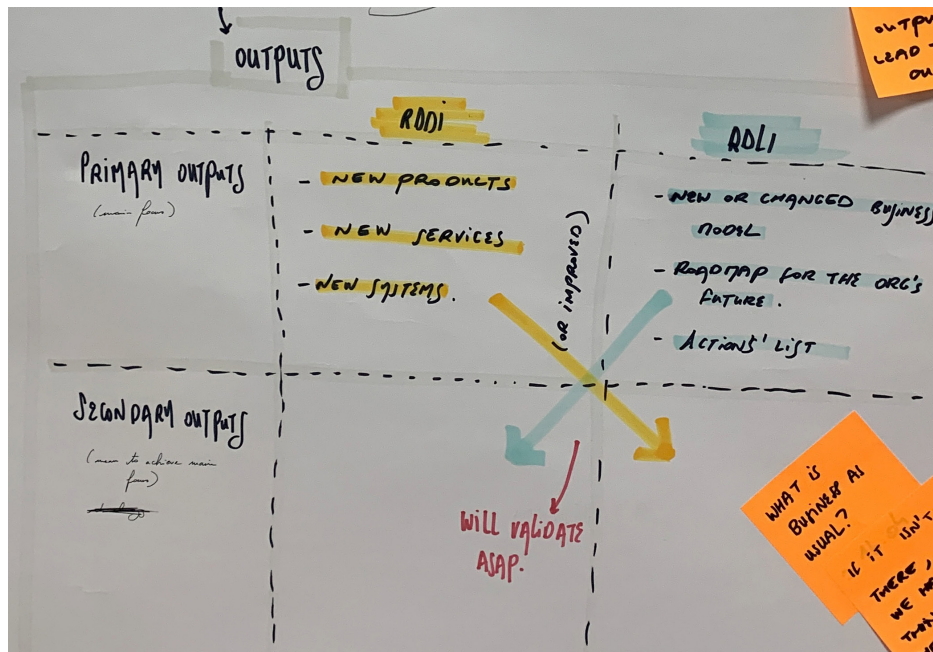
Finally, revisiting the intent of the different RDI approaches;

- **Rapid Design-Driven Interventions** are aiming at the development or betterment of a product, a service or even a system (Verganti, 2009) and can resemble Design Sprints, popularised by Google Ventures (Knapp et al., 2016).
- **Rapid Design-Led Interventions** are an exploration of the potential futures for the organisations, leading to the creation of a strategy (Design Council, 2021) to realise their preferred future (Simon, 1996)

I observed that the intended outputs - or primary outputs, of one type of RDI approach, can be unintended outputs, or secondary outputs in the other type of RDI approach, that is to say outputs that support the delivery of the primary outputs, as captured in Figure 6.4 (p. 248). Although this study was not investigating outputs and there is little data about it, if RDLI and RDDI have the potential to deliver similar outputs, it raises the

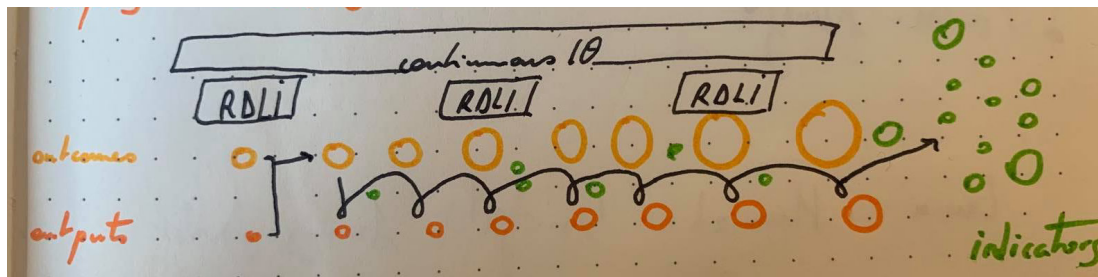


question to whether the pursuit of certain outputs is related to the delivery of specific outcomes.



**Figure 6.4:** The crossover between primary and secondary outputs of RDDI & RDDI

If so, to what extent does the quality of outputs influence the sustainment of outcomes? Does the sustainment of outcomes then influence back the quality of outputs, and so on? Does a low quality of outputs mean a low level of outcomes? Addressing this question, I captured in a memo in August 2021, my thoughts about the relationship between RDI outputs, outcomes, and indicators.



**Figure 6.5:** The evolution of the value created by RDDI overtime with regular RDDI and a continuous innovation practice, Carrion-Weiss (August, 2021)

Or are Rapid Design Interventions a great learning experience anyway? This is what Matthew, from Organisation J, believes:

*Our involvement in sprints, running sprints or participating in sprints, at this point in time, it's probably going to be more for that capability building and exposing more of our own staff to sprints and that way of thinking and things. So, I suspect we'll do that in the next year or two, whether it's with [Organisation I] or just on our own terms. But you know maybe even start doing some mini sprints or going into other teams to run a sprint for them, just to start building our chops in that space and across the business. (Matthew, J1-p)*

## 6.6. Summary

This chapter discussed the role of Rapid Design Interventions and Design Facilitators in enabling outcomes. By supporting the enhancement of the RDI participants' entrepreneurial agency & creative confidence, it is likely that RDI and DFs enable a change of perception of self in the participants, which then drives their actions.

This discussion further highlighted that there is an education to be had within organisations to better understand the differences between outcomes and outputs, and how success is being measured. But it is also the organisation's responsibility to determine what success means for them. *Is 'success' in Rapid Design Interventions about transformative mindset and directing practices, or is it about tangible outputs and KPIs? Or is it about the delivery of outputs of quality, that support the sustainment of RDI outcomes?* It is likely, based on this discussion, that the meaning of successful RDI given by organisations to such activities will influence their organisational culture, their intent in the deployment of RDI and therefore, the RDI outcomes and their potential sustainment.

Lastly, this discussion indicated that through the act of designing products, services, systems, organisations and strategies, together with RDI participants, DFs change people, and their practices, as well as develop their unique design capabilities, such as Design Listening. "Designers design, but how they are themselves designed, and what is designed by the designing of what they design is rarely recognized or understood" (Fry, 2009, p. 28). This chapter is an initial step towards addressing this statement.

# 07

## *Conclusion*



## 7. Conclusion

### 7.1. Introduction

Using a Constructivist Grounded Theory approach (Charmaz, 2000) to design research, I have been able to rigorously build upon my prior knowledge and experience in the area of enquiry and capture data by engaging with research participants and data set contributors who were either experts by training or experts by experience. The analytical process allowed a refined focus of the study; moving from identifying indicators and measures of the impact of Rapid Design Interventions to understanding what RDI leaves behind, the outcomes, and why these outcomes occur. The identification of three key outcomes, four factors influencing these outcomes and three factors supporting them and their logic, form the basis of the Rapid Design Intervention Theory presented in 5.8 (p. 224), contributing to a better understanding of Design Facilitation as a design practice. In addition, I identified Design Listening as a core capability of Design Facilitators and presented recommendations for the delivery of RDI by DFs, their deployment by organisations, and their practice for RDI participants.

This chapter highlights some of the limitations in the study, namely the Covid-19 pandemic and the tedious application of CGT. It presents some personal challenges I faced in conducting this study. Finally, it suggests further research foci around Design Facilitation, the difference between Rapid Design-Led and Rapid Design-Driven Interventions, and Design Facilitators' core capabilities.

## 7.2. Contributions to knowledge

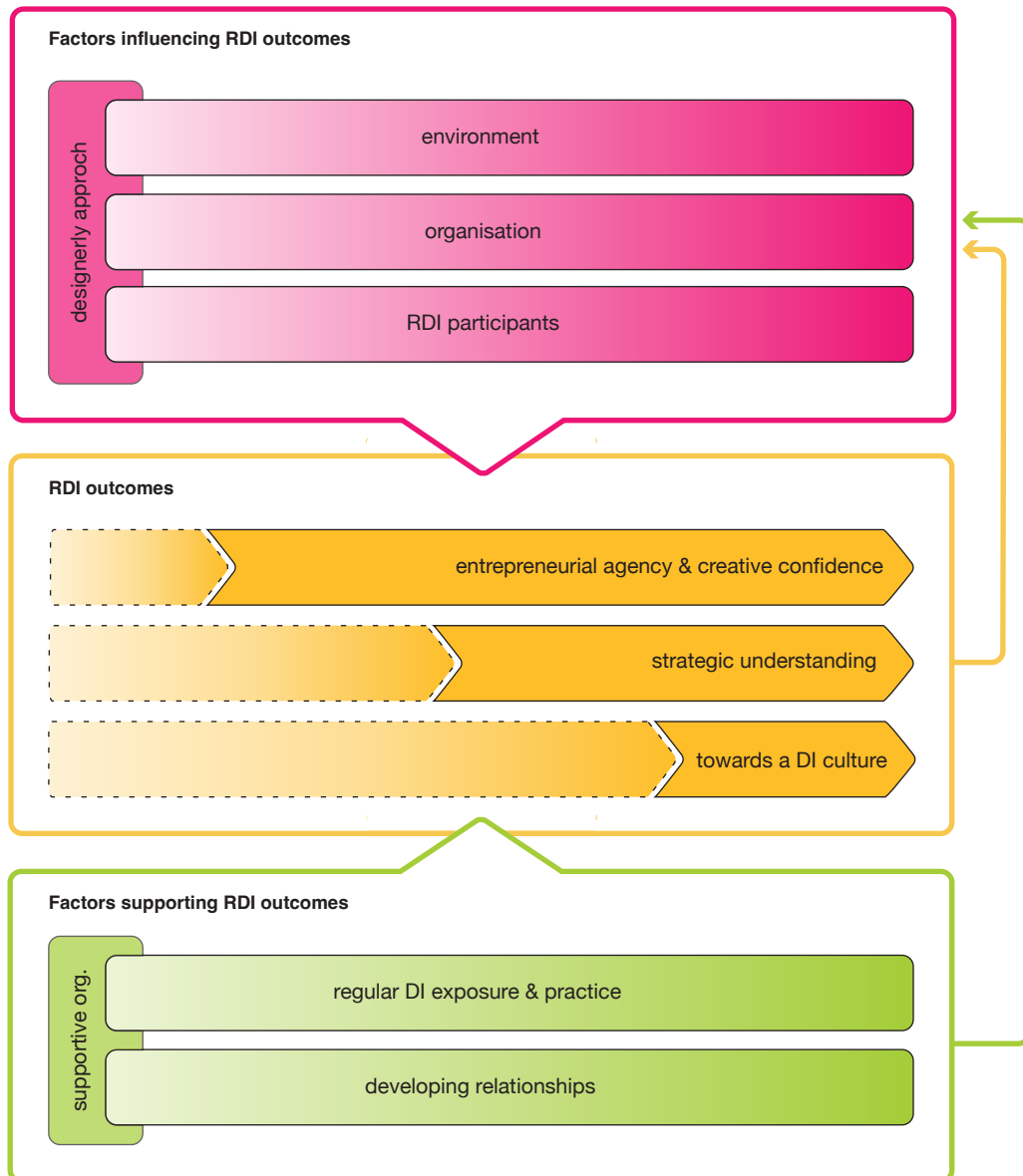
In order to present the contributions to knowledge, I believe it is essential to revisit the research question this study aimed to address:

*How do organisations and individuals recognise and sustain the outcomes of rapid design interventions, and what are the influencers of these outcomes?*

A literature review highlighted the identification of indicators and measures of Rapid Design Interventions' impact as a gap in knowledge before the initial coding phase prompted a refined focus of the study. The consequent focused and theoretical coding phases enabled the development of a Rapid Design Intervention theory. The discussion and contextualisation of results in relation to existing bodies of knowledge contributed to the identification of Design Listening as a core capability of Design Facilitators. Lastly, the methodological approach employed to conduct this study also makes a methodological contribution within the context of design research. These three key contributions to knowledge are presented in this section.

### 7.2.1. Rapid Design Intervention theory

This study identifies key RDI outcomes, factors influencing and factors supporting the sustainment of these outcomes, and draws out their dynamics. By significantly expanding on O'Donnell & Bucolo's (2016) preliminary observations, this study will enable the design research community to understand RDI as a mechanism better. The Rapid Design Intervention theory (Figure 7.1, p. 255) highlights the value of specific models of Rapid Design-Led and Design-Driven Interventions, namely Design Sprints and Get Ready to Innovate, which brings more certainty about these approaches, their potential and their value. Eventually, this will help the design community to better manage participants' and organisational expectations, give more credibility to RDI and build trust amongst those they are trying to engage.



**Figure 7.1.** *Rapid Design Intervention theory*

### 7.2.2. Design Facilitation and Design Listening as a core design capability

This doctoral study contributes new knowledge concerning Rapid Design Interventions by focusing on Design Facilitation as a practice, which is under-studied and under-discussed (Mosely et al., 2021). Overall, it contributes to design research communities by developing an understanding of Design Facilitation as a design practice, specifically, the capabilities of Design Facilitators and how they impact Rapid Design Interventions, which Minder & Lassen (2019) identified as a gap in knowledge. This knowledge can also be significant for design practitioners by articulating Design Listening as a Design Facilitator capability. The presentation of the initial understanding of Design Listening as a capability will aid in supporting the training and growth of Novice Facilitators.



This study moves away from a Design and Non-Design Facilitators framing, preferring the Novice / Expert facilitator frame, where design facilitation expertise is developed through practice and over time (Mosely et al., 2021; Dorst & Lawson, 2009; Dorst, 2011). Further, it identifies Design Listening as a capability of Expert Facilitators, which contributes to building an understanding of the DFs' engagement in design dialogue, which Mosely et al. (2021, p. 7) identified as a gap in knowledge. By listening proactively to the participants and using responses that challenge the participants' truth, probe the stickiness of an idea and shape new futures, DFs demonstrate that they have listened effectively and responded skillfully (Carrion-Weiss et al., 2022).

### 7.2.3. Methodological contribution

As highlighted in 4.2.3. Rationale on page 83, Constructivist Grounded Theory is a methodological approach that is rarely used in design research. By rigorously applying the CGT mindset, methods and principles, this study contributes to exemplifying the use of CGT in design research. Although design practice is perceived by many as being of a constructivist nature (Boltgroup, 2016; Cross, 1982; Dorst, 1997; Schön, 1983; Spencer & Hilton, 2010), this study contributes to building rigour in design research. Further, the use of a participant triangulation, which detailed searches have failed to identify in existing literature, builds upon the plurality of realities in constructivism. It also contributes towards understanding a phenomenon - Rapid Design Interventions - from many perspectives, allowing many voices to express themselves. As a result, this participant triangulation allows for greater robustness and confidence in the data set.

### 7.3. Recommendations for ‘successful’ Rapid Design Interventions

As a result of the study and based on insights from the data set, I was able to draw some key recommendations for the successful delivery of RDI by DFs, their deployment by organisations, and their practice for RDI participants.

#### 7.3.1. Recommendations for Design Facilitators designing & delivering RDI

##### ***Design Facilitators Recommendation 1 - Prepare thoroughly***

Treat Rapid Design Interventions like projects and research the organisation, their environment, and the potential participants. You should also take time to meet with the host organisation to understand their intent and manage their expectations. Discuss with them the importance for the interventions to be part of a bigger piece of work, or strategy, for greater outcomes.

##### ***Design Facilitators Recommendation 2 - Make the process obvious***

As a Design Facilitator, you should put yourself in the shoes of participants who are attending their first Rapid Design Intervention and discovering the approach. It is new, intense and rapid, which can be confusing and overwhelming. Extra time to explain the process should be accounted for at the beginning of the intervention, before moving on to a new stage, and at the very end. Explaining clearly the stage’s aims and objectives, and the desired outputs, or outcomes, will give participants clear directions, and a better understanding of the process.

##### ***Design Facilitators Recommendation 3 - Bring multiple perspectives***

By bringing multiple perspectives and lenses during Rapid Design Interventions you can, as a Design Facilitator, challenge participants further. This can be achieved by having different Design Facilitators, experts in the area the RDI is looking at, or a very diverse group of participants. When none of these is possible, the Design Facilitator should embody these different perspectives and encourage the participant(s) to do the same.

##### ***Design Facilitators Recommendation 4 - Take regular breaks***

Regular breaks are necessary for the participants to gather themselves and recover from what can be a very intense activity for those not used to such practices. It will also allow you, as Design Facilitator, to check on the participants. *How are they feeling? How is it going? Is this what they expected?* By doing so, you will be able to manage their expectations, while building trust and rapport.

##### ***Design Facilitators Recommendation 5 - Recap & unpack***

When the RDI are delivered over multiple days you should, as a Design Facilitator, make the time at the beginning of each new day to review with the participants what

has been done during the last session(s), and unpack the progress that has been made in between, if any. This will allow the participants to understand the purpose between the activities, and how they are connected.

#### ***Design Facilitators Recommendation 6 - Practice often***

As a Design Facilitator, you should regularly engage with Rapid Design Interventions and their participants as it will enable your growth as facilitator and the mastery of key design facilitation capabilities, such as Design Listening. It is only over time, and through regular practice that you will learn how to master such capabilities.

### 7.3.2. Recommendations for organisations using RDI

#### ***Organisations Recommendation 1 - Lead by example***

Build an awareness of Rapid Design Interventions across your leadership team, invest in such activities and involve your leadership in them. Put in place mechanisms (materials and physical) and a culture supportive of such practices, which will enable RDI participants to engage with and further develop the design capabilities they were exposed to during the intervention.

#### ***Organisations Recommendation 2 - Be strategic***

Rapid Design Interventions should not be isolated, one-off activities. They should be part of a bigger picture with clear objectives and intent. By ensuring outputs are not lost and encouraging the continuation of work post-intervention, your employees will develop their design capabilities and grow their confidence and entrepreneurial agency. Ultimately, your organisation will reap the benefit of such practices.

#### ***Organisations Recommendation 3 - Break down silos***

To innovate, a diversity of perspectives is needed. Within your organisation, this can be achieved through Rapid Design Interventions, either by breaking down silos and bringing employees from different departments and stakeholders together, or by working closely with Design Facilitators who will encourage you to consider multiple perspectives. Or both. By so doing, ideas generated will be more robust, more relevant, more likely to be carried forward and not disregarded by another team.

#### ***Organisations Recommendation 4 - Be patient***

Innovation takes time, and although Rapid Design Interventions are valuable, it can take time for change to occur and to identify indicators. Do not solely focus on the number of ideas produced, or new projects that resulted from RDI. Consider reviewing your KPIs to encompass the full impact of RDI, whether it is their tangible impact as a quantitative summary of the activity, the *outputs*, or their intangible impact as the change that occurred as a result of the activity, the *outcomes*.

### 7.3.3 Recommendations for RDI participants

#### ***RDI Participants Recommendation 1 - Be open-minded***

Come open-minded to the Rapid Design Intervention. Design Facilitators will navigate with you a wide range of potential solutions - some very different, or far from what you may have imagined. Together you will explore what the future of your world could be, before narrowing it down to what you would like it to be, or what holds most promise. Be ready to be challenged and remember; it is not personal. It is the very nature of Rapid Design Interventions to bring new perspectives in and if you follow the process, you should be positively surprised by the end of it.

#### ***RDI Participants Recommendation 2 - Be proactive***

Design Facilitators will be there during the Rapid Design Intervention to guide you through the process. You will work together, hand-in-hand. They need you. They might know everything about the RDI process, but they do not know anything about you and your organisation's situation. Be proactive, contribute and engage. Is there anything Design Facilitators can help you with? What do you want to get out of the session? Let the Design Facilitators know.

#### ***RDI Participants Recommendation 3 - Step out of your comfort zone***

The process you are about to undertake in the Rapid Design Intervention might be new and uncomfortable. Please, remember that Design Facilitators are not here to judge you, and that no idea is a bad idea. Design Facilitators and you will work together towards a common goal, and your opinions, knowledge and experience are invaluable. Don't be scared, it is a safe space!

#### ***RDI Participants Recommendation 4 - Trust the process***

If you are new to Design Innovation, remember: Design Facilitators know what they are doing. They are following a process that might be unsettling for you at first, but this is because you are going through the fuzzy front end of innovation. As you will progress, it will start making sense, you will settle down and feel more comfortable.

## 7.3.4. Recommendations summary

### Rapid Design Interventions (RDI) Recommendations

#### Design Facilitators | Designing & delivering RDI

01. *Prepare thoroughly the organisation, their environment and potential participants.*
02. *Make the process obvious and take extra time to explain it throughout RDI.*
03. *Bring multiple perspectives together with a diverse group of participants and facilitators.*
04. *Take regular breaks to give participants time to process information.*
05. *Recap & unpack the work undertaken before moving on.*
06. *Practice often and regularly engage with RDI to grow as a facilitator.*

#### Organisations | Resourcing & supporting RDI

01. *Lead by example by putting in place mechanisms and a culture supportive of RDI.*
02. *Be strategic with RDI. Define clear objectives to ensure the work is carried on post-intervention.*
03. *Break down silos and bring employees from different departments together with stakeholders.*
04. *Be patient, innovation takes time. Consider reviewing your KPIs to capture outputs and outcomes.*

#### Participants | Attending RDI

01. *Be open-minded and ready to explore what the future of your organisation could be.*
02. *Be proactive, contribute and engage as your perspective is unique and invaluable.*
03. *Step out of your comfort zone and remember that no idea is a bad idea.*
04. *Trust the process, although it might be unsettling at first. As you progress, it will make sense!*

**Figure 7.2.** *Rapid Design Interventions (RDI) Recommendations*

## 7.4. Limitations of the research

The focal point of my research, Rapid Design Interventions, were at risk due to the Covid-19 pandemic, as all physical delivery of these interventions had ceased. Some were delivered online between 2020 and 2021, which raised an *unknown* early on in the study. *Do the different types of delivery alter the value of these activities for organisations?* Indeed in my experience, participants often praised the creative energy that was sparked from being in the same room with designers, stakeholders and colleagues, working together towards a shared goal.

In addition, the pandemic brought many challenges for organisations, where many were either fighting for survival or had to rapidly adapt and pivot. Consequently, numerous pre-identified organisations who had agreed to participate in this study were unable to do so. This led me to a convenience sampling strategy, recruiting research participants from Get Ready to Innovate and, later, Design Sprint participants from the Festival organised by Organisation I, which narrowed the breadth of the study, and was time-consuming.

Constructivist Grounded Theory allows multiple interpretations of the data. I did my best to present data regularly to the research team so we could debate the meaning constructed from it. Finally, due to the chosen methodology, I ended up with a lot of data to be analysed, which felt overwhelming at times. Nevertheless, I would have benefitted from workshops with the different research participants and data set contributors groups to challenge and nuance it. The delays caused by Covid-19 made it impossible to conduct such workshops in the imparted doctoral timeframe.

## 7.5. Personal challenges in conducting the research

### 7.5.1. Working mode and Covid-19

Covid-19 immediately impacted my ability to work in my natural mode - discursive and paper-based. Working from home in a small flat, I did not have many options to visualise some critical aspects of the study, put my findings up on walls and create visual connections between key themes, which made constructing meaning from the data a lot more challenging than anticipated.

From a more personal point of view and because of the Covid-19 situation, I spent most of the pandemic alone, unable to see my friends and family or return to France, my home country. As an extrovert, this forced and prolonged solitude affected my mental health. In addition, the successive lockdowns and an injury stopped me from exercising regularly. Having had a tremendous energy level since I was a child, physical activity has always been my escape and my way of bringing my ability to focus under control. This whole situation had such a negative impact on me that I found myself completely overwhelmed and unable to concentrate and work properly, struggling with racing thoughts all day and night. Eventually, it prompted an Attention Deficit Hyperactivity Disorder (ADHD) pre-diagnosis.

### 7.5.2. Attention Deficit Hyperactivity Disorder (ADHD)

Attention Deficit Hyperactivity Disorder (ADHD) affects people's behaviours and is defined as "inattentiveness, overactivity and impulsiveness" (Adler & Chua, 2002, p. 29). If adults can be diagnosed with ADHD, adult-onset does not occur. Instead, symptoms go unrecognised or misdiagnosed until adulthood, especially among women (Adler & Chua, *ibid.*, NHS, 2021; Waite, 2010; Lynch & Davison, 2022). Adults with ADHD may struggle with "organisation and time management, following instructions, focusing and completing tasks, coping with stress, feeling restless or impatient, impulsiveness and risk-taking" (NHS, 2021) and are often described as "easily bored, sensitive to distractions, creative, and intense" (Dodson, 2022).

ADHD has been particularly challenging for me as I am constantly overthinking, and having simultaneously multiple thoughts making it challenging to follow CGT's rigorous methods and capture everything in memos without becoming overwhelmed. As a result, the analytical process may not have been fully charged. In my academic life, ADHD has been particularly challenging as one of the dysfunctions associated with ADHD is *time blindness*. That is to say, ADHD individuals are oblivious to the time ticking by (Tuckman, 2022) and the "past, present, and future are never separate and distinct" (Dodson, 2022). Consequently,, it has been challenging for me to use time effectively and initiate and complete tasks, as I often misjudged the extent of tasks

to be completed. I have been overwhelmed by small tasks that appeared insuperable and would take me days, weeks, or months of guilt before starting them, only for them to be completed in a matter of minutes. Conversely, I believed I could achieve gigantic tasks in a matter of hours and then faced the reality that this was impossible, which made me feel stressed and overwhelmed.

Conversely , on good days, ADHD felt like a superpower, allowing me to hyperfocus for hours, forget about the outside world, complete huge tasks and make significant progress rapidly. The creativity associated with the ADHD brain was also beneficial in creating links and connections between the data sets.



## 7.6. Further research

Although the findings of this study contributed towards a better understanding of Design Facilitator capabilities, specifically by presenting Design Listening as a core capability of DFs, there are still many unknowns about it. *What are the prerequisites for Design Listening? To whom is it useful? What's next? Is there any way to better prepare RDI participants for Design Listening?* Further, it raises additional questions in relation to other Design Facilitator capabilities. *What are the other capabilities of Design Facilitators? Are they all of equal importance? Do Design Facilitators use these capabilities differently during in-person and online RDI?*

In addition, the identification of an enhanced Entrepreneurial Agency and Creative Confidence in RDI participants as a result of their participation in Rapid Design Interventions raises many questions. *How might we sustain these impacts post-intervention? What are the indicators of Entrepreneurial Agency and Creative Confidence? How might we measure them?* Following a successful project funding bid with the research team at Northumbria University, I will build upon findings from this doctoral study to address these questions, initially with regard to the Get Ready to Innovate programme, between January and June 2023.

Further research needs to be conducted to nuance the findings of this study and substantiate the findings with a lower level of confidence. For example, it is necessary to better understand the different approaches of Rapid Design Interventions - Rapid Design-Led Interventions and Rapid Design-Driven Interventions- and identify whether they generate similar outcomes. As the Rapid Design Interventions Theory model describes dynamic elements and suggests a relationship between them. It would be helpful to test its effectiveness in helping to conceptualise different types of RDI.

It is also essential to explore the Rapid Design Intervention theory in public and with the third sector. For example, in more of a social innovation context, there appears to be a need for deeper research of the environment of participants to build the trust and rapport necessary to deliver successful RDI, as participants might be facing very specific conditions (e.g. addictions, war, homelessness, disabilities, etc.). The understanding of the Rapid Design Intervention theory and the review of its constructs and logic in this context could help Design Facilitators in designing more empathetic and mindful interventions and enabling better engagement of RDI participants.

The discussion chapter highlighted the need to determine whether the outcomes of RDI are in part sustained by the quality of outputs produced during them. Additionally, it would be interesting to explore the dynamics between RDI outputs and outcomes, by looking at the different forms of design content produced during the Rapid Design Interventions and the outcomes generated as a result of them.

Finally, by reframing the focus and concentrating on outcomes of Rapid Design Interventions, this study enables the future exploration of indicators and measures of the impact of RDI. As design researchers and practitioners, it is essential to demonstrate the value of our work and understand what it takes to generate Return On Investment. Undertaking Rapid Design Interventions requires an investment of expertise, time and money, and this needs to be appreciated by organisations. Further research focusing on the development of a tool to facilitate RDI may also involve exploring means of capturing indicators, outputs and outcomes from different stakeholder perspectives. By being able to demonstrate the type of investment required to deliver value and bring a new product to market, or develop design capability within organisations, this would help in building confidence in such interventions.



08

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A

*Appendix*



## A. Appendix A

### Record of the activities that have contributed towards the data set

#### A.1. Data from research participants

Activity	Date	Details
<i>A1-p</i>	<i>26/11/2020</i>	<i>Semi-structured Interview (online)   Planned</i> First research participant interview with Grace from Organisation A.
<i>B1-p</i>	<i>11/02/2021</i>	<i>Semi-structured Interview (online)   Planned</i> Research participant interview with Becky from Organisation B..
<i>B2-m</i>	<i>12/04/2021</i>	<i>Memo</i> Memo captured with Becky after the semi-structured interview H1-p with Miles from Organisation H.
<i>B3-m</i>	<i>12/04/2021</i>	<i>Memo</i> Memo captured with Becky after the semi-structured interview with Organisation E, later removed from the data set.
<i>B4-m</i>	<i>14/04/2021</i>	<i>Memo</i> Memo captured with Becky after the semi-structured interview F1-p with Violet from Organisation F.
<i>B5-m</i>	<i>14/04/2021</i>	<i>Memo</i> Memo captured with Becky after the semi-structured interview G1-p with Emelia from Organisation G.
<i>C1-p</i>	<i>08/02/2021</i>	<i>Semi-structured Interview (online)   Planned</i> Research participant interview with Layla from Organisation C.
<i>D1-p</i>	<i>09/09/2021</i>	<i>Semi-structured Interview (online)   Planned</i> Research participant interview with Claire from Organisation D.

<b>Activity</b>	<b>Date</b>	<b>Details</b>
<i>D2-o</i>	<i>23/02/2022</i>	<i>Webinar (online)   Opportunistic</i> Claire discussing the impact of her Organisation's D long-term relationship with Northumbria University.
<i>F1-p</i>	<i>14/04/2021</i>	<i>Semi-structured Interview (online)   Planned</i> Research participant interview with Violet from Organisation D, and Becky from Organisation B.
<i>G1-p</i>	<i>14/04/2021</i>	<i>Semi-structured Interview (online)   Planned</i> Research participant interview with Emelia from Organisation G, and Becky from Organisation B.
<i>H1-p</i>	<i>12/04/2021</i>	<i>Semi-structured Interview (online)   Planned</i> Research participant interview with Miles from Organisation H, and Becky from Organisation B.
<i>I1-o</i>	<i>25/02/2021</i>	<i>Meeting (online)   Opportunistic</i> Meeting with the Head of Marketing at Organisation I to discuss potential involvement in my study.
<i>I2-o</i>	<i>01/04/2021</i>	<i>Meeting (online)   Opportunistic</i> Introductory meeting with Pauline, the Head of Innovation at Organisation I to discuss potential involvement in my study.
<i>I3-o</i>	<i>20/04/2021</i>	<i>Meeting (online)   Opportunistic</i> Innovation ambassadors monthly meeting with Pauline, Innovation Ambassadors (about 30 of them present) and external Innovation Practitioners sharing their organisation's practices with Organisation I.
<i>I4-p</i>	<i>25/06/2021</i>	<i>Semi-structured Interview (online)   Planned</i> Research participant interview with Pauline from Organisation I.
<i>I5-p</i>	<i>13/05/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with Ethan from Organisation I.
<i>I6-p</i>	<i>16/05/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with Susie from Organisation I.
<i>I7-p</i>	<i>31/05/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with Lee from Organisation I.
<i>I8-p</i>	<i>08/06/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with Pauline from Organisation I.

<b>Activity</b>	<b>Date</b>	<b>Details</b>
<i>I9-p</i>	<i>04/07/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with Matthew from Organisation I.
<i>I10-p</i>	<i>13/07/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with William from Organisation I.
<i>I11-p</i>	<i>14/07/2022</i>	<i>Semi-structured Interview (online)   Planned</i> Research participant interview with Jack from Organisation I.
<i>I12-p</i>	<i>14/07/2022</i>	<i>Semi-structured Interview (online)   Planned</i> Research participant interview with Ismail from Organisation I.
<i>J1-p</i>	<i>29/06/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with from Organisation J.
<i>K1-p</i>	<i>04/07/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with Jean from Organisation K.
<i>K2-p</i>	<i>12/07/2022</i>	<i>Semi-structured Interview (online)   Planned</i> Research participant interview with Ewan from Organisation K.
<i>LMN1-p</i>	<i>13/07/2022</i>	<i>Semi-structured Interview (online)   Planned</i> Research participants interview with Jane from Organisation L, Oscar from Organisation M, and Lucy from organisation N.
<i>O1-p</i>	<i>14/07/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with Eugene from Organisation O.
<i>P1-p</i>	<i>14/07/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with Vincent from Organisation P.
<i>Q1-p</i>	<i>14/07/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with Jakob from Organisation Q.
<i>Q2-p</i>	<i>14/07/2022</i>	<i>Informal conversational Interview (online)   Planned</i> Research participant interview with Max from Organisation Q.

## A.2. Data from RDI Outputs

Activity	Date	Details
S1-o	18/01/2021	<i>RDI Output   Opportunistic</i> Mini video interviews from GRTI participants and facilitators about what innovation means to them.
S2-o	01/03/2021	<i>RDI Output   Opportunistic</i> Outputs from Organisation A & C's Get Ready to Innovate unpack session.
S3-o	01/2022	<i>RDI Output   Opportunistic</i> Reflection cards from Get Ready to Innovate - Armenia

## A.3. Data from the Research Team

Activity	Date	Details
T1-o	13/11/2019	<i>Meeting (face-to-face)   Opportunistic</i> Supervision meeting with MB. Discussion about the influence on impact, the value of RDI, and the current gap in knowledge/value of the study.
T2-o	22/11/2019	<i>Meeting (face-to-face)   Opportunistic</i> Supervision meeting with MB & NS. Discussion about Design Maturity, design maturity models, and their influence on the impact of RDI.
T3-o	17/01/2020	<i>Meeting (face-to-face)   Opportunistic</i> Supervision meeting with MB. Discussion about the value of the study and the value of RDI, as well as Design Maturity, the influences on the impact of RDI. The value of episodic vs continue practices of Design Innovation were also discussed.
T4-o	20/01/2020	<i>Meeting (face-to-face)   Opportunistic</i> Supervision meeting with NS. Same topics discussed as T3-o.

<b>Activity</b>	<b>Date</b>	<b>Details</b>
<i>T5-o</i>	<i>30/01/2020</i>	<i>Meeting (face-to-face)   Opportunistic</i> Supervision meeting with MB & NS. Discussion about some of the outcomes of RDI - creative confidence, change in behaviour and mindset - as well as the focus of the study, which is looking at data through the people's frame as opposed to the economic frame.
<i>T6-o</i>	<i>19/02/2020</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. PA meeting unpack with the supervision team. Discussed the things that might need to be measures, the value and the impact of RDI
<i>T7-o</i>	<i>22/04/2020</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Discussion about the importance of the positionality of the researcher, the research team and the participants, as well as capturing the research team's tacit knowledge.
<i>T8-o</i>	<i>06/05/2020</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Discussion about the influence of the DF, the tools and the people in the room on the outcomes of RDI.
<i>T9-p</i>	<i>11/06/2020</i>	<i>Semi-structured Interview (online)   Planned</i> Capturing the tacit knowledge present within the research team, with MB.
<i>T10-p</i>	<i>15/06/2020</i>	<i>Semi-structured Interview (online)   Planned</i> Capturing the tacit knowledge present within the research team, with NS.
<i>T11-o</i>	<i>21/07/2020</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Discussing the influence the intent of an RDI has on its outcomes.
<i>T12-o</i>	<i>15/09/2020</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Discussing the influences on the outcomes delivered by RDI, and more specifically the human and organisational influence.
<i>T13-o</i>	<i>04/11/2020</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Discussing the value of RDI, and how this value is being recognised by organisations.



<b>Activity</b>	<b>Date</b>	<b>Details</b>
<i>T14-o</i>	<i>02/12/2020</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Discussing Design Listening: Active Listening + What If questions.
<i>T15-o</i>	<i>16/12/2020</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Discussing RDI and impact.
<i>T16-o</i>	<i>28/01/2021</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Discussing the impact session with O11T1P1, especially their design-like mindset and the fact that GRTI reminded them of the DI practice they use with their clients, but wasn't applying to their business.
<i>T17-o</i>	<i>08/02/2021</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Discussing the influence of maturity of participants in business on the outcomes as well as the influence of ad-hoc interactions with DF post RDI on the sustainment of outcomes
<i>T18-o</i>	<i>22/02/2021</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Discussing how the culture within an organisation can influence how RDI are being deployed and how impact might last over time.
<i>T19-p</i>	<i>15/03/2021</i>	<i>Workshop (online)   Planned</i> Sharing my findings so far wit the research team using the online platform Miro. Visuals were then used as prompts to discuss the different aspects of the study.
<i>T20-o</i>	<i>14/04/2021</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB. Discussing the generosity of design facilitators with their ideas as well as Design Listening.
<i>T21-o</i>	<i>24/04/2021</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with NS.
<i>T22-o</i>	<i>12/05/2021</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with NS. Discussing the Design Listening paper and the concept presented.
<i>T23-o</i>	<i>23/06/2021</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB.

<b>Activity</b>	<b>Date</b>	<b>Details</b>
<i>T24-o</i>	<i>28/06/2021</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS.
<i>T25-p</i>	<i>19/07/2021</i>	<i>Workshop (online)   Planned</i> Workshop with the research team looking at the meaning constructed from the data so far, and focusing on the development of a framework.
<i>T26-o</i>	<i>30/07/2021</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB. Discussion around the practical frameworks, the difference between outputs, outcomes, indicators. Looking at what the data says and shifting the study accordingly.
<i>T27-p</i>	<i>08/11/2021</i>	<i>Meeting (online)   Opportunistic</i> Supervision meeting with MB & NS. Annual Progression 2 feedback forcing the clarification of the RDI definition.
<i>T28-o</i>	<i>22/11/2021</i>	<i>Meeting (face-to-face)   Opportunistic</i> Supervision meeting with MB & NS.
<i>T29-p</i>	<i>26/01/2022</i>	<i>Workshop (face-to-face)   Planned</i> Workshop with the research team looking at the framework.
<i>T30-o</i>	<i>25/02/2022</i>	<i>Meeting (hybrid)   Opportunistic</i> Supervision meeting with MB & NS.
<i>T31-p</i>	<i>23/03/2022</i>	<i>Workshop (face-to-face)   Planned</i> Workshop with the research team reviewing the meaning constructed from the data.

## A.4. Data from the Community of Practice

### A.4.1. Creative Fuse North East - Northumbria University Team

Activity	Date	Details
U1-o	15/01/2021	<i>Meeting (online)   Opportunistic</i> Discussing de-risking by design, design expertise, creative confidence and enablers with the Creative Fuse North East Northumbria team.
U2-o	07/07/2021	<i>Meeting (online)   Opportunistic</i> Discussing Design Listening with the Creative Fuse North East Northumbria team.
U3-o	31/03/2022	<i>Meeting (online)   Opportunistic</i> Discussing Design Listening with the Creative Fuse North East Northumbria team.

### A.4.2. Creative Fuse North East - Wider Team

Activity	Date	Details
V1-o	26/01/2021	<i>Webinar (online)   Opportunistic</i> Discussing Design Listening, but mostly focused on building trust & rapport, relationships and participants mirroring facilitators' behaviours with the Creative Fuse North East wider team.

### A.4.3. Northumbria University Community of Practice

Activity	Date	Details
W1-o	18/02/2020	<i>Meeting (face-to-face)   Opportunistic</i> Project Approval meeting with the panel members. Discussing the progress of my studies and the choice of methodology. Challenging my views and position.

Activity	Date	Details
W2-o	17/02/2021	<i>Webinar (online)   Opportunistic</i> Discussing design for social good & the value design can deliver with the community of practice.
W3-o	26/02/2021	<i>Meeting (online)   Opportunistic</i> Discussing research positionality, business profit & designer's consciousness & focus with a design practitioner.
W4-o	03/08/2021	<i>Meeting (online)   Opportunistic</i> Discussion with a fellow doctoral student about Design Listening, but mostly focused on building trust & rapport, relationships between DF and participants, as well as participants mirroring DF's behaviours.
W5-o	11/11/2021	<i>Meeting (face-to-face)   Opportunistic</i> Discussing the integration and comparison of the framework with other innovation models with the field expert panel member.
W6-o	24/11/2021	<i>Lecture (face-to-face)   Opportunistic</i> xxx

## A.5. Data from other design thinkers, facilitators & practitioners

Activity	Date	Details
X1-o	22/05/2020	<i>Meeting (online)   Opportunistic</i> Design thinkers and practitioners discussing why they think design thinking is dead (or not), on the role of the designer within an organisation, on driving organisational change, impact of design activities.
X2-o	29/05/2020	<i>Meeting (online)   Opportunistic</i> Discussing the importance of measurement of impact within organisations mainly because of the money invested with design thinkers and practitioners.
X3-o	13/01/2021	<i>Webinar (online)   Opportunistic</i> A design maturity session delivered by a world-leading design organisation.

Activity	Date	Details
X4-o	29/01/2021	<i>Meeting (online)   Opportunistic</i> Discussing the social impact of innovation and the Social Value Bank as a measuring tool of impact with a design innovation practitioner former member of our community of practice.
X5-o	07/07/2021	<i>Meeting (online)   Opportunistic</i> Discussing my research with a key member of the Innovation team for a global manufacturer.

## A.6. Data from other organisations participating in RDI, or practicing DT or DI

Activity	Date	Details
Y1-o	13/01/2020	<i>Meeting (phone call)   Opportunistic</i> Discussion with the lead of an operation change team from a certain police force about how they have embedded design & innovation within their organisation. The innovation within their organisation is about making processes more efficient, day-to-day struggles.
Y2-o	XX/01/2021	<i>Semi-structured Interview (online)   Opportunistic</i> Joining the research team for one of the impact session they conducted with a participant of GRTI 2.0.
Y3-o	10/10/2021	<i>Meeting (online)   Opportunistic</i> Notes and thoughts triggered while discussing with a client of The Blooming Platypus.
Y4-o	22/11/2021	<i>Meeting (online)   Opportunistic</i> Notes and thoughts triggered during the unpack session with C1, client of The Blooming Platypus, after I ran a design sprint with them.
Y5-o	22/11/2021	<i>Meeting (online)   Opportunistic</i> Notes and thoughts triggered during the unpack session with C2, client of The Blooming Platypus, after I ran a design sprint with them for client C4.

## A.7. Data from the practitioner-researcher

Activity	Date	Details
Z1-p	10/06/2020	<i>Memo</i> Capturing my own tacit knowledge to understand my views and first ideas.
Z2-m	10/06/2020	<i>Memo</i> Discussing human behaviours and behavioural change, creative confidence
Z3-m	11/06/2020	<i>Memo</i>
Z4-m	15/06/2020	<i>Memo</i>
Z5-m	26/08/2020	<i>Memo</i> First round of analysis and writing formally my first assumptions, drawn from the interviews with the research team.
Z6-m	26/11/2020	<i>Memo</i> Discussing creative confidence, sustainability of impact, and new product development.
Z7-m	07/12/2020	<i>Memo</i> Analysis of Z1-p and T9-p.
Z8-m	08/12/2020	<i>Memo</i> Linked to the reading of Gribbin et al. (2018) and impact observed by MO1.
Z9-m	14/12/2020	<i>Memo</i> One-day analysis of A1-p associated memo. Captured main insights around the interventions, what happened post interventions, creative confidence, and also the format of the interventions.
Z10-m	15/12/2020	<i>Memo</i> Cleaning up A1-p and highlighting the different components.
Z11-m	04/01/2021	<i>Memo</i> Written when analysing T10-p.
Z12-m	08/01/2021	<i>Memo</i> Capturing thoughts after Y2-o

<b>Activity</b>	<b>Date</b>	<b>Details</b>
<i>Z13-m</i>	<i>13/01/2021</i>	<i>Memo</i> Discussing the meaning of 'rapid' when talking about DL intervention.
<i>Z14-m</i>	<i>15/01/2021</i>	<i>Memo</i> Thoughts on the potential of RDLIs as a transformative approach.
<i>Z15-m</i>	<i>18/01/2021</i>	<i>Memo</i> Watching S1-o
<i>Z16-m</i>	<i>25/01/2021</i>	<i>Memo</i> One day-analysis of Y2-o
<i>Z17-m</i>	<i>26/01/2021</i>	<i>Memo</i> Thoughts on RDLIs & how to measure their impact
<i>Z18-m</i>	<i>29/01/2021</i>	<i>Memo</i> Rethinking how we measure behaviour change.
<i>Z19-m</i>	<i>08/02/2021</i>	<i>Memo</i>
<i>Z20-m</i>	<i>09/02/2021</i>	<i>Memo</i>
<i>Z21-m</i>	<i>11/02/2021</i>	<i>Memo</i>
<i>Z22-m</i>	<i>17/02/2021</i>	<i>Memo</i> Importance to focus on the mindset e.g. outcomes as it is an enabler
<i>Z23-m</i>	<i>07/03/21</i>	<i>Memo</i> Day of coding of C1-p interview with Layla from Organisation C.
<i>Z24-m</i>	<i>08/03/21</i>	<i>Memo</i> Day of coding of D1-p interview with Claire from Organisation D.
<i>Z25-m</i>	<i>15/03/2021</i>	<i>Memo</i> Captured after T19-p, a workshop with the research team during which I presented them with my findings so far.
<i>Z26-m</i>	<i>15/03/2021</i>	<i>Memo</i> Thoughts about the involvement of stakeholders and participants in RDI provoked by a conversation with my mum who was a design practitioner for decades.

<b>Activity</b>	<b>Date</b>	<b>Details</b>
Z27-m	25/03/2021	<i>Memo</i> Captured just after facilitating the third session of GRTI-US with Miles.
Z28-m	26/03/2021	<i>Memo</i> Day of coding the T19-p workshop conducted with the research team.
Z29-m	06/04/2021	<i>Memo</i> Capturing my thoughts on Design Listening and the different steps it involves.
Z30-m	22/06/2021	<i>Memo</i> Relationship between RDLIs and the wider innovation practice within organisations
Z31-m	24/06/2021	<i>Memo</i> Memo done whilst cleaning nodes in nVivo
Z32-m	18/07/2021	<i>Memo</i> The relationship between outputs, outcomes and indicators, and how RDLIs relate to a wider innovation context within the organisation.
Z33-m	27/07/2021	<i>Memo</i> Building trust & rapport, relationships and participants mirroring facilitators' behaviours
Z34-m	30/07/2021	<i>Memo</i> memo done whilst coding impa_2
Z35-m	03/08/2021	<i>Memo</i> "memo done whilst coding knoda_3
Z36-m	03/08/2021	<i>Memo</i> many observations around the relationships between lon innovation practice & RDLI, as well as the link with HDMM"
Z37-m	09/08/2021	<i>Memo</i> Day of coding F4-p from Violet of Organisation F.
Z38-m	16/08/2021	<i>Memo</i> Thoughts captured whilst writing up my findings so far for my Annual Progression 2 report.
Z39-m	30/08/2021	<i>Memo</i> Memo done whilst doing literature review on RDLI



<b>Activity</b>	<b>Date</b>	<b>Details</b>
Z40-m	12/10/2021	<i>Memo</i> Presentation of a colleague made me think about design listening.
Z41-m	20/10/2021	<i>Memo</i> Memo done during the cleaning of H1-p
Z42-m	02/11/2021	<i>Memo</i> Memo done during G1-p cleaning
Z43-m	08/11/2021	<i>Memo</i> Memo done whilst coding T10-p
Z44-m	09/11/2021	<i>Memo</i> Memo done during impa_2 & impa_4 coding
Z45-m	30/11/2021	<i>Memo</i>
Z46-m	21/01/2022	<i>Memo</i> Memo done during the cleaning of impa5 with O19T1P1
Z47-m	21/02/2022	<i>Memo</i> Capturing my thoughts, emotions and expectations just before my participation in GRTI Young Business Edition with The Blooming Platypus.
Z48-m	22/02/2022	<i>Memo</i> GRTI Young business edition pre session 1
Z49-m	23/02/2022	<i>Memo</i> GRTI Young business edition session 1
Z50-m	02/03/2022	<i>Memo</i> GRTI Young business edition session 2
Z51-m	09/03/2022	<i>Memo</i> GRTI Young business edition session 3
Z52-m	17/03/2022	<i>Memo</i> GRTI Young business edition session 4
Z53-m	12/04/2022	<i>Memo</i> Capturing thoughts about a conversation I had with OH, from the Creative Fuse team the day before.

<b>Activity</b>	<b>Date</b>	<b>Details</b>
<i>Z54-m</i>	<i>08/05/2022</i>	<i>Memo</i> Memo done during the last review of inter1 & inter2
<i>Z55-m</i>	<i>11/05/2022</i>	<i>Memo</i> Memo done during the last review of inter_3



# B

## *Appendix*



## B. Appendix B

### Publications

- B.1. Carrion-Weiss, J., Bailey, M., & Spencer, N. (2022).** Design Listening: What Designers Hear and How They Respond. In G. Bruyns & H. Wei (Eds.), [ ] *With Design: Reinventing Design Modes. Proceedings of the 9th Congress of the International Association of Societies of Design Research (IASDR 2021)* (pp. 585–600). Springer. ISBN 978-981-19447-1-0





# Design Listening: What Designers Hear and How They Respond

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**Abstract.** This paper develops understanding about the practices of design facilitators during rapid design-led interventions and proposes Design Listening as a new phenomenon in design-led innovation practice. Analysis of evidence from an on-going doctoral study exploring value creation in rapid design-led interventions leads to a contribution to knowledge about Design Listening as a facilitatory and collaborative action. This study draws on data generated over a one-year period and uses constructivist grounded theory. The findings suggest that design facilitators simultaneously absorb and construct knowledge. The paper presents the Design Listening phenomenon and discusses this in the context of reflective practice. Data suggests that Design Listening allows design facilitators to respond to what they hear in three different ways; they challenge; they probe; they shape. The action of listening and the response it generates form the basis of the phenomenon presented in this paper. The paper concludes that a distinctive characteristic of this practice is that, in discursive workshop settings, reflective practices between participants are interconnected and that skillful practice is demonstrated by the depth of this connection evidenced by a mutual grasp of the design situation and its future possibilities.

**Keywords:** Design listening · Design-led innovation · Rapid design-led interventions · Design facilitation

## 1 Introduction

Over the past decade, design facilitation has emerged as a practice to drive organisational change (Lai 2016) and multidisciplinary innovation projects (Minder and Lassen 2019) as well as to facilitate the collaboration of stakeholders during large design events (Aguirre et al. 2017) or rapid design-led interventions (Gribbin et al. 2018). These events are intended to allow designers to support organisations in tackling the wicked problems and complex challenges they face (Lai 2016) in a very limited amount of time (Bessant 2005). However, the practices of expert design facilitation in these contexts are still under-examined (Aguirre et al. 2017; Minder and Lassen 2019).

This paper develops understanding about the practices of design facilitators (DFs) during rapid design-led interventions (RDLIs) and proposes Design Listening as a new phenomenon in design-led innovation practice. Analysis of evidence from an on-going



doctoral study exploring value creation in RDLI, leads to a contribution to knowledge about Design Listening as a facilitated and collaborative action.

This study draws on data generated over a one-year period through activities including, but not limited to, design interventions consisting of four 3-hour workshops with 5 enterprises; 6 one-hour semi-structured interviews with 3 former design intervention participants; 16 one-hour meetings between the three researchers. Utilising constructivist grounded theory (Charmaz 2000, 2008, 2017a, b; Mills et al. 2006b) the findings suggest that design facilitators simultaneously absorb knowledge and construct knowledge. Knowledge is absorbed, in the form of new information presented by those with whom they are working, and generated in the form of ideas, created through internally synthesising that new, in-session, knowledge with their pre-existing knowledge.

The paper presents the Design Listening phenomenon and discusses this in the context of reflective practice theory (Schön 1983, 1987). It raises questions regarding the reflective conversation conducted by designers with ‘the materials of a design situation’ (Schön 1992) where the materials of design are dynamic; the participants and their situations rather than inanimate materials. It suggests that Design Listening enables designers to align with the animate ‘materials’ within their design situation which results in a reflective conversation between individuals building preferred futures together (Simon 1996; Lawson 2005; Michlewski 2016). The data suggests that Design Listening allows design facilitators to respond to what they hear in three different ways; they challenge; they probe; and they shape. The action of listening and the response it generates form the basis of the phenomenon presented in this paper.

The paper concludes that a distinctive characteristic of this practice is that, in discursive workshop settings, reflective practices between participants entwine and that skillful practice is demonstrated by the depth of this twining evidenced by a mutual grasp of the design situation and its future possibilities. This highlights that this form of practice is not about ‘design facilitators’ and RDLI ‘participants’ but rather about a skillful application of Design Listening in an unfolding participatory reflective practice event.

## 2 Background

The emergence of design facilitation as a practice (Lai 2016; Aguirre et al. 2017; Bird 2019; Minder and Lassen 2019) has roots in user-centred design (Minder and Lassen, *ibid.*), is prevalent in service and systems design (Aguirre et al. 2017) and can be delivered in various ways (Lai 2016; Aguirre et al. 2017; Bird 2019; Minder and Lassen 2019), one of which being rapid design-led interventions (RDLIs) (Gribbin et al. 2018).

The study the authors are undertaking and on which this paper is based is exploring how these RDLIs impact organisations and how these organisations recognise that impact. Within the context of this study, the authors have used the following working definition;

Rapid design-led interventions are high-paced and intense workshops (or series of workshops) delivered according to design principles, tools and methods (Aguirre et al. 2017; Bird 2019) by design facilitators taking a hands-on approach.

One such RDLIs is a programme entitled Get Ready to Innovate (GRTI), a series of workshops developed and delivered to support SMEs with innovation readiness by a team of design researchers and academics from Northumbria University. Initially established in 2017 as part of the AHRC, ERDF and ACE-funded, Creative Fuse North East collaborative research programme (CFNE 2021), GRTI has subsequently been delivered in both Armenia (Get Ready to Innovate Armenia 2021) and the USA. The programme comprises intense workshops facilitated by a team of design facilitators (DFs) using bespoke design tools and methods to challenge sole traders' and SMEs leaders' thinking and help them uncover new opportunities to generate new value within their organisations (Gribbin et al. 2018).

### 3 Methodology

The doctoral study from which this work is derived employs a Constructivist Grounded Theory (CGT) approach which embraces the idea that researchers are likely to have previous experience and knowledge in the area under investigation (Charmaz 2008; Mills et al. 2006a, b). “Rather than being a tabula rasa, constructionists advocate recognizing prior knowledge and theoretical preconceptions and subjecting them to rigorous scrutiny” (Charmaz 2008, p. 402).

To capture the researchers' breadth of prior knowledge and expertise with regards to RDLI and to develop new knowledge and insights this study builds upon data captured through:

- Planned data collection activities:
  - **Research team's reflection sessions:** 3 one-hour semi-structured interviews and their related memos to capture researchers' tacit knowledge,
  - **Semi-structured interviews:** 3 one-hour interviews with 3 former GRTI participants from 3 different organisations, and their related memos,
  - **Memos:** aimed at capturing the thought process of the doctoral researcher during data analysis, 15 memos were relevant,
  - **Data validation:** 1 two-hour workshop with the research team to look at the data.
- Opportunistic data collection activities:
  - **GRTI sessions:** data was collected from design interventions with 5 enterprises that consisted of four 3-hour workshops each, and their related memos,
  - **Supervision:** all supervisions meetings between the doctoral researcher and both senior researchers were recorded. Whenever something useful and related to the study emerged, it was integrated into the dataset. Data was extracted from 10 supervisions (out of 31),
  - **Meetings:** 6 one-hour meetings with external designers touching upon the research topic and their related memos (Table 1).

**Table 1.** The changing team roles over the different activities of this on-going study

	planned data collection activities				opportunistic data collection activities		
	knowledge download	interviews	memos	validation	GRTI session	supervision	meetings
doctoral researcher	researcher				facilitator	researcher	
senior researcher 1	participant			researcher	facilitator	participant	
senior researcher 2	participant			researcher	facilitator	participant	

The majority of data was gathered from:

- **Organisation A:** a sustainable fashion sole-trading company owned by **Grace**.
- **Organisation B:** a sole trading company, in which **Maggie**, the founder, is an independent consultant.
- **Organisation C:** a social media marketing company. **Layla**, the founder, closed her company after participating in GRTI to pursue a new career as a designer.
- **Organisation D:** a medium-sized financial services enterprise. **Claire**, now the CEO, joined the company 20 years ago.

The Design Listening phenomenon emerged from the data collected by these activities and the data analysis process. As noted by Charmaz (2006), Creswell (2013), and Kalpokaite and Radivojevic (2018), it is crucial for a qualitative researcher to get involved simultaneously with data collection and data analysis. Consequently, the doctoral researcher transcribed the interviews and the notes from other activities, which she also coded manually (Easton et al. 2000; McLellan et al. 2003; Halcomb and Davidson 2006).

Additionally, and as per CGT, memos were used to keep track of how data was being constructed (Boychuk Duchscher and Morgan 2004; Charmaz 2006), especially the write-up of the researcher's ideation process, the emergence of relationships between codes as they become obvious (Glaser 1978; Charmaz 2006; Kalpokaite and Radivojevic 2018) as well as how the researcher constructed the data to reach a conceptual level (Boychuk Duchscher and Morgan 2004).

Again per CGT, the researchers had to carry out a constant comparative analysis of data for the findings to be rigorous and critical (Charmaz 2006; Mills et al. 2006b). Data was taken through several iterative stages (discussion, review, refinement and validation) and iteratively triangulated between the three researchers, the participants and other DFs (Koro-Ljungberg 2008; Guion et al. 2011). Along the way, interview questions were adapted to gather the participants' insights on emerging findings, which were then discussed amongst the researchers and with other DFs.

## 4 Design Listening: Emergence of a Phenomenon

During the delivery and reflection on GRTI, recurring behaviours were observed amongst DFs and participants. One of which is how DFs listen, what they hear and how they respond to it. We have dubbed this Design Listening. The first mention of Design Listening in this study can be traced back to the Research team's reflection sessions. It was at the time defined by one of the researchers as 'active listening' with an added layer of 'what if?' questioning.

### 4.1 Active Listening

Active Listening is based on the state of empathy of the *listener*, which enables them to perceive another's 'sensations, perceptions, meanings, and memories, which are available to the consciousness' 'with accuracy [...] as if one were the other person but without ever losing the "as if" condition'. (Rogers 1959, p. 210). Listening, and Active Listening especially, are not just about processing information in an appropriate manner. They are also about the *listener* demonstrating their interest to the *listened-to* (King 2008).

Active Listening promotes trust between the *listener* and *listened-to* and is extensively used in counselling and health and wellbeing related fields where establishing trust between clinician and patient is essential to positive outcomes. It is a fundamental concept within the practice of Health Coaching (Huffman 2010) which sprang out of studies in 'motivational interviewing' (Miller and Rollnick 1990). Health Coaching relies on patient self-efficacy - an individual's belief in their own capabilities 'to mobilise the motivation, cognitive resources and course of action', required to reach self-determined goals (Bandura and Jourden 1991, p. 952). Bandura, in particular, inspired Kelley and Kelley (2012) as they developed their work around Creative Confidence.

### 4.2 Listening in Design

Listening is one of the skills designers practice the most (Le 2018); they gather data in order to capture thoughts and insights from stakeholders, understand those, before being able to solve anything (Le 2018; Zumbrunnen 2018). It is especially important to practice empathy-driven listening (Le 2018), or Active Listening in design as having 'the ability to be sincerely and genuinely receptive is an empowering agent for new ideas' (Levitt 2018). Going further, Google Design (Google Design 2018) define listening as design strategy, which can be interpreted as a 'feedback loop where systems listen to users, and users listen to systems, using all of [their] respective senses.'

IDEO (2021) describe Creative Listening as, 'a process of tuning in, listening, and reflecting that helps you get more out of what you hear' (IDEO 2021). If Creative Listening helps the *listener* to hear themselves out and gain confidence in their own instincts (IDEO 2021), this paper will demonstrate how the *listener*, by tuning-in, can help the *listened-to* to build their Creative Confidence.

### 4.3 Design Listening

In Active Listening, listeners are trained to listen and play-back what they believe they have heard in order to sense-check it and build trust with the *listened-to* by reinforcing the

fact that they are paying attention. It appears that in Design Listening, such Active Listening is coupled with a thought process that allows designers to build creative responses which lead them to present visions of possible and preferred futures (Simon 1996; Voros 2017) in the form of ‘what if?’ questions.

Although uncommon, the term Design Listening is not entirely new. In design practice, Boltgroup (2016) use it to describe a facet of their work that, in effect, helps them ‘read’ and ‘write’ in ‘object languages’ (Cross 1982) in support of better understanding consumer needs. The use of the term in this commercial context is a way of describing the essential act of establishing empathy (Merriam-Webster n.c.), with the concerns of users as part of a design process.

Whilst establishing empathy certainly plays an important part in our conceptualisation of Design Listening, this is only part of a bigger picture where design facilitators are seeking to establish trust with a diverse range of design situation stakeholders including founders, company leaders, funders, consumers, etc.

The main distinction between Design Listening as a facet of commercial design practice and Design Listening in a context of facilitating RDLI is in the purpose. In the former, it is deployed in pursuit of insights and ideas that will enable the designer to deliver better designs. In the latter, it is employed to aid the participants achieve greater understanding of the situations and opportunities (Bailey et al. 2019) within their enterprise setting and shape a preferred future for their organisations (Simon 1996).

## 5 What Designers Hear

Design Listening is about listening and having heard, inputting something constructive into the conversation. Analysis of our data showed that whilst the DFs are actively listening, they are simultaneously having a creative conversation internally, uncovering new insights and understanding that they will then share with the participants. This means that they are both active listening and listening-out-for certain cues, or triggers that stimulate new creative lines of enquiry or reinforce ideas that they are having. In verbalising and building on these, new knowledge of, and for, the situation is created.

### 5.1 Designers Hear Through the Noise

When discussing the Design Listening phenomenon with the research team, it became apparent that designers are really good at ‘hearing through the noise’. Data showed that Design Listening is something that DFs do quite naturally and is an inherent aspect of their practice:

As a facilitator, you are listening and you are hearing possibilities, shutting out the background noise and responding to that question with “*you told us X, what if Y?*”.

The researchers’ experience as DFs allowed them to dissect what goes on in the DFs’ mind when they ‘*design listen*’; they are listening out for connections, possibilities and opportunities whilst removing noise and barriers. They are ‘listening for a formed or

unformed idea that holds promise’ (Levitt 2018). They also simultaneously listening to the bits of knowledge that make the bigger picture.

Each of the researchers has been in the situation where two DFs look at each other and say, ‘I know exactly what you’re thinking at this moment’. One possible explanation for this is that their minds are trained to go through similar cycles at the same time. Building towards this, one of the researchers explained;

[It] starts with the insights that you’re able to draw from the participant [...]. And what you’re doing is translating. [...] There will [also] be other [DFs] along [...] who are design listening as well and they’re design listening to the participant [and] to my interpretation and they’re simultaneously interpreting in their way.

To be able to hear through the noise and holistically understand the participants and their organisation, DFs have to approach the topic by asking numerous questions coming from many different angles (Lampitt Adey et al. 2019). This approach, which can be tiring for the participants, requires them to disclose and explain all the facets of their organisation and where they stand within it. Participant Claire commented on GRTI sessions’ intensity;

I was absolutely shattered. So it’s really intense, [...] [the DFs] ask lots and lots of questions. It really made you search your mind. [...] I was exhausted.

At this stage, the role of the DFs is to gain access to as much information as possible so that they create a holistic understanding of the design material in the situation. To successfully process the content overload during RDLIs, DFs condense the information to its core, keep its substance and remove the ‘noise’, which might consist of ‘abstractions, buzzwords, and jargon’ (IDEO 2021). Skillful DFs will not only be successful at this, they will also enable participants to remove the noise over the course of RDLIs. This mechanism enables the DFs (and participants at times) to listen out for the cues to potential ideas and opportunities.

## 5.2 Attitudes Influencing Design Listening

In addressing the attitudes influencing Design Listening, we must consider the predominant attitudes of both *listener* and *listened-to* and how these co-evolve as RDLIs progress.

Our data shows that participants in RDLIs have no preconception of what RDLIs are going to be like. Their curiosity is enough for them to sign up, even if they are uncertain of how it might benefit them and their organisations. As a result, most participants approach the sessions with an open mind, but also with apprehension and uncertainty. On the other hand, designers, who typically adopt a constructivist epistemology, are comfortable with uncertainty allowing them to readily build and rebuild alternative versions of reality and continually interpret the world around them whilst learning from their endeavours to make sense of it.

For successful Design Listening to occur the gap between this opportunity-focused facilitator mindset and the potentially sceptical participant must be bridged; trust must

be established. The attitude and the mindset of both the DFs and participants contribute towards it.

### 5.2.1 Design Facilitators' Attitude and Mindset for Successful Design Listening

DFs listen to empathise, not to judge. Their only objective is to gain an understanding of the participants' situation and help them. Grace for example felt that she was on an equal footing with the DFs during GRTI, and she genuinely thought facilitators were trying to help her. Because the way in which DFs listen is open-minded, it contributes to developing trust and establishing rapport further with the participants. Specifically, Grace addressed the positivity of the sessions and the fact that there were no right or wrong answers.

The motivation and the degree of involvement from the DFs, as well as their flexibility and adaptability, contributed to building the relationship. Layla vividly remembers being very impressed by the DFs dedication.

[They] were just absolutely fantastic. I remember being blown away because [...] I walked into this room [...] and they were just able to go '*right, let's get started*', and they were just able to adapt to my situation.

What Layla described here, is similar to other comments made by Claire and Grace. It appears that the participants felt the DFs were being flexible and generous with their ideas, easily offering those to the participants. However, discussing this with the research team, one of the researchers observed;

Maybe that is interpreted as generosity. Whereas for facilitators, it is for our own understanding to get to the right question to respond to.

From a DF's point of view, the value is in the moment and the impact they can have in limited time. Their role during RDLIs is to help participants to hear the value of their own ideas (Bird 2019). Layla and Grace remember being pushed by DFs to seek feedback from objective potential clients (e.g. not friends or family). Grace, who described herself as lacking confidence and being 'her own worst enemy' realised the potential of some of her ideas after receiving feedback. Her creative confidence was enhanced by the RDLIs, and by the feedback she sought. As a consequence, she has launched one successful new product.

The attitude of DFs, perceived at times as generosity by the participants but being something DFs do naturally as part of their investigation, has certainly contributed to creating a safe environment for the participants (Bailey and Smith 2010), establishing trust (Lampitt Adey et al. 2019), building creative confidence (Kelley and Kelley 2015) and welcoming Design Listening during RDLIs.

### 5.2.2 Attitudes and Mindsets for Successful Design Listening

Design Listening is about the mindset and attitude of DFs, but also those of the participants. By participating in those RDLI, the participants step out of their comfort zone and make themselves vulnerable. Therefore building trust and developing rapport

between DFs and participants becomes a prerequisite to creating meaningful engagement (Lampitt Adey et al. 2019). Recently delivering further GRTI sessions online, the doctoral researcher wrote in her memos;

[The participant] describes themselves as risk-averse and we didn't manage to break down that wall. They aren't open to other plans or ideas. This might be the reason why they cannot see the benefits [in GRTI].

From there, it became obvious that the participants would only start opening up and have open heart conversations with the DFs once trust and rapport are established. Reflecting on the attitude of the participants, the researchers realised that the greatest value in RDLI is delivered when participants are engaged and open-minded. Again, the doctoral researcher captured her thoughts after a GRTI session:

I feel inspired by [participant] and [their] energy is just amazing. [...] I love the fact that [they] said that GRTI was a revolution for [them]. [...] The impact is probably linked to [their] high level of involvement and openness to new ideas during the sessions.

In this case, building rapport and trust between the participant and the DFs enabled the DFs to create a bubble of trust around their group. So doing, they completely shut out the background noise so that they could, together, focus on the important challenges and opportunities of the organisation. This was emphasised in one of the Knowledge Download sessions;

What happens over time, not always, when co-creation goes on and the participant is as engaged as the [DFs], they get on the same wavelength. And then they're not only transmitting "*this is my story or my life, my business tadadada, but what if I did it like this?*" So they start to design listen to themselves.

Here, if the participant's and DFs' mindsets are in harmony, it creates a symbiosis, which then enables Design Listening to occur on both sides. For both parties, there are attitudes and mindsets that will hinder and others that will support Design Listening.

### 5.3 Facets of Design Listening

We have seen that establishing trust and rapport is foundational to a positive experience of Design Listening. It is this that establishes the safe environment (Bailey and Smith 2010) within which design facilitators can then dig deep into a participants' situation.

Kimbell (2015, p. 287) describes designers as cultural interpreters who 'ask 'what if?' questions to imagine future scenarios rather than accepting the way things are done now.' In the context of RDLI, this is a primary technique of DFs and it is through responding to the cues and prompts that they hear through Design Listening that they are able to do this; '*you said this, what if that?*'

Our data suggests that in Design Listening, the designer's response to their action of listening has three facets; *challenge*; *probe*; and *shape*. Each involves the Design Facilitator using 'what if?' questions in their internal interpretation of what they hear. The following section provides details of these.



### 5.3.1 Challenge: Designers Offer an Alternative Version of the Truth

In line with their predominant constructivist mindset DFs seek to uncover the most valuable version of the ‘truth’ within the given situation. To do this they must construct and offer alternative versions of the reality that is presented to them. Indeed, Lampitt Adey et al. (2019) discussed how important it is for DFs during GRTI to work closely with the organisations to understand their context and what is really happening within it. In some scenarios, they saw the DFs reframing the information they had been given by the participants to let the underlying and unconscious motivations surface.

Layla mentioned that GRTI had two parts; (1) the DFs questioning the participants’ intent and the reasons behind their decisions and (2) the DFs responding to the participants by bringing different lenses and perspectives to the answers they were given previously. Similarly, Maggie commented;

What was different [from what I do] is that you were coming from a different perspective, a different lens, and the freshness that really helped me reframe what I do.

Here, Maggie recognised the helpfulness and the value of asking challenging questions whilst offering another viewpoint on the discussed matter, which builds upon the researchers’ observations.

The *challenge* facet of the response is about creating new meanings. The DFs will first mirror what they think they heard by paraphrasing the participants’ discourse (sense-making) to then translate it according to their own perception (sense-checking) (Lampitt Adey et al. 2019). This response allowed the DFs to warm the participants up to the proposition they were about to make and *probe*. *Challenge* is a crucial building block on which safely to offer a new idea, proving to the participants that DFs had listened and heard what was being said thus deepening trust and rapport between both parties (Lampitt Adey et al. 2019).

### 5.3.2 Probe: Designers Verify the Stickiness of an Idea

In general design practice, positing half-formed or partially developed ideas is a critical means by which designers can probe a given design situation and identify preferable routes forward. It is a means of testing the synthesised knowledge manifest in the idea. Expert designers learn when and how to surface ideas such that they will ‘land well’ with their clients and yield meaningful responses.

However, during RDLIs, DFs do not have the luxury of time and therefore, need to test out their emerging ideas as soon as possible in the process, to ensure that they and the participants are going in a helpful direction. During the data validation activity, one senior researcher directly commented on this;

When we, [DFs], say ‘what if?’ [...] to the client before we’ve done the research or before we’ve done the project, we venture a possible direction. And it’s just a probe. And that probe allows us to *design listen* [...] in order to pick up where there’s stickiness or potential.

We have seen that in GRTI, the DFs once more relied on ‘what if?’ questions. By doing so, they showed the participant that their suggestions were conditional rather than definitive. From there, they were able to safely deliver and venture new ideas.

The *probing* facet of the response is a platform for propositions. It allowed DFs to interrogate ideas whilst really listening out for, and hearing, how the participants respond in order to pick up where there is ‘stickiness’ - adhesion of an idea. The role of the ‘what if?’ at this stage is absolutely crucial as it leaves space for the participants to respond and input their vision and opinion (Minder and Lassen 2019, p. 15). It is very likely that new ideas would not have landed as well if DFs had not taken the precaution they did (showing that ideas are conditional) in the *challenge* facet of their response.

### 5.3.3 Shape: Designers and Participants Hand-in-Hand Build New Narratives

Moving forward from the *challenge* and *probe* facet of the response, DFs and participants start to ‘co-reflect’ upon their ideas, allowing a collaborative thinking process to happen (Yukawa 2006). ‘Through co-reflection, [DFs and participants together] weigh reasons, arguments, and supporting evidence and examine alternative perspectives to achieve a clearer understanding by drawing on collective experience’ (Yukawa 2006, p. 206) and become ‘co-creation activists’ (Bailey et al. 2019).

At this point, DFs and participants are allowing and welcoming silence and time to think, whilst encouraging the sketching out of a story, carefully listening out for the emerging new narratives for the organisation. Here, DFs have a tangible conversation with one of the materials of their design situation (Schön 1992), the participants.

During Claire’s interview, it became obvious that she has now taken ownership of Design Listening and has become herself a DF. Indeed, it seems that now, she is taking her team, clients and stakeholders through the same journey DFs took her during GRTI. Discussing the exchange with her ‘participants’, she built upon the generosity of DFs discussed earlier in this paper to then draw out on the co-creation of ideas;

‘Even if all that gets produced is [...] an idea, [...] you’re trying to help them. And I think that really makes a difference. [...] You’re in a joint enterprise and you’re trying to do something together.’

The *shape* facet of the response is an exploration. It is about DFs and participants listening out for what they can build on to arrive at the best possible future for the organisation (Simon 1996). Here, DFs are using a ‘what if?’ proposition for frame-creation as a model of innovation and design more broadly and are working hand-in-hand with the participants.

## 6 Discussion and Further Research

This paper aimed to investigate the practices of expert design facilitation in the context of RDLIs. It has uncovered a new phenomenon in design-led innovation practice; Design Listening. The suggestion that Design Listening enables DFs to respond to what they hear in three different ways causes the authors to reflect upon the relationship between Design Listening and reflective practice, what Design Listening might look like and why it actually matters.

## 6.1 Design Listening and Reflective Practice

Schön (1987) presented a model of reflective practice through which designers continually develop and refine their practice knowledge and skills. Novice designers learn to reflect on their practice and as they become more experienced they learn to reflect in practice through ‘a reflective conversation with the materials of their design situation’ (Schön 1992, pp. 138–139). Simply put, this means that they consider and adapt what they are doing and how they are doing it in real-time. Eventually, some designers learn to reflect on reflection in practice. Per se, Design Listening shares certain characteristics with Reflective Practice, one of which being that both practices have the potential to take the designer’s thought process forwards and backwards (Spencer and Hilton 2010).

However, it appears that Design Listening goes further than Reflective Practice. In the context of this study, the authors suggest that the materials of the design situation with which designers have this reflective conversation are the participant individuals and their enterprises, their knowledge, practices, ideas and ambitions. As such, unlike the physical materials to which Schön (1992, pp. 138–139) was referring, they are dynamic, responsive and adaptable.

Additionally, this observation raises questions regarding the creative process of designers as contemporary design fields have moved away from solely physical and tangible outputs ‘to include more elusive creations such as interactions, strategies and systems’ (Leerberg 2009, p. 1). This paper allows us to argue that within all those design fields interacting with responsive, sentient beings as opposed to inanimate materials, designers *design listen* to living design ‘materials’ (Schön 1992) - the participants within their design situation - so that together, they can build preferred futures (Simon 1996; Lawson 2005; Michlewski 2016).

Building upon this, the further discussion points will assume the generalisation of Design Listening to other contemporary design fields being valid and therefore, will refer to ‘designers’ and ‘participants and their situation’ as opposed to ‘design facilitators’ and ‘participants’.

## 6.2 What Might Design Listening Look like?

The quest to understand what Design Listening might look like was initiated by a memo written by the doctoral researcher after a data validation activity with the research team, where she raised the following question: ‘If Design Thinking is: empathise, define, ideate, prototype, test, [then] what is Design Listening?’ This question was the beginning of an investigation to map out and sketch a potential answer using the insights and data gathered thus far in this ongoing study. However, this was a misleading question as Design Thinking happens over an extended period of time and may be characterised in a number of different ways such as the aforementioned, d.School (d.school n.d.) approach amongst others, whereas Design Listening may be thought of as a perpetual state of designers (albeit explored here in the context of RDLIs).

This possible representation of Design Listening was developed as the findings of our study emerged and is not so much aimed at representing a process, but rather painting a picture. Although all DFs might go through similar steps, it seems probable that; (1) designers navigate those steps at a pace dictated by the design situation and the responses

they receive from the *participants*, and (2) that the *participants'* capability to learn to *design listen* is dependent on both their own and the designers' attitude as well as the skillful engagement from the designers.

### 6.3 Why Does Design Listening Matter?

This paper presents the role Design Listening plays in safely inputting ideas for co-creation with *participants and their situation* to shape preferred futures (Simon 1996). Creative Listening (IDEO 2021) helps the listener to gain confidence in their own instincts whereas Design Listening will give the listener - whether they are listening to someone else or themselves - the openness to be inspired by what they hear, have the confidence to offer an alternative truth they heard and start ideating around it. The creative confidence Design Listening helps the *participants and their situation* build can then be used by them to act upon their intuitions, develop their ideas (Kelley and Kelley 2015) and contribute equally to solving the challenges present within the design situation.

These reflections lead to further questions. It is possible to argue that the reason why designers are perceived as being generous with their ideas is because of their high level of creative confidence. This is the designers' normal way of functioning enabled by the knowledge that without the verification and the conscious development of ideas (Lawson 2005, pp. 149) that happens within Design Listening with the *participants and their situation*, ideas are less valuable.

Additionally, and because it appears that Design Listening might be contagious in a sense that the *participants and their situation* surrounded by designers start unconsciously mimicking some of the designers' behaviours - such as Design Listening - there is a probability that they too could reach a point of endless ideas and possibilities to respond to a design situation.

### 6.4 Conclusion and Further Research

Boltgroup (2016) defined Design Listening as 'a combination of listening, seeing, doing, learning, and interpreting messages being sent from the consumer. The deep understanding that results from Design Listening can lead to the insights necessary for big innovative opportunities.' Although the authors agree with the general idea, they believe that this paper demonstrates that Design Listening is not just about empathising to hear the consumers and develop better ideas from better insights. Furthermore, it is not either just about receiving and translating accurate verbal and non-verbal communications (Boltgroup 2016), even if this is part of it. The authors certainly do not contest the value in design practice of what Boltgroup and others say about the importance of establishing empathy and hearing consumers' views.

Design Listening is a combined reflective practice that happens between the designer and the *participants and their situation*. It is a context-specific and opportunity-focused practice that is about empowerment. Ultimately, Design Listening is about hearing yourself and the people you are interacting with, listening out for verbal and non-verbal communication as well as conscious and unconscious cues, with the aim of bringing about new meanings, ideas and narratives. The value in Design Listening does not reside in

uncovering a particular business idea but rather in leaving a legacy that has to do with how the *listened-to* will respond the next time they have an idea they want to pursue (Bird 2019). It is an unfolding participatory phenomenon that challenges, probes and shapes new narratives while teasing out the participants' knowledge and embracing their vision.

This research, contributes to and responds to Light and Akama's (2012) call for researchers to orientate towards the subtleties of participatory practices as opposed to reporting methods alone. Design Listening has been revealed as an emerging design practice phenomenon, but it has also raised a number of questions that need to be considered for further research; Is Design Listening innate or by dint of training? How can novice design facilitators and participants be trained for Design Listening?

In the short term, there is a need for further research to investigate these questions and gain a better understanding of Design Listening as an emerging design phenomenon. There is also a need to understand and capture the impact of the Design Listening capability on a larger organisational scale. Finally, as the on-going study is looking at the RDLI value creation, there is a need to understand how Design Listening relates to impact for participants' organisations.

**Acknowledgements.** The Rapid Design-Led Interventions upon which much of this research is based were developed as the Get Ready to Innovate (Gribbin, Bailey and Spencer, 2018) programme which formed part of Creative Fuse North East (CFNE, 2021), a collaborative research programme funded by the Arts and Humanities Research Council of UK, Arts Council England and the European Regional Development Fund. The doctoral study is supported through the Research Development Fund.

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23rd DMI: Academic Design Management Conference  
Design Management as a Strategic Asset  
Toronto, Canada, 3-4 August, 2022



## Design-led Innovation Readiness: priming micro SMEs for strategic innovation

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*This research explores innovation-readiness in the context of design-led innovation in micro, small and medium-sized enterprises (MSMEs). It builds on work published by the lead author's team in 2018. This reported on the team's rapid design-led intervention for supporting innovation readiness.*

*The approach has since been deployed with over 60 enterprises across three different countries; UK, USA, and Armenia. It has evolved to be delivered through different modes; one-to-one, one-to-many, face-to-face and on-line. Further, it has been developed in such a way that postgraduate students, or 'novice facilitators', can take an active role in its delivery.*

*Mixed-methods are used, combining thematic analysis of surveys, co-reflection and semi-structured interviews with participants and facilitators. Findings suggest the design-led approach delivers different benefits from typical business innovation readiness assessment /audit tools. It involves a form of co-creative, speculative knowledge venturing that supports enterprises to understand their innovation readiness, and to create and map strategic innovation opportunities, thereby priming them to engage in design-led innovation practices. This co-creation of knowledge leads to both new innovation opportunities and new knowledge about the innovation readiness of the enterprise. It is revealed as a fundamental, catalytic aspect of the programme irrespective of mode, or location, of delivery.*

*This paper will be of interest to researchers and practitioners who are seeking to develop innovation support programmes working with Micro-SMEs.*

**Keywords:** *Innovation-readiness; Design-led Innovation; co-created knowledge; design facilitation; Micro-SME*

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## Introduction

Innovation readiness refers to the extent to which an organisation can sustain its ability to innovate (Zerfass, 2005). Typically, innovation readiness evaluations, or audits, support organisations in understanding the complex interaction of multiple factors that affect their ability to innovate. They are generally grounded in business theories. The work by Gribbin et al (2018) sets out why innovation is so important, but also so hard, within SMEs highlighting the need to remain competitive as a main driver for innovation, and scarcity of time and resource as main barriers. The business-theory-based approaches are good at helping organisations to identify where barriers and challenges to innovation exist within an organisation, but stop-short of supporting organisations to work out how to overcome these barriers. A design-led approach, offers the promise of both revealing and understanding those barriers and challenges and also putting in place creative plans to address them. It was on this premise, that the rapid design-led intervention that is the subject of this study, was developed and deployed.

The intervention, which employs Design Thinking approaches (multi-stakeholder perspectives, abductive reasoning, rapid-ideation, visualisation etc.) is known as Get Ready to Innovate (GRTI) and was initially developed in 2017 as part of the Creative Fuse North East (CFNE) programme. CFNE is a 'multi-disciplinary, multi stakeholder action research project focused on the strength, diversity and nuanced nature of the North East's creative, digital and IT sector'. CFNE is exploring and supporting the innovation capability and capacity that exists in the fusion of creative, technical and business knowledge and know-how. It is conducting 'new research that seeks to understand the conditions for creativity and interdisciplinary fusion' (Creative Fuse North East, 2022). CFNE was jointly funded by the UK's Arts and Humanities Research Council (AHRC), Arts Council England (ACE) and the European Regional Development Fund (ERDF). This blended funding, although extremely complex in terms of bidding and administration, provides an elegant model for action research as the ERDF component provides for innovation support to be delivered to SMEs who would not normally be able to afford to access commercial support. A stipulation of the ERDF funding was that business support should be delivered within a 12-hour engagement. This factor governed the design of the GRTI programme.

CFNE has, thus far, been delivered through two active phases; phase 1, 2016 – 2019 and phase 2, 2020 – 2022. In phase 1, GRTI was delivered entirely face-to-face and through two different modes, a one-to-one mode (one team of design facilitators (DFs) with one organisation) and one-to-many in which post graduate students, acting as 'novice facilitators' (Lampitt Adey et al, 2019) were supported by expert DFs to run workshops with multiple businesses simultaneously. In CFNE phase 2, which was initially delivered under pandemic lock-down restrictions, the intervention was modified to be delivered online (Hemstock et al, 2022). Further, a refined variant of the one-to-many intervention was developed.

GRTI has also been developed from the original model to be deployed in support of enterprise education in Armenia (Bailey et al, 2022) where it is known as 'GRTIA' and through an online approach with BIPOC (black, Indigenous, People of Colour) Founders in the USA through a programme known as EGK Starters (EGK Starters, 2021).

The majority of enterprises supported through the various iterations of GRTI fall into the EU's micro SME classification (i.e. they have fewer than 10 employees and a turnover below €2 million) and these micro-enterprises are the focus of this study. Facilitation teams have invariably included at least one facilitator with a design background. Participants were typically enterprise founders or leaders.

## Background

In the UK in 2021, micro SMEs accounted for 95% of all businesses, 21% of employment but only 14% of turnover (BEIS, 2021). Whilst small size is often seen as a benefit when it comes to agility in responding to market conditions, 'micro business owners are often forced to focus on managing and meeting short term needs' (SME Loans, 2021) which represents a significant impediment to strategic innovation leading to growth, increased productivity and profitability.

Innovation, the realisation of ideas as positive change, requires a willingness not just to embrace change, but to make change. It is risky because the pursuit of change increases the chances of failure and without a growth mindset, one that recognises failure as learning in disguise, failure can be devastating, demoralising and terminal to an enterprise, particularly a very small one.

A number of innovation readiness tools exist that aid businesses in auditing their capacity and capability to innovate at an organisational level (Biloslavo, 2005; Dworkin and Spiegel, 2015). Such tools tend to rely on surveys as they are administratively efficient (a particular benefit in the context of MSMEs) and draw on readily available data regarding past or current practices. Whilst these methods provide organisations with an overview

of their readiness to innovate, and can provide the basis for advice on next steps based on a generalisation of results from other surveys of other organisations, they fail to provide an enterprise-specific roadmap for successful innovation.

As noted by Gribbin et al (2018) the closest parallel to innovation readiness studies in the design field are those relating to design and innovation maturity models (Danish Design Centre, 2015; Gardien and Gisling, 2013 and Essmann and Du Preez, 2009). These focus on organisational design innovation processes and capacity rather than identifying opportunities to undertake innovation within the constraints of an existing enterprise. These models are typically built on evidence gathered from larger organisations (Gulari and Fremantle, 2015) where time and resource limitations are not the same as those faced by MSMEs. Innovation is seen as simultaneously crucial but risky within these constraints.

The literature surrounding Design Thinking fails to offer a single, accepted definition of the practice. However, the authors of this paper suggest that the approach has something to offer in mitigating risks associated with the pursuit of innovation and that this could be useful in the context of time and resource-poor MSMEs.

A helpful way of considering Design Thinking in relation to this work is offered by Martin (2009) who described Design Thinking as a 'dynamic interplay' that balances 'analytic mastery and intuitive originality' focussing on the cognitive skills required to achieve this balance in pursuit of 'valid' innovation. Additionally, Nielsen, Christensen and Stovang (2021) present Design Thinking as 'consisting of five principles: 1) user/customer focus and emphasis, 2) problem framing and definition, 3) visualisation, 4) experimentation and prototyping, and 5) diversity and co-creation'.

Wrigley (2017) describes design-led innovation as a process of business transformation that employs a union of design and strategy. Bucolo and Matthews (2011) suggest that design-led innovation bridges the gap between the application of design to create products, systems and services, and value-creation for organisations. They propose that design-led innovation is a 'process of creating a sustainable competitive advantage, by radically changing the customer value proposition'. This is a useful frame through which to consider how an organisation might employ a design-led approach in order to achieve sustainable business success through strategic innovation, i.e. innovations in corporate strategies regarding which products, systems, services to develop, which sectors or markets to compete in, routes to market, business models etc. Again, the emphasis of the literature in this area is very much oriented to large, corporate organisations.

In the case of this work, the authors employ a design-led approach to look both inwards to the enterprise, considering the motivations and drivers of the individuals involved, and outwards to the external stakeholders, including, but not limited to, customers. MSMEs tend not to think about what they are doing in terms of the language of strategic innovation or innovation-readiness. What they are interested in is 'what should we be doing now, next, and beyond that, in order to ensure that we can fulfil the purpose and realise the future vision that we have for our enterprise?'

## **The GRTI intervention**

GRTI takes advantage of Martin's (2009) 'dynamic interplay' mindset by analysing past and present practices and creatively speculating about the future. The approach adopted by the researchers as they deliver GRTI represents a synthesis of analytic and intuitive thinking regarding the situation and specific concerns of the participating MSME.

In their systematic review of design facilitation literature, Mosely, Markauskaite and Wrigley (2021) suggest that:

*Design facilitation is a highly complex, integrative, emergent practice that is innately linked to design process knowledge and understanding.*

Through the evolution of the dynamic and close-quarters setting and structure of GRTI, DFs rely heavily on this design process knowledge and understanding to tailor each session to the specific and emerging circumstances of the participating enterprise.

Gribbin et al (2018) set out a model for the twelve-hour programme structured around four sessions 'inspired by the philosophy of design sprints and informed by previous research in the domains of both management and design'. The programme took advantage of the design sprint's use of Design Thinking tools in a restricted time period to rapidly co-created concepts in response to a given situation and relied on management studies to identify resources that need to be in place to support the innovation endeavour as a foundation of future strategy.

As originally designed, the programme involved an initial 2-hour 'triage' session, two separate 4-hour design sprints and a concluding 2-hour reflection and planning session. This original model was populated with a number of established methods proposed to be used 'as tools for aiding understanding' (see Figure 1). GRTI has now been adopted for use in a number of different programmes and using different delivery modes, but the fundamental principles and basic structure behind the approach have remained unchanged.

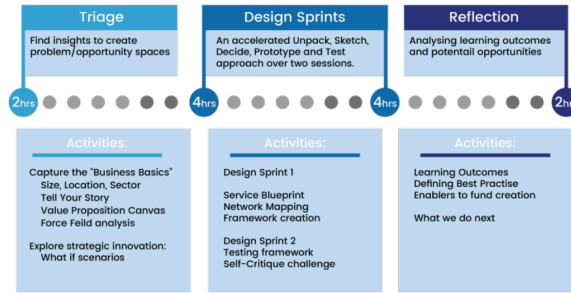
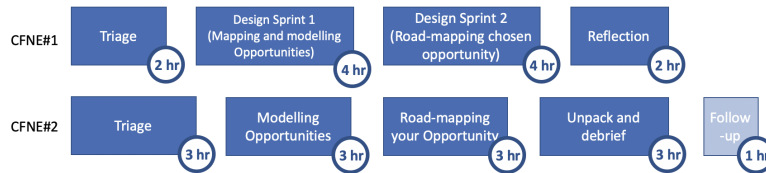


Figure 1: Visualisation of the innovation assessment method (Gribbin et al, 2018)

Subsequent iterative development of the programme has seen it tailored to suit the particular circumstances of delivery. Figure 2, provides a summary of how the structure has evolved from the first iteration to the latest. Very early feedback from participants suggested that the 4-hour sessions were too mentally exhausting (the DFs also felt this way) and so the twelve hours has now been divided equally between four sessions. Independent of the strictures of the funding, the researchers now plan to spend an hour in follow-up, six-months after delivery of the final session. This is in part to assist with data-gathering regarding longer-term impact, but also in response to early findings which suggest that sustainment of the impact of GRTI in terms of working practices requires some further intervention.

Figure 2: Visualisation of first and latest programme structures (authors)



### The programme

Table 1 identifies the basic details of the various GRTI programmes which form the basis of this study. It identifies programmes that were delivered in both 1-2-1 and 1-2-many formats, those delivered face-to-face, or online. The GRTIA and EGK programmes were not restricted to 12-hours as they had different funders, but nonetheless, they were time-bounded and followed the same structural format as the CFNE variants thus making them relevant to this study.

Over the course of each delivery the programme has been developed through an iterative process of continuous design (Jones, 1983; Tonkinwise, 2004) whereby the researchers (in this case, also the designers of the programme and DFs who deliver it) have taken responsibility for its continual evaluation and refinement. In each manifestation, the DFs have devised and employed what Agguire, Agudelo and Romm (2017) call 'contextually designed facilitation tools'; bespoke materials to support the flow of each session. These are large (physical or virtual) templates upon which the topics of discussion are drawn-out in real-time.

Table 1 GRTI delivery models and modes.

Programme	Location	Delivery model	Delivery mode	Number of enterprises	Duration	Participant ref code
CFNE#1	North East UK	1-2-1	In person face-to-face	14	Typically, within 1 month	A
CFNE#1	North East UK	1-2-many	In person face-to-face	12	3 weeks	B
GRTIA	Yerevan, Armenia	1-2-many	In person face-to-face	24	Over 6 months	C
EGK Starters	Birmingham, AL, USA	1-2-1	Online	4	Within 1 month	D
CFNE#2	North East UK	1-2-1	Online	8	Within 1 month	E
CFNE#2	North East UK	1-2-1	In person face-to-face	2	Within 1 month	F
CFNE#2	North East UK	1-2-many	In person face-to-face	4	Within 1 month	G

### Session 1: Triage

The triage session is designed with several goals in mind. Firstly, it is intended to capture business basics or 'business as usual' by looking at the past and present: size, shape, location of the business; product or service offered; nature of the customer-base; business-model; inter-dependencies; typical 'innovation journey'; and so forth. (In order that the facilitators can approach the programme with 'fresh eyes', only minimal pre-session preparation is undertaken.) Secondly, it seeks to get beneath the skin of the operation to understand the values and principles of the founders and leaders of the enterprise. This is achieved by exploring the backgrounds of the individuals; the original motivations behind founding the enterprise; the nature of relationships with customers and the wider stakeholder network etc. Thirdly, it serves to orientate the participants to the design-led intervention that the DFs use. This involves a combination of questioning, framing and design listening 'a combined reflective practice that happens between the designer and the participants and their situation' which supports new opportunity identification and creation by 'bringing about new meanings, ideas and narratives' (Carrion-Weiss, Bailey and Spencer, 2021). Increasingly, homework is given to participants at the end of the session. It serves the purpose of focussing participant reflection between sessions in order to offer a precis of the key issues and a focal-point for matters around which to ideate at the start of the second session. The specific nature of homework tasks is dependent on how the Triage session has gone and is determined dynamically by the facilitators during the session.

(Note: An example of the continuous design approach is evident in the Phase 2 of the CFNE delivery where it was important to adapt the Triage session to consider 'business as unusual' – how the business adapted to the circumstances of the COVID-19 pandemic and whether this might be used as a platform for further adaptation and innovation.)

### Session 2: Modelling opportunities

The goal of the second session is to move towards a future-oriented perspective. Its focus is framing and reframing current situations and opportunities within the enterprise to reveal opportunities leading to rapid ideation. Whilst in the original programme design the intention was to use pre-existing tools, such as personas, service blueprints or user journey maps to support this, the DFs soon learned that taking a prescriptive approach was restrictive and did not allow them to work dynamically with the enterprise to focus on the emerging opportunities or concerns particular to their context and values which had been revealed through the Triage session. To this end, this session is now approached with a 'blank piece of paper'. However, the session is informed by, and builds from, the homework which is given to participants at the end of the Triage. This means that the session is free-flowing, driven in the main by speculative 'what-if...?' questioning with the DFs having a range of methods and tools (such as those mentioned above – or variants of them) available to call on should the situation dictate. Homework is given at the end of this session to help ensure that the focus of the third session remains pertinent after a period of post-session reflection. Its presentation at the start of the next session acts as a sense-check on progress.

### **Session 3: Road-mapping your opportunity**

Road-mapping starts to make the future opportunities feel more achievable as it is all about trying to understand what needs to happen in order for a preferred future to become a reality. The emphasis is on trying to assist the enterprise in identifying what needs to be in place in order for them to be ready to exploit the innovation opportunity that they, together with the researchers, have collaboratively created. In this session their readiness for design-led innovation is being explored and revealed as their business basics (the data one might typically associate with an innovation audit) are applied to speculative futures. This synthetic act allows participants to fuse their existing knowledge about their enterprise with creative challenges and prompts from the DFs. Here, templates are used to help provide structure and make explicit the aims and objectives of the innovation; the enablers (and barriers); and the steps and stages involved in realising the opportunity.

### **Session 4: Unpack and debrief**

By taking participants back through the material of the previous three sessions, the last of the formal sessions provides the opportunity to reflect on what has been learned from exploring the enterprise's innovation readiness through the act of seeking to identify innovation opportunities. In addition, this session provides the space and structure to work through what will be required to make these opportunities a reality. This is valuable as it allows participants to distil the new knowledge that they have collaboratively created with the DFs into plans for short, medium and long-term action. Reflection is structured around predetermined questions designed to aid participants' in considering the potential impact of the programme on their future action.

## **Research Methodology**

The methodology employed in this study is that of action research as this study relates to practice, the practice of design facilitation (Aguirre et al, 2017). The role of the researcher in the context of this study is interesting and owes something to the practice of co-generative action research in which Greenwood and Levin (2004) position the researcher as 'outsider' working co-generatively with 'insiders' (problem-owners, stakeholders in a situation under consideration). Aguirre et al (2017) suggest that in design facilitation, designers 'act as both participants and facilitators' who 'foster participant interactions that generate emergent material'. This is how it is in the case of GRTI, and so the researchers who have undertaken this study, were both the designers of the GRTI programme, and participant design facilitators in its delivery. For readability, the term 'design facilitator' (DF) will be used throughout the remainder of this document to describe that multiple role. In the case of each workshop session of the GRTI programme, multiple DFs have worked together with each enterprise. One of the DFs has acted as scribe, visually modelling data and emergent ideas as the sessions have progressed. Such joint-working mitigates against researcher bias as well as establishing an important collaborative dynamic within the sessions.

Data has been gathered through a combination of participant surveys (conducted within the weeks following the end of the final session), analysis of workshop visualisations, field-notes (general observations about the sessions made by the facilitators during and after delivery), and semi-structured interviews with participants and DFs. The primary source of participant data is drawn from the reflective component of the workshop series where participants are asked to reflect on their expectations of the programme; whether and how they benefited from the programme; what was missing from it; short, mid and long-term business impacts; impacts on working practices and approaches; and their degree of confidence in using creative thinking approaches to address business situations in the future.

An inductive thematic analysis has been employed to enable the authors to identify recurrent, emergent themes amongst each participant group. These emerging themes have then been explored through co-reflection. Whilst the researchers have reflected on all of the different iterations of GRTI, it is only from the CFNE programmes that data has been used for thematic analysis.

Our research here responds to the question: what are the distinct characteristics required to support readiness for design-led innovation in Micro SMEs?

## **Findings**

Findings are presented in two sections relating firstly to participants' reflections on the programme. Second, DFs' reflections on the approach as a whole are considered.

### *Participants' reflections*

Five clear themes emerge from analysis of participants' reflections on the positive aspects of the programme that they valued. These are presented as desirable attributes in order of their prominence within the data, with the first being the most prominent and so forth. Each is considered separately below.

#### **Reflection**

The importance of reflection to the participants is evident in three ways. Firstly, there is almost universal evidence in the data that participants valued, above everything else, a dedicated opportunity to work 'on' the enterprise rather than 'in' or 'for' it. "I realised a valuable level of introspection, that I'd normally feel I was too busy, or 'knew where I was going', to really engage in" (A4).

They recognised that stopping to reflect about what they have been doing, why they are doing it and what they plan to do next feels "indulgent to take half days off to explore non-commercial, upstream parts of the business [but this] investment has paid for itself" (E2). Secondly, many valued the honesty of reflection; the "sense of holding a mirror up" (E2) and discussing what they see. The third value attributed to reflection was with regard to reflecting on things that have not gone well and learning to recognise that "failing' is a positive step in the development process" (E6).

#### **Confidence**

Also evident in many participants' reflections is the attribute of confidence. Participants felt that the way in which the DFs of GRTI respected their ideas and 'generously' contributed to them validated the purpose of their enterprise, the specific innovation that they were pursuing or even them as entrepreneurial individuals; "at the start I had imposter syndrome and I don't anymore, [I] feel confident in it" (E7). "I can value my worth as an experienced practitioner" (A3).

In the design domain, we often refer to Creative Confidence 'the ability to come up with new ideas and the courage to try them out' (Kelley and Kelley, 2013). In the setting of GRTI, this was especially evident in that many of our participants were founders who had self-evidently had the confidence to put their ideas into practice. However, what was surprising was how many of them appreciated the confidence-building of context-specific worked-examples generated in the sessions and the 'generous' collaboration and input from the DFs.

#### **Purpose**

Many participants identified that the direct questioning, and in particular the focus on persistently questioning 'why' they do certain things helped them to find, and describe, the purpose that drove them to start their enterprise and the motivation to sustain it. Articulating this purpose explicitly is beneficial to innovation readiness because it can help to act as a metric for evaluating whether or not to invest time and resource in future opportunities allowing them to question "does this opportunity fit with my core purpose? If not, why pursue it?" (A3). Being more purposeful provided "an opportunity to 'think about the really important stuff. [It] cleared the way and has given us a vision of the future" (E7).

#### **Practical Action**

Other evidence suggests that leaving GRTI with a clear set of plans, and a priority order for executing them has been valued by participants. This is important because, to a certain extent, GRTI deals with the abstract, a future vision for the enterprise. Tying this to a set of actions that individuals can readily see themselves taking makes the future vision a visible possibility and has helped with "pinning down the tangibles and knowing how to develop it, how to progress it" (E6). Further it has aided with prioritisation and planning, and in some cases, aided enterprises in deciding what not to do as well as "what to get tactical with first [...], what to do and where to put my energy" (D1).

#### **Collaboration**

Design Thinking promotes multiple disciplinary perspectives concentrated on a given situation. In the case of GRTI, participants have valued the collaborative nature of the engagement of the DFs in addressing their situation. Invariably, this has brought the design discipline to bear on the situation, but, additionally, the DFs, due to their training, have been able to bring to life the concerns of other stakeholders in the situation. This is manifest in the structure of the Triage which explicitly seeks to understand the motivations and concerns of the network of others that contribute to the production of the enterprise's product or service. Participants also recognise that the "creativity of people together works, challenged [...] and provoked different ways of thinking" (E7). In some ways, DFs taking on the voices of different stakeholders in the sessions offers exposure to the potential value of adopting the stakeholder-centric approach that distinguishes design-led innovation. It is

notable, of course, that many Micro SMEs operate as sole-traders or with just two or three employees meaning that opportunities for critical or creative discussions are comparatively limited, thus elevating the potential value of this attribute to MSMEs.

### *Design Facilitators' perspectives*

Reflecting on their experiences of designing and delivering the different iterations of GRTI, DFs shed light on five distinguishing characteristics that help to shape the readiness of individuals and organisations to engage in design-led innovation.

#### **Context and environment**

The Triage session is seen as especially important in enabling the DFs to frame the enterprise's situation, to understand the scope of opportunities and appetite for change and to benchmark their innovation-readiness at the start of the programme. However, it serves to do more than that as it allows participants and DFs to paint a picture of the organizational context (capabilities; capacity; networks; resources; business models etc.) and external environment within which the enterprise operates (sector, market, competition, legislative frameworks etc.). Painting this picture allows the DFs to explore with participants the priority challenges for the GRTI programme and, therefore, to determine how they will proceed. DFs may know nothing or little of the professional context and the participant may be biased, wrong, ill-informed or relatively accurate. Gently working out the degree of confidence and what informs this confidence is also part of the context building.

#### **Fluidity**

Very early in the delivery of the first GRTI programme, it became apparent that a prescriptive approach would not be suitable for working with the particulars of MSMEs. A distinguishing characteristic of GRTI, therefore, and in particular session 2: Modelling Opportunities, is that it is non-prescriptive in approach, relying on design process knowledge to guide what is most appropriate. Whilst typical innovation readiness business tools follow an un-erring processual approach, GRTI is deliberately designed to respond to the contextual circumstances of each enterprise. DFs have confidence in their collective ability to work with the emerging priorities of the enterprise and to devise, in real-time, suitable context-specific means of responding. In this way participants are exposed to a design-led intervention, applied to their organisational situation. They can witness, and participate in design-led activities and see how these can be tailored to address their particular needs. Because the approach at this stage is fluid, the DFs can choose to adopt a whole range of design methods and tools.

#### **Rapidity**

Because of the time constraints imposed on each session, the DFs have to work with an intensity that doesn't always allow for deep and detailed consideration of each and every idea or matter under consideration. However, this rapidity is not necessarily seen as a disadvantage – because they are working fast, DFs have the licence to invite participants to put their hesitancy or discomfort about an idea on hold so that its potential can be rapidly explored whilst not getting bogged-down in details. This allows participants to be involved with the rapid generation of multiple different possibilities explored from multiple different perspectives. In a very short period of time they are part of creating multiple different visions of possible futures for their enterprise. Whilst this offers great value, it can also be destabilising and DFs have noted that they have to establish trust and rapport (Lampitt Adey et al, 2019; Carrion-Weiss et al, 2021) in order to ensure that they are operating within a safe environment for innovation (Bailey and Smith, 2010).

#### **Time between**

Participants have noted the importance of reflection in their experience of GRTI, and the DFs, perhaps unsurprisingly with the reflective-practice orientation of designers, have recognised this importance too. DFs have noted, increasingly over latter programmes, that the space between workshop sessions (typically a week in most programmes) provides an important time for introspection, to consider what has been done in the workshops so far, and what is being explored for the future. During the course of each session, the DFs will look out for potential sticking-points, or details that require further interrogation before they can be taken forwards. Based on these observations, they will devise homework tasks for the participants that provide a structure to their reflection and a springboard into the subsequent session. In circumstances (such as GRTIA) where the time between has been extensive, it is clear that momentum is lost, whilst in other instances where the time between has been too short, participants haven't had time to consolidate their thinking.

### **Nurture**

Much of the data provided by participants indicates that their confidence in their own ability to come up with and develop sustainable innovation stemmed from the way in which DFs took their ill-formed ideas seriously and built upon them rather than dismissing them. DFs observed that design-led innovation readiness relies on how well fragments of ideas can be brought together to form a robust whole and that in the collaborative act of envisioning multiple possible futures and aligning them with an organisation's values, ambitions and purpose, innovation readiness is not just measured, but nurtured. Again, the fact that these are MSMEs who don't necessarily benefit from critical dialogue with colleagues within their enterprise, similarly, they don't necessarily have access to the supportive network of a team to work in.

## **Discussion**

The aim of this study is to explore the role of a design-led intervention in priming micro SMEs for strategic innovation. The authors have set out the GRTI programme as a model for achieving this and described how it has been continuously redesigned over time to suit different circumstances, whilst retaining a fundamental structure based on looking both into the past and to the future in order to develop actionable innovation plans. From inductive thematic analysis, the authors have recognised five attributes of the programme that are valued by participants, and five characteristics of the delivery that DFs consider to be important in achieving those attributes. The authors have not sought to identify causality or alignment, rather the authors recognize that these are aspects to be aware of in the dynamic practice of design facilitation with MSMEs.

In their article, *Hunting the Opportunity: The Promising Nexus of Design and Entrepreneurship*, Nielsen, Christensen, Lassen and Mikkelsen (2017) suggest that 'opportunity creation is a process in which the fluffy links and borderlines between design and entrepreneurship can be considered advantageously'. What the authors demonstrate in this paper is a means by which these links between creative possibility and business realities might be rapidly and artificially synthesised into representations of possible futures as a form of speculative knowledge venturing. Here the rapid and creative synthesis of purpose, multiple perspectives and organisational context, for example, can stimulate the generation of fragile ideas which, if suitably nurtured and explored, can support growth in confidence amongst participants. In this context, such artificial opportunities are 'temporary constructs, steps on the way to new, iterative generations of opportunities' (ibid). GRTI provides a safe environment in which such temporary constructs are nurtured and materialised as verbal or visual prototypes through which to explore their potential and the enterprises' readiness to exploit them. In this case, both the 'experimentation and prototyping' and 'the diversity [of knowledge/experience] and co-creation' principles of Design Thinking are advantageous. Co-creation here involves DFs proffering their ideas as devices that help to reveal and make explicit the tacit knowledge residing in others. This process of sharing, of synthesising tacit and extant knowledge within the group into new opportunities is at the heart of co-creation, it is a process of new knowledge co-creation. Participants perceive the DFs' act of proffering their ideas as generosity, whereas the DFs see it as a mere device for developing greater collective understanding. This co-created knowledge offers a platform for establishing practical action plans, which further serve to give confidence to proceed.

Design-led approaches are promoted for their user-centricity and customer focus. However, Gulari and Fremantle (2015) suggest that due to scale and proximity, SMEs tend to know their customers well and thus this aspect of design-led innovation is less relevant to them. On the other hand, Nielsen, Christensen and Stovang (2021) suggest that the Design Thinking principle of user/customer focus using such tools as customer journey mapping and personas helps to reveal new knowledge to entrepreneurial managers of SMEs. The authors would argue firstly that customer or user focus is not enough, a wider stakeholder view is called for, and secondly, that it is not a case of whether stakeholders are considered that is important, but how they are represented as forces for innovation. For this reason, through critical questioning, GRTI seeks to reveal the relationships and networks of stakeholders that support, prompt, enable or hinder innovation within the enterprises' context.

The approach that the authors have revealed relies on the dexterity and confident, real-time creativity of design DFs to engage with hitherto unknown situations within the specific context of a given enterprise and to nurture that enterprise in exploring new future opportunities. By representing multiple different stakeholder voices within the workshops, the DFs are able to expose the enterprises to a form of rapid stakeholder-centric design that helps them understand the importance of thinking beyond 'customer-focus'. By translating these opportunities into actionable plans for strategic development, the enterprise is supported to develop their understanding of how ready they are to innovate. Having taken a design-led approach to the design and delivery of the workshops, the participants develop an understanding of what it means to adopt a design-led mindset which, in turn they may adopt in their future practices.



Analysis of the data also revealed that the majority of participants signed-up for GRTI unsure what to expect, but recognising that some form of creative design input may be beneficial and were curious to find out how. This open-minded curiosity is likely to have played some part in the positive outcomes that most participants reported. On the other hand, this observation also identifies a potential failing in the way in which GRTI was promoted, failing to be clear about what the support would achieve. Framing future programme promotion around the attributes identified in this study, may help to bring some clarity in this respect.

A significant limitation of working with MSMEs is in the small numbers of employees who can be involved in the workshops (even the largest MSMEs only spared 3 staff to engage in GRTI) and this can mean that the contextual understanding and subsequent co-creation leans towards the biases of those individuals. The authors are able to help broaden their perspectives and see their situation differently and if they are leaders in their enterprise this may be enough to alter the organisational mindset, but if the authors are working with only a small cohort or single employee of an enterprise, it may not.

## Conclusions

Mosely, Markauskaite and Wrigley (2021) state that:

*Design facilitation is an emerging design practice, acknowledged across and within the literature, however it is represented in different ways, within different contexts when applied for different purposes, demonstrating design facilitation as a practice that is not well defined both within and outside the field of design.*

The authors have explored an application of design facilitation to support the development of innovation-readiness in MSMEs. In this research design facilitation was highly participatory, where the DFs often outnumber the facilitated. The authors identified that the DFs are reliant on their ability to tease-out of participants a detailed and accurate representation of their context in order to nurture their creativity through 'generously' contributing their ideas as stimuli for the co-creation of knowledge about multiple possible futures and the translation of these into actionable plans.

Unlike more typical innovation readiness audit tools, this generative approach offers a safe environment, a virtual studio, in which to work with speculative knowledge to explore and experiment in a critically supportive way. This supports participants:

- to become more **reflective**
- by equipping them with new-found creative **confidence** and validation their entrepreneurial and innovative potential
- by enabling them to **purposefully** conceive of and map out new innovation opportunities for their enterprise
- to prioritise what **practical action** to take next
- to value **collaboration** as a means to greater stakeholder understanding

Our study suggests that when adopting a design-led approach to working with MSMEs on their innovation readiness, DFs do, in fact, aid them in both understanding where opportunities lie, *how they might exploit them* (using a design-led approach) and *why this matters* to them because DFs start by exploring the purpose behind their endeavour and use this as a springboard for knowledge co-creation. We might call the innovation-readiness that this programme achieves readiness for purpose-driven, design-led innovation.

With these learnings in mind, the programme is being further developed to support specific clusters of enterprises, such as community interest companies, or sole traders. These developments allow for more nuanced approaches to be adopted whilst maintaining the essential fluidity of the programme approach.

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# MULTIDISCIPLINARY INNOVATION ARMENIA: EXPLORATIONS IN DESIGN-LED MULTIDISCIPLINARY ENTERPRISE EDUCATION

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## ABSTRACT

This paper addresses the question to what extent can rapid design-led interventions support enterprise education? The work is based on a three-year engagement with students and recent graduates in Armenia. It was inspired by a course of innovation-readiness workshops called Get Ready to Innovate used to support established small and medium-sized enterprises operating in North East England.

The paper provides a critical assessment of the adaptation of the GRTI model for the Armenian situation and its strengths and limitations for addressing the requirements of innovation readiness (the willingness, creative mindset and plans to make a positive change) amongst budding Armenian entrepreneurs.

Mixed-methods are used, combining inductive thematic analysis of participant surveys, co-reflective workshops and semi-structured interviews.

Findings suggest that there are a number of benefits associated with adopting a design-led approach, including enhancing creative confidence and multidisciplinary team working. In comparison with other forms of enterprise education, participants and facilitators identified a greater emphasis on front-end exploration and stakeholder focus.

It is also clear that there were shortcomings in the approach associated with a mismatch in expectations between the facilitators and participants. The authors identify the challenges associated with this mismatch and some steps they took to overcome these. Finally, they identify scope for future research that considers implications for educational and enterprise-creation policy as well as discrete programme development.

*Keywords: Enterprise education, design-led education, co-created knowledge, innovation readiness, design facilitation*

## 1 INTRODUCTION

In 2018, through a British Council Creative Spark programme, Northumbria University School of Design partnered with the American University in Armenia to develop and deploy a design-led Enterprise Education programme. Supporting principles of the programme aligned with design thinking included establishing a deep understanding of stakeholders; welcoming multiple different disciplinary perspectives; a willingness to frame and reframe the enterprises' situation; rapid ideation; a focus on trying things out; and reflexivity. These principles were employed all with the purpose of enhancing creative confidence - 'the natural ability to come up with new ideas and the courage to try them out' [1]. The programme was based on a successful suite of design-led business support workshops designed and developed by a team of design academics and researchers at Northumbria University as part of the Creative Fuse North East action research programme [2], [3]. This programme, called Get Ready to Innovate (GRTI) [4], focused on promoting innovation-readiness (the willingness, creative mindset, and plans to make positive change) in established SMEs in NE England with the purpose of supporting those SMEs to deliver regional growth. The design-led approach was adopted for its focus on strategic development. The GRTI programme comprised a total of twelve hours of support spread over three workshops and one review meeting and was firmly targeted towards established, trading enterprises. The decision to employ this approach in developing a new programme of enterprise education was based on three factors:

1. the team was experienced in using design-led approaches to educate Master’s students for and about innovation and had seen; a, a significant development in these students’ creative confidence and b, that the approach was useful in supporting entrepreneurial growth [5], [6].
2. independent evaluation of the Creative Fuse North East GRTI had demonstrated that it was effective in supporting individuals and enterprises to develop both their business ideas and their own confidence as entrepreneurs.
3. the programme had been designed in response to a regional economic development agenda which was very similar to the underlying policy agenda underpinning the British Council’s work in Armenia (and surrounding countries in that region).

### 1.1 Programme design

The original GRTI proceeded through four stages with design facilitators using defined templates and a combination of pre-prepared and ad-hoc prompts to encourage participant enterprises to uncover and explore creative opportunities for the development of their venture. Adapting the approach for the Armenian programme, Get Ready to Innovate Armenia (GRTIA), the team recognized that they would need to adapt it to take account of the fact that the Armenian participants were younger and less experienced and were not necessarily trading. They determined that longer sessions and more scaffolding devices would be required. Keynote lectures were introduced at the start of each block, additional and more detailed templates were developed and ‘homework’ was set between sessions. Table 1. compares the two programmes.

Table 1. Comparison of the two programmes

GRTI	GRTIA
<b>#1 Triage:</b> Exploring the business as a whole, whilst also understanding who the individuals within the organisation are.	<b>#1 Modelling the Situation:</b> build a picture of you, your vision, ideas, value-chain and the idea’s environment. Understand how change, uncertainty and risk are influencing factors in order to consider your challenges, opportunities and where excitement lies.
<b>#2 Opportunity Mapping:</b> Explore the organisation’s challenges and opportunities and find early-stage solutions to the goals they identify.	<b>#2 Modelling Opportunities:</b> Explore and clarify a range of opportunities that relate and build towards your vision. Design-thinking activities help articulate ideas, clarifying impacts and consequences of innovation opportunities and their enablers.
<b>#3 Road Mapping:</b> Exploring the goals of the organisation in more depth, looking at the barriers and enablers. Create a roadmap of activities to help understand next steps.	<b>#3 Detailing the Opportunity:</b> Creatively probing different timelines and eventualities, user-journeys and stakeholder maps to develop a deep, holistic understanding of innovation readiness.
<b>#4 Review:</b> Drill down deeper, reflect on the process and the key learning points.	<b>#4 Transition Plan &amp; Communications:</b> Evaluate opportunity which has developed and make plan for the future development. Mentors support creating a plan of action to enable change and move positively towards vision, with clarity about how to communicate proposal to different audiences.
	<b>#5 Unpack:</b> A series of direct prompt questions used to clarify and consolidate learning and hone entrepreneurial purpose.

Critically, the programme was designed to be delivered by local mentors who would shadow the UK team in the first delivery and who would be provided with comprehensive training resources and templates with which to run subsequent sessions. They would support participants between the sessions which would run in three-day blocks over the course of six months. The plan was that participants would be working in multidisciplinary teams developing a pre-existing business idea with which they may, or may not, have been trading.

## 2 METHODOLOGIES

Three methods of data collection were employed, the first two to aid understanding of the participant experience, the third to gain insights regarding the facilitators' perspectives.

A survey, conducted in a face-to-face setting during the final 'Unpack' session was undertaken with twenty-four participants, with a 100% return. The survey was designed to support participant reflection and to aid them in internalising their learning, whilst simultaneously acting as an initial data collection method. There were seven questions in all, with participants coached to consider in detail how they would now describe their business; who their stakeholders were and what matters to them; to think about immediate action plans; and what potential pitfalls that they should avoid. They were also asked to consider three open-ended questions: 'What have you learned?'; 'How have you changed?'; and 'What must you do next?'. Answers to these three questions informed this study. Written responses to the survey were collected so that they could be reviewed, coded and subjected to inductive thematic analysis.

Purposeful sampling was then used to engage six participants in semi-structured interviews which explored, in greater depth, the answers that they had provided to the survey. Field notes were made during these interviews, again to support thematic analysis.

Two co-reflective workshops involving the authors were conducted with an independent research assistant acting as scribe and also to help ensure that the risk of researcher-bias was minimised. The authors had all been involved as facilitators of the GRTIA programme, four were also involved in delivering GRTI in the UK and two were responsible for devising the original programme. The workshops were structured to promote collaborative reflection. The first, by working methodically through the GRTIA programme session-by-session, aided the facilitators in recalling the specifics of the programme and the participants involved. The second workshop explored each of the themes emergent from the analysis of participant data and considered these alongside the facilitators' own experiences enabling general conclusions to be drawn, backed up by participant evidence. Notes and direct quotations were captured in the form of virtual sticky-notes on a digital white board further aiding subsequent analysis.

The emergent findings were then considered in light of a broader data-set drawn from field notes taken during the original GRTIA workshops, notes of semi-structured interviews with young entrepreneurs, higher education leaders, business leaders and policy-makers all conducted by the authors in Armenia over the course of the GRTIA programme.

## 3 FINDINGS

The findings can be broken down into two quite separate categories: the self-reported strengths and limitations of the programme as experienced by the participants and the reflective experiences of the facilitators. We will initially consider these separately.

### 3.1 Participants' Perspectives

We find that the programme succeeded in helping participants develop in four main ways:

1. All twenty-four participants provided responses that indicated that the programme had aided them to establish clarity in the next steps to be undertaken as well as consideration and/or development of a strategic plan for their business.
2. Enhancing their creative confidence - by the end of GRTIA, field notes indicated that around 80% of participants had stated that they felt more confident to generate, articulate, analyse, criticise & share their ideas. In written survey responses, however, participants didn't specifically mention the term 'creative confidence', although 11 out of 24 mentioned characteristics that align with Kelley & Kelley's (2012) definition [1].
3. The programme's design and delivery allowed the participants to learn how to use new approaches (to them) such as Design Thinking (DT) and creative problem-solving. Specifically, nine mentioned DT, two creative problem-solving, and one both.
4. Uncovering the power of teamwork and multidisciplinaryity, whether it was with stakeholders or with their teammates, as it challenged views and brought different areas of expertise to the table.

### 3.2 Facilitators' Perspectives

Co-reflection allowed the facilitators to consider how they had adapted the programme to suit the funder's enterprise education agenda and to explore what had gone well and what was lacking. In terms of what went well, achieving the participant outcomes set out above could all be considered successes, but it is important to look beyond these and to consider the backdrop against which they were achieved. The authors find:

1. A mismatch in the expectations of facilitators and participants – facilitators designed the programme to be delivered to existing teams with established business ideas. Participants joined the programme looking for guidance in how to establish teams and business ideas, with a clear emphasis on front-end stages of innovation
2. The local mentors, whilst exceptionally enthusiastic, experienced and engaged, did not share the same level of design knowledge or expertise as the facilitators. Thus, the dual challenges of introducing new concepts of design-led enterprise coupled with some linguistic limitations presented difficulties
3. The episodic nature of delivery (four, three-day blocks over six months) caused unhelpful inertia
4. Due to their different disciplinary backgrounds and limited experience, some participant teams lacked certain fundamental business know-how or knowledge which hadn't been anticipated in the programme design

The facilitators became aware of these factors as programme delivery progressed – this was an evolving story and one to which they had to respond in real-time.

## 4 DISCUSSIONS

We have seen that the design-led approach adopted in GRTIA did achieve the aim of enhancing creative confidence, but in considering the extent to which GRTIA usefully supported enterprise education in Armenia, we need to consider more broadly what successful enterprise education programmes might achieve and how design may contribute. The UK Quality Assurance Agency for Higher Education, QAA, states that the 'overall goal of Enterprise and Entrepreneurship Education is to develop entrepreneurial effectiveness'. They define enterprise as 'the generation and application of ideas, which are set within practical situations' and Entrepreneurship Education as 'the application of enterprise behaviours, attributes and competencies into the creation of [...] value' [7]. Jones et al (2014) suggest that enterprise education is 'positioned increasingly as the foundation of entrepreneurship education' [8] and, therefore, propose that the term Enterprise Education is used to refer to this collective domain. QAA presents a model towards entrepreneurial effectiveness which encompasses entrepreneurial awareness, competencies and mindset. Fundamental to developing the entrepreneurial mindset, confidence-building, as noted by Penaluna and Penaluna (2012), 'is crucial' [9]. As a minimum, then, growth in the confidence to generate, experiment with, and exploit ideas, can be seen as a measure of success of enterprise education.

### 4.1 Expectations

Aside from the evident mismatch in expectations described previously, it is worth considering other innate expectations that may be influential. We might term these cultural expectations and they relate to certain characteristics associated with prior educational experience and disciplinary alignment. Outside GRTIA, the authors were involved in action research to inform the production of enterprise education policy recommendations for Armenia. Through this, they gathered data from young entrepreneurs, higher education leaders, business leaders and policy-makers in Armenia regarding their experiences and expectations of the education system. This research suggested that they are familiar with a more didactic and theory-heavy approach than the dialectic, Socratic, and practice-based mode typical of the UK-based design education approach that underpinned GRTIA. Possibly more influential was the disciplinary upbringing 'constituting different signature pedagogies, mores and behaviours' [10] which can adversely influence both access to unfamiliar learning opportunities and multidisciplinary team interaction. This does not mean that the participants were unable to access or learn from GRTIA, but that they required more reassurance in the approach and adaptability on behalf of the facilitators to provide them the necessary scaffolding.

## 4.2 About Learning

It is easy to draw parallels between the aims, outcomes and approaches adopted in the Enterprise Education domain and those employed in design and innovation education. Indeed, QAA's aforementioned definition of enterprise could equally well be used as a definition of innovation. Further, QAA qualify their description of enterprise as combining 'creativity, originality, initiative, idea generation, design thinking, adaptability and reflexivity with problem identification, problem solving, innovation, expression, communication and practical action' all very familiar attributes that design and innovation education seek to develop. Further, Rauth et al (2018), [11] position DT as an effective model for education in support of enhancing creative confidence which Kelley and Kelley describe as lying "at the heart of innovation" as it requires us to face challenges and take risks [2]. Such confidence is closely related to Bandura and Jourdan's concept of self-efficacy - an individual's belief in their capabilities "to mobilise the motivation, cognitive resources and course of action", required to reach their goals [12]. Jones et al. (2019) propose that entrepreneurial agency ('the agency individuals demonstrate in directing their conscious thinking and action toward an alignment of their inner and outer worlds in order to succeed in life') is developed through a combination of pedagogic (educator-directed), andragogic (student self-directed) and heutagogy (student-negotiated) educational approaches [13]. The design of GRTIA, which relies on educator and learner engaging in a heutagogy approach, coupled with the innate Socratic orientation of the educators, was at odds with the cultural expectations of the cohort and this created a situation in which the educators had to be both adaptable and creative in real-time in order to support the different needs of the different learners (as well as the trainee mentors) in the workshop situations. The unique nature of design facilitation is of interest here as Mosely et al (2021) [14] suggest that '[d]esign facilitation is a highly complex, integrative, emergent practice that is innately linked to design process knowledge and understanding'.

The authors rely on this design process knowledge and understanding in their facilitation of such programmes and further research is indicated with regard to the potential of design facilitation as a pedagogic device.

Arguably, as seen in our findings, the design-led approach places greater emphasis on stakeholder needs and desires. Through re-framing ideas with a stakeholder lens, participants are encouraged to be more experimental with their ideas, and in doing so, gain more confidence both in the idea and themselves. This emphasis tends to focus attention on front-end innovation, ensuring that the challenge being addressed is the 'right' one and that the supporting value-proposition takes account of multiple perspectives. Indeed, none of our survey data mentioned any hard business outcomes resulting from involvement in GRTIA.

## 5 CONCLUSIONS

This research is limited in that there is no counterfactual analysis to tell us how these participants might have fared without GRTIA, the size of the sample group is relatively small and no longitudinal study into the long-term impact of the programme has yet been conducted. All of these factors represent further research opportunities.

We can see that on some levels the design-led approach did deliver. However, the programme, in not recognising cultural mismatches and expectations, or the need to scaffold learning more effectively with a blend of pedagogic content knowledge - 'the command of the content within a given domain' [8] with andragogic and heutagogy approaches made progress slower and more challenging. Arguably, the desired degree of transformation of a learner within this context may be too ambitious for such a short, episodic programme.

To keep the programme on track the facilitators had to be highly adaptable in real-time in order to create an environment in which participants felt safe to take creative risks. Carrion-Weiss et al (2021) suggest that participants perceive the design-facilitator's natural tendency to offer ideas as a means to draw-out knowledge, as generosity [15]. This approach of the facilitators meant that, when participants were struggling with aspects of the programme, facilitators were able to help them understand troublesome concepts by co-creating new knowledge (in the form of ideas) [10] about their own business proposition, thus making the concept more relevant to their situation and thereby more accessible.

How useful is this research and to whom? We suggest that two valuable contributions result from this:

- Adopting design-led approaches to enterprise education can enhance the creative confidence, stakeholder focus and future-focus orientation of participants. This is beneficial for those



planning enterprise education programmes who hope to achieve some participant transformation at a mindset level

- For those planning such activities working with participant groups with diverse cultural backgrounds, disciplinary upbringings, or in an overseas location, detailed background research and planning is suggested together with investment of adequate time to fully understand the level and context within which they are operating.

The authors have continued to work together supporting the British Council's Higher Education Policy Dialogue sessions (facilitated by the authors using a very similar approach to GRTIA) and establishing and running a number of design-led innovation certificate programme projects. These action research activities are helping to build a broader picture of the role that design-led innovation approaches can play in enterprise education, creation and policy.

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# Three degrees of influence in virtual workshops: towards an understanding of co-creative facilitation practice in technologically mediated settings.

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<https://doi.org/10.21606/drs.2022.323>

## Abstract:

Virtual workshops look here to stay, however much of the recent discourse focuses on methods, tools, techniques and routines in abstraction from practice and practitioner. Collaborations in virtual space are necessarily changed and shaped by their technologically mediated nature. Therefore, it is imperative to enter into reflective dialogue to effectively develop future participatory and co-creative design practice in virtual settings. Several significant phenomena, occurring within virtual workshops, have been identified through focused co-reflection by expert design facilitators. Duality is used as a rhetorical device to explore these phenomena as complex *elements* that are expressions of dynamic and intertwined influences within the virtual setting. These elements are simultaneously experienced as both enablers and barriers in virtual workshops, and are negotiated through practice. This paper positions these elements as objects for critical reflection within a propositional model of three expanding degrees of influence; stage, setting, and environment.

**Keywords:** virtual collaboration, design facilitation, design innovation, reflective practice.

## 1. Introduction

It is suggested that COVID-19 is transitioning from pandemic to an endemic disease (Charumilind et al., 2021; Phillips, 2021), although the disruption of this crisis is still being felt. Ways of working have been significantly impacted but, amongst the negative impacts of this disruption, there have also been positive outcomes. Remote working has been proven effective at scale (Lund et al., 2021, p. vi), favourable in terms of flexibility (Smet et al., 2021, p. 2), and can contribute to an organisation's resilience (Baker, 2021). Indications suggest a future where remote working remains common, or continues to grow in prevalence. Either way, it is here to stay and therefore a stronger understanding of collaboration in virtual settings is required.



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Workshop-style interventions are a common form of engagement activity across most sectors. The term workshop describes “an arrangement whereby a group of people learn, acquire new knowledge, perform creative problem-solving, or innovate in relation to a domain-specific issue” (Ørngreen & Levinsen, 2017, p. 71). The pandemic has catalysed a rapid shift towards virtual, rather than in-person workshops (Becerra et al., 2021; Kent et al., 2020; Mennig & Tamanini, 2021; Samiei et al., 2020; Thorwid, 2020; Wilkerson et al., 2020; Zimmermann et al., 2021). Recent discourse on the implications of this shift to virtual workshops tends to focus predominantly on the methods and tools, structures and scripting, technology implementation and performance.

This paper approaches virtual workshops from the perspective of expert design facilitators and focuses on their experience of designing and delivering virtual workshops. Rather than adding to the existing discourse around methods and tools, this inquiry places emphasis on the process that unfolds through practice, during virtual workshops. This practice-oriented stance views design as a “situated, local accomplishment” (Kimbell, 2012, p. 141), where the roles and outcomes of the methods used cannot be separated from the situation in which they are applied, or from the practitioners applying them (Light & Akama, 2012, p. 69). In this sense, practice is influenced by and responds to “intermingling, performative flows” of continuously unfolding processes (Rylander Eklund & Simpson, 2020, p. 12).

## 2. Research Design

This study is led by the question: what new understandings about participatory, co-creative design practice are revealed through facilitators’ experience of delivering virtual workshops?

The inquiry takes the form of a single case study of an innovation support workshop programme, delivered virtually to 13 different enterprises within a 12 month period. Primary data is collected through semi-structured interviews with expert facilitators involved in designing and delivering the workshop programme. For the purposes of synthesis, this data is supplemented with interview data from workshop beneficiaries, and with facilitator self- and co- reflection. Results are drawn using inductive thematic analysis of the primary dataset.

The results identify several phenomena experienced by expert design facilitators as *elements* within virtual co-creative activities. *Duality* is used as a rhetorical device to express how each of these elements can simultaneously be positive and negative; experienced as both enablers and barriers in virtual workshops, which are negotiated through practice. This paper does not aim to offer a comparative study of the differences between in-person or virtual delivery. Rather it aims to move towards deeper understandings of these elements as objects of reflection, for consideration by other participatory and co-creative practitioners, and expanded upon as a means to develop future practice.

### **3. Background**

This paper is positioned in the context of designing, delivering, and evaluating participatory workshops that are conducted virtually, using video conferencing and digital collaboration tools. Overall, contributors report that virtual workshops are effective in respect of their objectives, and when judged according to the positive experiences of participants (Kent et al., 2020; Mennig & Tamanini, 2021; Samiei et al., 2020; Thorwid, 2020; Wilkerson et al., 2020; Zimmermann et al., 2021). Some common significant advantages of online workshops are reported:

- Inclusivity benefits of reduced overheads for participation, in terms of time, travel, and finances (Ekstrom et al., 2020; Samiei et al., 2020; Zimmermann et al., 2021), and due to the neutrality of virtual space as abstract from organisational, institutional settings (Wilkerson et al., 2020, p. 371).
- A satisfactory means to bring together geographically dispersed participants (Becerra et al., 2021; Ekstrom et al., 2020; Samiei et al., 2020; Yearworth & White, 2021; Zimmermann et al., 2021).
- Significant potential for reducing the carbon footprint of such activities (Ekstrom et al., 2020; Mennig & Tamanini, 2021; Rissman & Jacobs, 2020; Wilkerson et al., 2020; Yearworth & White, 2021; Zimmermann et al., 2021).

However, in contrast to the above, Mennig & Tamanini (2021, p. 138) identify that virtual workshops present some significant challenges to inclusivity that do not tend to affect in-person delivery modes. These barriers to participation are generally reported in terms of lack of familiarity, confidence or skills in using online platforms and digital tools. These conflicting statements are an expression of the rhetorical duality present in many phenomena experienced in virtual workshops, where each can vary between an enabler and a barrier, to various actors, at various moments.

Structure emerges as a dominant variable associated with phenomena in virtual workshops. Of those reported, several are significantly structured, be it by 'scripts' in the discipline of system dynamics (Wilkerson et al., 2020; Yearworth & White, 2021; Zimmermann et al., 2021), or using a prescribed 'Design Sprint' processes (Thorwid, 2020) or design thinking models (Yarmand et al., 2021). Kent et al., (2020, p. 661) identify that in virtual workshops, facilitators lose the flexibility they would have in-person to "roam the room" and fluidly move between group dialogues. Designing workshop facilitation around more structured roles is proposed as a means to compensate for this perceived limitation (Kent et al., 2020, p. 661). Similarly, in the context of virtual conferences Samiei et al. (2020, p. 7) recommend well-structured roles for volunteers based on specific tasks. On the other hand, Thorwid (2020, p. 18) positions well formalised workshop structure as an enabler in the virtual setting, fundamentally making such workshops possible. However, in this instance the workshops follow the prescriptive routine of design sprints and the perceived benefits of structural rigidity mainly revolve around higher efficiency in terms of time and staff resources

(Thorwid, 2020, p. 57), rather than a broader understanding of value within co-creative activities.

Mennig & Tamanini (2021, p. 136) observe that group dialogue becomes more awkward in virtual workshops, with people interrupting each other unintentionally. By imposing more structure on open discussion, Zimmermann et al. (2021, p. 5) suggest that facilitators can take advantage of software features (such as the raised-hand function) to moderate between organic debate and ensuring that all participants are able to contribute. Conversely, the increased structure of virtual discussion is suggested to be detrimental to the social and networking aspects of workshops, where interactions are “planned, timed, and infrequent” rather than organic (Becerra et al., 2021, p. 38). Yarmand et al. (2021, p. 4) recommend that workshop structures maintain a level of in-built flexibility; this responds mainly to the issue of overcoming technical obstacles by allowing more time.

Digital tools and technology feature strongly in recommendations, gravitating towards a combination of video conferencing applications and digital whiteboard tools. Applications supporting basic audio-visual interaction and chat functions are sufficient to host workshops, whilst digital whiteboard features allow effective collaboration (Zimmermann et al., 2021, p. 10). Simplicity is promoted as a key enabler (Ekstrom et al., 2020, p. 382) and organisers should focus on how easy-to-use and accessible the applications are for participants (Samiei et al., 2020, p. 4). Unless time is built-in to the workshop programme for necessary training, prioritisation should be towards simplicity and familiarity, rather than sophisticated features (Yarmand et al., 2021, p. 4). This is particularly important due to varying levels of digital literacy across participant groups (Zimmermann et al., 2021, p. 11). Technology can compensate to some extent for the loss of interaction between facilitators, that would otherwise be straight-forward during in-person workshops, by supporting external communication channels for organisers and facilitators (Samiei et al., 2020, p. 8; Yarmand et al., 2021, p. 4; Zimmermann et al., 2021, p. 11). Again, this should be implemented with simplicity in mind, so that team members do not need to check multiple applications or devices, and rather have all channels of communication on one platform (Yarmand et al., 2021, p. 4). Zimmermann et al. (2021, p. 69) also highlight the usefulness of breaks for facilitator communication.

The literature recognises that virtual workshops are more intense, with concerns about fatigue and increased cognitive load (Becerra et al., 2021, p. 37) and discomfort caused by sitting in front of a screen for long periods (Mennig & Tamanini, 2021, p. 137). In response, frequent breaks are strongly recommended (Wilkerson et al., 2020, p. 369), and - unlike in-person workshops - breaks should not be filled with activities, but used as time away from the screen (Mennig & Tamanini, 2021, p. 137). The impact of intensity on participation is an apparent theme, drawing attention to preparedness of the participants as an important variable (Ekstrom et al., 2020; Mennig & Tamanini, 2021). Perceived challenges include identifying activities to maintain participant engagement (Becerra et al., 2021, p. 38), participant disengagement due to distractions present with digital technology, such as email (Mennig & Tamanini, 2021, p. 136). The increased formality of online dialogue is also recognised as a

cause of discomfort, where participants may be hesitant or concerned about talking over one-another (Wilkerson et al., 2020, p. 369). The importance of building good rapport (Lampitt Adey et al., 2019, p. 7) is highlighted by Wilkerson et al. (2020, p. 369) during the early stages of workshops to foster active participation, however suggestions for how to achieve this are not presented. Interestingly, it is speculated the pandemic provided a shared and uniting experience that meant workshops were a welcome opportunity for interaction (Kent et al., 2020, p. 661), this is somewhat supported by the recommendation that rapport in virtual workshops can be enhanced by shared/common experiences (Mennig & Tamanini, 2021, p. 137).

The literature reviewed reports on perceived problems, issues and challenges during virtual workshops, as well as advantages and benefits experienced. The prevailing focus is on the identification of phenomena as strengths, weaknesses, opportunities and limitations oriented towards the methods and tools used to conduct virtual workshops. However, many phenomena in virtual workshops are inherently complex and relational, such as the simultaneously positive and negative impacts of digital technology on inclusivity. To work towards a deeper understanding of practice in virtual workshops, it is necessary to take a practice-oriented stance that recognises the unfolding nature of practicing in co-creative activities that are a “messy, contingent combination of minds, things, bodies, structures, processes, and agencies” (Kimbell, 2012, p. 141). More broadly, through a systematic review of participatory and co-creative design literature, Mosely et al. (2021) demonstrate that *design facilitation practice* itself is poorly defined and diffusely represented both within and outside the discipline. The role of the design facilitator is complicated further, as in co-creative activities designers act as both facilitators and participants (Aguirre et al., 2017, p. 199). Contributing directly to a definition of this type of practice is outside the main focus of this inquiry, although this matter is a constituent of the wider landscape within which this paper is situated.

## 4. Methodology

The inquiry is a focused (co-)reflection on the experience of delivering a workshop series as part of Creative Fuse North East 2.0 project (CFNE2), a major research project involving a consortium of 5 UK Universities and funded by the European Economic Regional Development fund (ERDF) and the UK Arts and Humanities Research Council (AHRC). A single case study (Yin, 2018) structure has been adopted in order to give form and focus to the inquiry, and as an appropriate way to develop a detailed and accurate understanding of a phenomenon, its context, process, influences and implications (Flyvbjerg, 2013).

Primary data:

- Unit of analysis: Get Ready to Innovate (GRTI) (Gribbin et al., 2018, p. 7) workshop programme that was initially designed and conducted in-person, now adapted for virtual delivery. This inquiry draws from the delivery of 13 workshop series, comprising 52 individual workshop sessions.

- Units of data-collection: facilitators who are responsible for the delivery of the virtual GRTI workshop programme. The sample group comprises 5 facilitators, 4 of which have previous experience of conducting GRTI workshops in-person. (To mitigate against bias, the 2 members of the facilitation team leading on this paper were omitted from the sample group).
- Primary data collection method: 2 semi-structured co-reflective group interviews, each of 1.5 hours duration. Interview 1 involved lead facilitators, interview 2 involved co-facilitators. Data sources comprise audio recordings and transcripts.
- Analytical procedure: the General Inductive Approach to qualitative data analysis (Thomas, 2006), using evaluation criteria relating to how facilitators experience delivering GRTI in the virtual setting.

Supplementary data:

- Digital whiteboards populated during GRTI workshops, including semi-structured sign off interviews conducted with beneficiaries. This data provides a supporting role, offering insight into the experience of the participant, and allowing an additional dimension from which to synthesise understanding.
- Practitioner self- and co- reflection by lead and second authors on their role as design facilitators in virtual workshops. This data was recorded alongside workshop delivery as post-session facilitator ‘unpacking’, and in a separate digital whiteboard dedicated to reflecting on this form of practice.

**DATA COLLECTION POINTS**

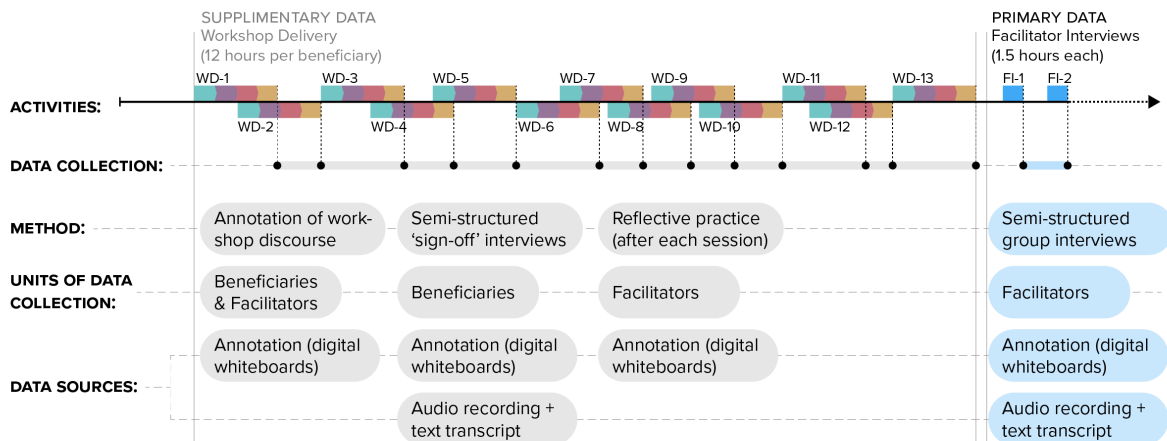


Figure 1 Indicative chronology of data collection points – the sequence of activities from which data was collected, the type of activity, the method of data collection, the units from whom the data originated, and the data sources.



#### 4.1. Methodological Bias

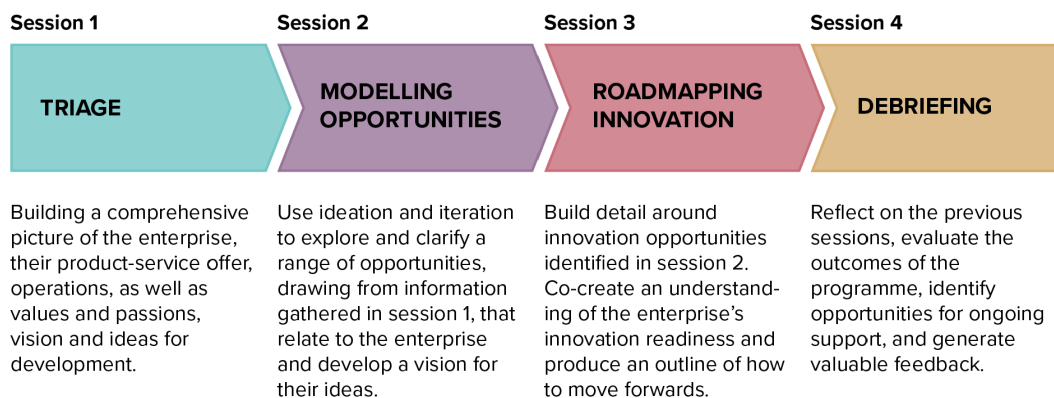
The potential for methodological bias introduced by facilitators reflecting on their own practice is acknowledged. This was mitigated against through the research design. The following measures were implemented for the collection of primary data:

- Two members of the facilitation team (lead author and second author) led the data collection process and did not contribute to interview responses.
- The rest of the design facilitation team were not involved in designing the structure of the interviews, or in creating the interview questions.
- A member of the project administrative team, not involved in workshop delivery, was present as a third interviewer to introduce an outside perspective when asking interviewees to elaborate on their answers.
- Interviewees were not involved in analysing the raw data set from their interviews.
- The two interviewers inductively coded the raw text data independently, following the same evaluation objectives.
- Themes were agreed through critical discussion between the two interviewers, comparing their independently determined categories.

#### 4.2. The Case – Get Ready to Innovate

The Get Ready to Innovate (GRTI) programme is fully funded by the ERDF and is defined as a participatory, co-creative and *design-led* (Bailey et al., 2019) workshop series.

##### WORKSHOP STRUCTURE: GET READY TO INNOVATE



*Figure 2 Get Ready to Innovate workshop structure – 4 collaborative sessions, each lasting 3 hours, and typically scheduled over a four week period.*

GRTI represents *workshops as a means* (Ørngreen & Levinsen, 2017, p. 72), in this case the workshop arrangement is based on focused collaboration between beneficiary and facilitators, determining the beneficiary's innovation readiness through a guided reflective approach that aims to create a roadmap towards actionable strategy (Gribbin et al., 2018, p. 8).

Beneficiaries of GRTI workshops are sole-traders or individuals from SME scale commercial and social enterprises, either based in the North East region of the UK (CFNE2), or Birmingham, Alabama as part of the EGK Starters programme (egkstarters.com), which was not ERDF funded.

### 4.3. Actors in the Virtual Workshops

Actors within the virtual workshops consist of beneficiaries and design facilitators. The term beneficiary is used in preference of the often used 'participant'. As recognised by Aguirre et al. (2017, p. 199) designers tend to act as both facilitators and participants in co-creative activities. In this case all actors in the workshop are *participating* toward a shared goal (defined by the beneficiary), working together to create new understanding about the enterprise's readiness to innovate. The virtual workshops that form the object of reflection had one or two people from the beneficiary enterprise, and normally three facilitators. The beneficiary roles comprise business owners or executives. They are not known to the facilitators before enrolling for the workshop programme. Facilitators in this case are part of a mature community of co-creative design practice, who work together on the CFNE2 project. Their roles are generally:

- One lead facilitator (LF): often this role was held by senior academics with extensive design innovation experience.
- Two co-facilitators (Co-F): typically comprising one senior academic and one junior researcher. The Co-F roles complement that of the lead facilitator, sharing the inquiry and also operating digital tools, documenting and mapping the session using a digital whiteboard.

## 5. Analysis

The analytical procedure used to interpret the dataset follows the *General Inductive Approach* (Thomas, 2006) to thematic analysis of qualitative data. In brief, this approach involves several iterations of close-reading of interview transcripts to code and categorise text segments, and subsequently derive themes. Evaluation objectives are defined to determine what is relevant to the analysis, which in this case are text segments relating to the facilitators' experience of designing and delivering virtual workshops. The two interviewers first analysed the data individually, and then came together to discuss their categorisations and reach mutual agreement about themes (table 1).

*Three degrees of influence in virtual workshops:  
towards an understanding of co-creative facilitation practice in technologically mediated settings*

*Table 1 Categories identified through inductive thematic analysis, in relation to their respective themes and example text segments from interviewees.*

	Categories	Example Segments
Structure	<p>Qualitatively different – less fluid, more intense. More structured process – scheduling and sequencing of activities/tools. Concern – limiting practitioner flexibility, adaptation Increased clarity of discussion (conversations more structured). Finding the balance, right amount of structure.</p>	<p><i>I think it's brought greater structure and potentially a bit more discipline [...] and is possibly a little bit more formal. FI-1/E</i></p> <p><i>I think there are dangers with any templated device where it becomes clinical, where it actually doesn't matter who the facilitator is [...] like a diagnostic tool, it is about the tool and its ability to diagnose [...] whereas it's about how we maintain a high quality, collaborative, reflective practice. FI-1/F</i></p>
Ambiguity	<p>Ambiguity making space for creativity and open ideation. Ambiguity as an enabler – dynamic working, facilitator flexibility. Risk of dis-engagement by beneficiary – ambiguity level is too high. Lack of ambiguity introduces risk of fixation.</p>	<p><i>How ready, how prepared, how able is the individual to cope with that ambiguity and disruption [...] if they don't cope well with that. That has a direct influence on actually how ambitious that reframing can be. FI-1/E</i></p>
Preparedness	<p>Over-preparation as a negative (risk of fixation, preconception). Preparedness as a source of confidence for Co-Fs. Degrees of beneficiary preparedness – digital technology (proficiency, quality of connectivity). Degrees of beneficiary preparedness – ambiguity.</p>	<p><i>If you know pretty much nothing at the beginning, and you're working with it in a completely dynamic way [...] you bring very few preconceptions to that situation so that does mean you can pursue lots and lots and lots of alternative lines of inquiry. FI-1/E</i></p>
Intensity	<p>Virtual workshops perceived as highly time-efficient. Virtual interaction felt to be more fatiguing. Sense of being 'always on' for facilitators. Intensity as positive – an energising influence. Need for facilitator attentiveness to fatigue (beneficiaries and other facilitators). Lack of non-verbal cues/body language (increased focus on verbal communication). Effect of changed space for interaction – confined to screen area, limited movement, fewer material qualities.</p>	<p><i>I think also there's something around efficiency [...] about how I might deliver something of value in this space as efficient as possible. FI-1/F</i></p> <p><i>[I]t's almost like an actor trying to get into person, it's the same, like the workshop is my stage, and I've got to kind of get ready, it's intense, like three hours is tiring, and you've got to give all your energy [...] online. FI-2/C</i></p>

Confidence	<p>Good team chemistry as a source of confidence. Familiarity with the programme and approach. Sense of advanced competency within the team. Perceived credibility, competency of facilitators as enabler for beneficiaries. More 'visible' structure increases sense of programme credibility. Co-F confidence increased by clearer definition of roles Proficiency with digital technology as a source of confidence. Composition of facilitator team linked to beneficiary confidence.</p>	<p><i>I think something that really made it less daunting is that as [C] said, in the previous part, we've already worked together a lot. And I think having that chemistry going in and knowing certain people's strengths really helped. FI-2/A</i> <i>We have a template, it's a helpful device for it does, I think, it gives participants confidence that we know what we're doing. FI-1/E</i> <i>[O]ne of the enabling factors and what made the online delivery great is us [...] the fact that we had that extensive experience and ran the programmes so many times through so many different iterations before. We had the confidence to do it online. FI-2/C</i></p>
Trust & Rapport	<p>Concern – fostering energising atmosphere, creative energy. Concern – ability to build good working relationships in virtual delivery. Virtual space as a 'leveller' – removing some formality, sense of shared challenges in adapting. Empathy moments – technology issues, unpredictable occurrences. Intuition in virtual delivery – feeling trust and rapport developing. Limitation – loss of resolution in non-verbal cues, lacking non-verbal feedback.</p>	<p><i>For me the biggest one was how we would recreate that kind of atmosphere, [...] you know, creative energy and, like as facilitator, how we build a relationship and trust and rapport. FI-2/C</i> <i>The thing that was lost was the capacity to build real social capital amongst the participants. FI-1/E</i> <i>[Y]ou can feel when trust is established where people feel comfortable to have a joke or to poke fun or to start to kind of think creatively with you. FI-1/F</i> <i>I think just like anything in a digital format, we've all got cameras, but you can't pick up on nonverbal cues quite as well. FI-2/B</i></p>
Roles & Team Dynamics	<p>Facilitator roles more rigidly defined. Familiarity, understanding each members strengths, team chemistry. Division of roles - attending to interaction vs. attending to digital tools. Importance of CoF role as technology enabler (source of confidence). Multiple facilitators as mitigation against intensity.</p>	<p><i>[I]t wasn't to say that people that were note-takers can't ask questions or and vice versa, but they were definitely more inclined to either note-take or steer the conversation. FI-2/A</i> <i>[C]onfidence in our co-facilitators and their ability to draw and write at speed, and to pick out the best person was really important because I didn't want to have to think about drawing and writing. FI-1/E</i> <i>I definitely feel more confident in my digital skills and synthesising information [...] because I'm more comfortable in that I don't push myself to engage in the facilitation as much. FI-2/B</i></p>

Technology	<p>Digital technology creating different space within which to practice.</p> <p>Important for technology to be unobtrusive / not detracting from practice.</p> <p>Limitation – fluidity and 'naturalness' of interaction</p> <p>Unpredictability during sessions increased by technology.</p> <p>More defined roles necessary, supporting different aspects of virtual delivery.</p> <p>Increased clarity of recorded content.</p> <p>Technology enabling new aspects of practice (behind the scenes activity).</p> <p>Quality of digital tools as significant factor.</p>	<p><i>[A]s much as possible I want to be able to forget about the tool. And purely focus on engaging, very fully with the participant and what they're saying. FI-1/F</i></p> <p><i>[M]ultiple voices contributing simultaneously. And that just does not work in in a digital environment, because when I speak, I block your ability to speak, because that's how the technology works. FI-1/E</i></p> <p><i>I find it particularly helpful when a participant has mentioned something, [...] being able just to Google and look at it whilst we're still in conversation, it's still going on, but it doesn't feel discourteous. FI-1/E</i></p>
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## 6. Results – Synthesis of Themes

Several strong themes have emerged through analysis of the data, drawn from the facilitators' experience of designing and delivering co-creative workshops in the virtual setting. The themes describe qualitative *elements* that are present perhaps in both virtual and in-person settings. This inquiry locates these elements within the virtual setting, and data pertains to how facilitators perceive the effect of these elements on the dynamics of this setting. Inherent in all the elements is the rhetorical duality, where these elements may simultaneously help and hinder virtual workshop delivery. Each element is presented below, where these are not discrete and separate, but interrelated and 'woven' into the virtual setting. Descriptions include synthesis of the themes, to highlight qualitative nuances and articulate the interrelated nature of the elements (figure 3).

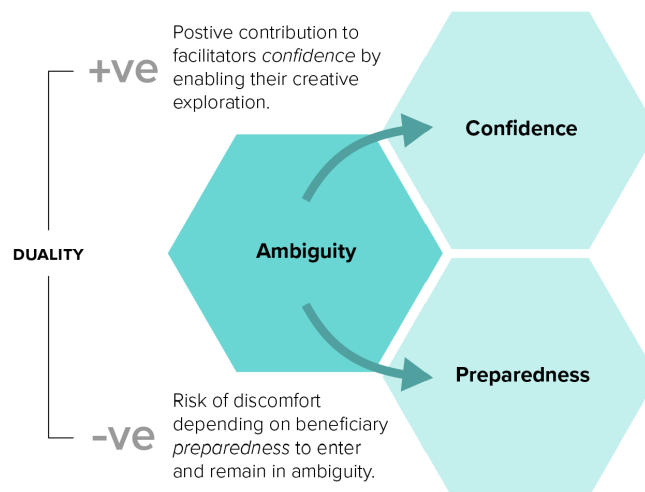


Figure 3 An apparent duality of ambiguity is that it can contribute to facilitators' confidence by enabling their creative exploration, but it also introduces the risk of discomfort depending on beneficiary preparedness to enter and remain in a state of ambiguity.

### *6.1. Structure*

In-person or virtual workshops may be explicitly designed to be more rigidly or more loosely structured. This can apply to many aspects, such as: roles played by each actor; interactions and discourse; recording and documentation; scheduling; the design and application of methods and tools etc. However, structure emerged as a strong element and was perceived both in terms of influences and conditions of the virtual setting. For example, an implicit structure is introduced as a consequence of the technology platforms used to stage the workshop; people tend not to interrupt each other, discussion tends to focus all actors on one thread at a time, and conversations become more sequenced. This phenomenon was not designed for, but rather appeared as a consequence of other elements in the virtual setting.

Increased rigidity of structure is perceived to be beneficial when it engenders confidence. This was reported by Co-Fs in positively influencing how well-prepared they felt for the virtual workshops, and in making it easier to use digital tools to annotate and map the session, in-turn improving the quality of the documentation captured. Beneficiaries indicated that the apparent structure gave a sense of time-effectiveness, but also built confidence in the process. Conversely, a loose structure is essential in allowing experienced facilitators to be flexible and adaptive in how they moderate the inquiry. It allowed LFs to respond to how comfortable the beneficiary appeared to be in the virtual setting (adding extra breaks, allowing extra time for familiarisation with the technology).

### *6.2. Ambiguity*

Lead facilitators discussed the benefits of maintaining ambiguity in both in-person and virtual workshops, allowing space for ideation, free-form exploration, and creation of new frames through which to view the situation. They felt that being over-prepared risked introducing pre-conceptions that they would later have to break out of, and favoured ambiguity as an enabler for “bringing freshness” and working dynamically. In contrast, facilitators recognise that for the participant, ambiguity can cause uncertainty, confusion and can be uncomfortable. This was a source of concern, particularly as it is hard to sense how prepared beneficiaries are to enter a state of ambiguity, and for how long they are prepared to remain in that state. Facilitators described how reduced non-verbal cues in the virtual setting amplified this concern, where this discomfort may lead to risk of the participant disengaging.

### *6.3. Preparedness*

Analysis suggested that between structure and ambiguity, there are varying degrees of preparedness for both beneficiaries and facilitators. For facilitators, this element is directly related to the adaptation of the workshops for virtual delivery. For beneficiaries, it is perceived to be related to how expectations about the workshop programme were managed during recruitment. Co-Fs identified preparedness as an enabler in the virtual setting. From their

perspective, attention to the following was significantly important in respect of virtual workshops: familiarity with the programme; carefully adapted digital versions of templates, tools and prompts; competency in operating the technology.

Where the workshops comprise one or two beneficiaries, there was concern about how prepared beneficiaries are to tolerate the ambiguity and uncertainty that is inherent in designed inquiry. LFs perceived that participant preparedness is likely to have a direct influence on this tolerance, and therefore how ambitious the creation of new frames can be. However, LFs felt that quite the opposite applied in their own practice, where preparation could result in fixation and create preconceptions whereas carefully balanced 'unpreparedness' was felt to bring "freshness" and help LFs to work in a "completely dynamic way".

#### *6.4. Intensity*

The intensity of workshops is perceived to be affected by the virtual setting. Beneficiaries reported that intensity makes the workshops feel highly productive, focused and dedicated. The majority felt the workshops used their time "efficiently". Some negative implications were reported by facilitators, who felt that they are "always on" during virtual workshops. During virtual workshops facilitators often relied on sensing when a break was required, rather than sticking to a rigid schedule. This sensitivity was not only towards the beneficiaries but other facilitators also. To compensate for there being fewer "materials of the situation" in the virtual setting than in-person, facilitators feel they have to work harder to ensure they can maintain a high quality of collaborative reflective practice. LFs described how in the virtual setting, the screen becomes the entire stage for interaction, which is small, two dimensional and rigidly constrained. Whereas in-person, the stage would be a physical, material and three dimensional setting that forms a much richer, 'natural' environment, supporting movement, non-verbal communication, a full spectrum of senses, and so on.

#### *6.5. Confidence*

For all actors, confidence emerges as a particularly dynamic and relational element in the virtual workshop setting. Interestingly, some aspects of the conditions for confidence between LFs and Co-Fs were quite polarised. Overall, all facilitators referred to their experience, expertise, familiarity with the workshop approach, and team "chemistry" in giving them confidence. However, enablers for confidence in LFs were related to a looser structure allowing adaptability and flexibility, and having sufficient ambiguity to work dynamically, without preconceptions. For junior Co-Fs, increased structure was a source of confidence, particularly in terms of having more defined roles within the workshop. Technology was a source of concern for LFs but they drew confidence from knowing they could defer to the skills of Co-Fs in operating the digital tools, so they could focus on the verbal aspects of the workshop. Similarly, this dynamic created confidence for Co-Fs, who clearly recognised the value of their skills in the virtual setting. A source of confidence for workshop beneficiaries was their perception of the workshop structure. Beneficiaries were reassured by the digital

whiteboard templates and felt they were being guided through a well-structured journey. Trust was also a strong source of confidence for beneficiaries, as described below.

### 6.6. *Trust and Rapport*

During the design phase of the virtual workshops, facilitators felt some concern about how the virtual setting may negatively impact the building of trust and rapport with beneficiaries. However, beneficiaries reported favourably in relation to trust, feeling that the workshops offered a platform to be vulnerable and honest, where facilitators show empathy, take a neutral stance, and have “no vested interests”.

The duality stems from how technology and digital tools in the virtual setting simultaneously enable the workshops to take place, but are perceived by facilitators to impose constraints on softer inter-personal skills that may be more fluidly practiced in-person. There was uncertainty around the more explicit structure of virtual workshops, along with the increased formality that video conferencing platforms can impose on dialogue, as diminishing opportunities for incidental or tangential conversations, and ‘small talk’. Such incidental or sometimes ‘off topic’ conversations are felt to be instrumental in how facilitators can be personable and positively relate to beneficiaries. Conversely, there are times when friction caused by technology provided an opportunity for facilitators and beneficiaries to share empathy, and was felt to help build rapport.

### 6.7. *Roles & Team Dynamics*

One facilitator suggested that “what makes it successful is us”, LFs and Co-Fs share a convivial, positive working relationship outside of workshops. They are familiar to each other and form a community of practice within the School of Design. This level of understanding, maturity and team ‘chemistry’ was perceived to allow facilitators to be adaptive to each other's style and strengths, to work productively together. In adapting to the virtual setting, facilitator roles have become more rigidly defined. Co-Fs see this as positive, suggesting that this gives them more confidence by focusing their responsibilities towards their strongest skills. The down-side is that these rigidly defined roles have almost entirely over-ridden the benefits that more *novice facilitators* had created during in-person delivery of the same workshop programme (Lampitt Adey et al., 2019, p. 6). Also of concern, rigid roles provide little impetus for less experienced Co-Fs to step out of their comfort zones, thus perhaps impeding opportunities for professional growth.

### 6.8. *Technology*

Devices, software, digital tools and the internet fundamentally enable virtual workshops. Aside from being the very platform upon which the workshops could take place, other benefits were highlighted. Technology was perceived to avoid the formality associated with attending an event in an institutional environment. Instead, actors can attend remotely from the familiar and comfortable surroundings of their home or office. Also, behind-the-scenes searching the internet, viewing web pages, taking screenshots, and information gathering



was felt to be acceptable in terms of etiquette in the virtual setting, and can be done without removing oneself from the conversation. The same was not seen to be as feasible or as appropriate in-person.

Facilitators perceived that conversations happen differently in virtual workshops, where technology imposes an implicit structure: people are “more polite”, and tend not to talk over each other. This makes it easier for Co-Fs to document and map the sessions. It was also seen to force the focus of discussion onto one thread at a time, which was felt by LFs to make discourse less dynamic and more intense. Beyond the core function of mapping the sessions, the digital whiteboard tool offered continuity between sessions for facilitators and beneficiaries, allowing actors to revisit the discussion at any time. However, the majority of beneficiaries chose not to interact with the digital whiteboard during the sessions.

Poor connectivity, struggling to share a screen, interruption by background noise, or forgetting to un-mute the microphone, were encountered as negative implications of technology. But, in polarity, these instances of friction also permitted empathy between actors, and even shared humorous moments, and were perceived to enable relationship-building. A concern was that technology gives people more opportunity to disengage, to turn the camera off or stay muted. In practice, this was rarely encountered, although it was occasionally apparent that beneficiaries were distracted by technology, such as emails and notifications.

## **7. Findings: Propositional Model – Three Degrees of Influence**

The elements that have emerged as themes are those which are perceptible to expert design facilitators, while engaging in focused co-reflection on their experiences delivering virtual co-creative workshops. By articulating these elements through reflective practice, they are made explicit and thus become objects of reflection, from which to build new understanding and stimulate further development of practice related to virtual co-creative activities. This paper suggests that practitioners reflect on two main aspects of practice when working in virtual settings:

- Preparing for the more predictable elements that are within the influence of designing and facilitating.
- Becoming sensitised to those elements that are beyond direct influence and instead need to be sensed and responded to in practice.

As a propositional model for organising these elements as objects of reflection, three degrees of influence are speculatively proposed for further consideration: *stage, setting, environment* (figure 4).

**Stage** - the aspects of the situation that practitioners are able to control directly in order to deliberately influence those elements that are more predictable. A stronger comprehension of such elements ensures they can be attended to deliberately through improvement and expansion of methods, tools, techniques, and routines.

**Setting** - where elements are configured according to the particularities of digitally mediated virtual space, which in-turn shapes practice within this context. Focused reflection-on-action can draw out elements that are perceptible, their relational intertwining, and how they are influenced by the *stage*, so that they can adroitly be attended to.

**Environment** - the overall situation for participatory and co-creative design practice that is complex and emerging. Where elements are unpredictable contingent phenomena in performative flows involving all actors, and that are dynamically negotiated *in-the-moment* during practice.

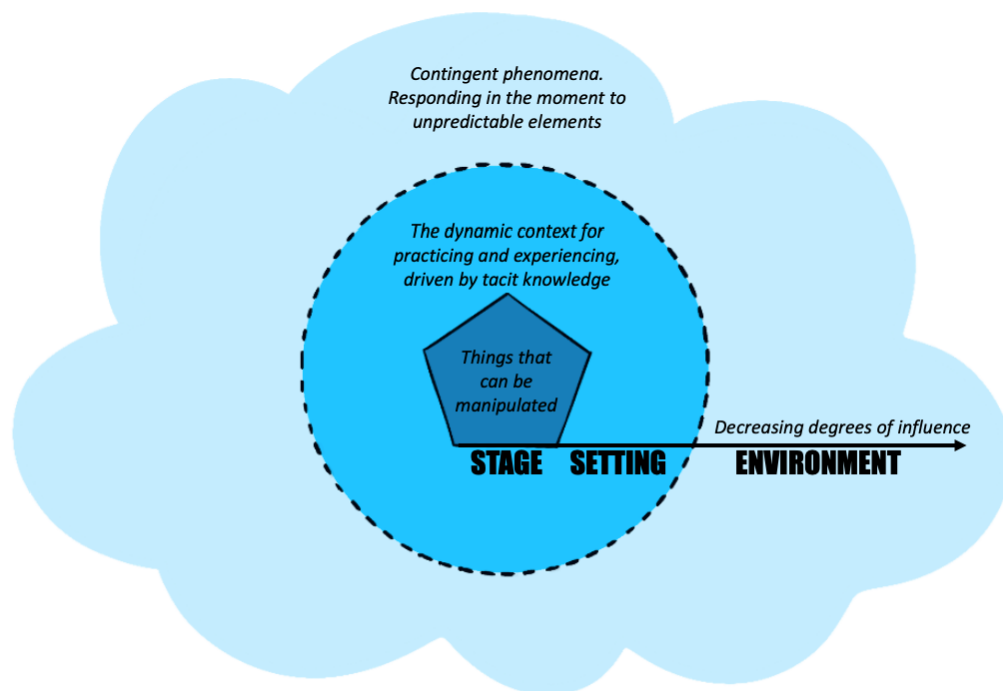


Figure 4 Three degrees of influence that practitioners are found to have on virtual collaborative activities, proposed as a conceptual tool for reflection.

## 8. Discussion

The elements presented above are not suggested to be discreet, nor existing as separate entities and addressed as such. Rather they are considered to be an intertwined complex of influences, where duality refers to how each element may have both positive and negative effects on the dynamics of virtual workshops. Whilst these elements very likely do exist in physical in-person workshops, this paper is interested in how their effects manifest in the dynamics of virtual workshops.

Of the recent contributions reviewed above, much of the discourse relates to how practitioners set the *stage* for virtual workshops. For example, the structure element is suggested

to enable virtual workshops (Thorwid, 2020, p. 18), and to compensate for how technology element can negatively influence the setting (Kent et al., 2020, p. 661), constraining interaction to within the bounds of a screen. Here, structure is an explicitly planned component of preparing the *stage*, but structure can also emerge through the workshop *setting* as a consequence of how the technology element implicitly shapes interaction between actors. With experience, this phenomenon can be predicted and addressed deliberately in preparing the *stage*, such as using software features to positively influence how open discussion is facilitated (Zimmermann et al., 2021, p. 5). But the expertise of the facilitator remains crucial in moderating a balance between lively debate and ensuring all voices can be heard, where facilitators are responding to the complex dynamics of the *setting*.

The *stage* comprises things that facilitators can directly manipulate to deliberately influence certain elements in the workshop. There is similarity to the concept of *frontstage* and *backstage* (Bødker et al., 2017; Hayes et al., 2021), the former referring to what happens within a participatory activity, and the latter about work before, between and after such activities. However, this terminology has an established meaning in respect of participatory design infrastructuring that goes beyond the intention of the reflective tool proposed. *Stage* is chosen as a more general term to encompass that which can be predicted and prepared for. The *setting* is how the stage and the *environment* combine to create a dynamic flow of influences within the workshop. The technology element is significantly influential as the medium for virtual interaction and thus shapes the *setting*. Hence this is ephemeral, influenced by the particularities of the situation, actors, predictable and unpredictable elements. The *environment* surrounds everything as a mass of unpredictable elements that are expressions of intertwined, performative flows that are continuously emerging (Rylander Eklund & Simpson, 2020, p. 12). The *environment* is where there is the least degree of influence and the most unpredictability, its effects are felt in how facilitators may be confronted by new or unexpected phenomena during collaborative activities.

A meta-educational perspective has been recommended as a way to develop research into – and “enable iterative meta-learning” on – virtual collaboration (Mennig & Tamanini, 2021, p. 138). However, this inquiry proposes that such iterative development be approached from a practice-orientation that shifts the focus of inquiry from specific roles, methods, tools, and routines and towards a more nuanced and qualitative understanding of what is happening *during* such collaborative activities. The framing of *setting* is a ground for practice as a “set of contingent, embodied routines” (Kimbell, 2012, p. 141), where facilitators are supported by those aspects that can be prepared, rehearsed, and predicted. Conversely, the *environment* of unpredictable and difficult to influence elements must be negotiated through practice, and offers a rich ground for articulating tacit and embodied knowledge, made discursive through focused reflection-on-action.

## 9. Concluding Remarks

Design facilitation experts have reflected on the experience of designing, implementing and delivering co-creative workshops in the virtual setting. They have identified several influential elements, interpreted as dynamic and interrelated influences which are 'woven' into the virtual setting. This paper positions these elements as objects for critical reflection within a conceptual model of three expanding degrees of influence; *stage*, *setting*, *environment*.

The position taken here is that experienced facilitators rely on *knowing-in-action* (Schön, 1983) during practice, where this involves thinking, sensing, acting, relating (Strauss & Pais, 2014, p. 24) and negotiating continuously unfolding performative flows. Preparing the *stage* involves designing tangible and intangible structure, through artefacts, prompts and routines that are scaffolding to work flexibly around, rather than an attempt to mitigate against the unpredictable, or impose control. The *setting* forms the context of virtual collaboration and is necessarily shaped by the influence of technology, but also by components of the *stage* and by unpredictable elements in the *environment*.

As participatory and co-creative practice continues to be enacted in virtual settings, and also integrated into hybrid modes of delivery, focused reflection to articulate tacit knowledge is essential to the development of practice in this area. Particularly in respect of how rapidly new and more powerful digital collaboration tools and technologies are becoming available. It is important for practitioners of participatory and co-creative design to enter into a reflective dialogue with the experiences of working across digital collaboration tools and technologies, to articulate tacit and embodied knowledge and develop new understandings for the future of practice in virtual settings.

Negotiation of such complex elements, found to have simultaneously positive and negative influences on virtual workshops, through a situated and performative process, is suggestive of a certain *chemistry* apparent in practice. Further inquiry is encouraged in order to understand how this chemistry is created; how can the balance of duality in each element be tipped in favour of positivity, to ensure that virtual activities are successful; how can practitioners detect and monitor this chemistry, and; to what extent is embodied knowledge dis-embodied by technology, or embodied differently within the virtual setting?

**Acknowledgements:** This paper reports on a study conducted within the wider Creative Fuse North East 2.0 (CFNE2) research project, which is funded by the European Economic Regional Development Fund (ERDF) and the UK Arts and Humanities Research Council (AHRC). The authors would like to express their gratitude towards all those from enterprises and organisations in the UK's North East region that have generously collaborated in the workshop programmes.

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- B.5. Spencer, N., Simmons, H., Bailey, M., Hemstock, O. & Carrion-Weiss, J. (2022) Innovation Constellations as a systems approach to social design infra-structuring. *23rd DMI: Academic Design Management Conference*. Design Management as a Strategic Asset, Toronto, Canada, 3-4 August, 2022.

23rd DMI: Academic Design Management Conference  
Design Management as a Strategic Asset  
Toronto, Canada, 3-4 August, 2022



## Innovation Constellations as a systems approach to social design infra-structuring

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*There are constant calls for innovation related to complex social challenges. This includes calls to innovate within government and public organisational structures but expands to include unsustainable relationships and behaviours in public life. Design is often positioned as a capability that can offer new approaches and develop novel interventions with the design project as a key mechanism. Through a case study focused on an Innovation Constellation a discussion is developed about an emerging sociomaterial design infra-structuring system. The case study presents a complex system of designing that highlights political infra-structuring as significant in supporting a diverse group to bridge the gap between social justice rhetoric and practical action to intervene and influence existing social circumstances.*

**Keywords:** Innovation Constellations; Social Design; Public Good; Infra-structuring

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## Introduction

Many national agendas and the United Nations' Sustainable Development Goals point to the need for innovation and sustainable practices in health, social care and education. Additionally, there are increasing calls for greater understanding about, and application of, design in policy-making, public sector and other complex contexts to support social innovation and sustainable practices (Thorpe, 2019; Malpass & Salinas, 2020 & Whicher, 2020) This research sits within the broad design research landscape related to Social Design (Resnick, 2019) and aligns to specific discourses about Design Things (Ehn, 2008 & Binder et al., 2011) and infrastructuring (Selloni, 2017; Dantec and DiSalvo, 2013; & Spencer & Bailey, 2020). As such, this paper contributes to the discourse about Design for the Public Good.

This paper reports on initial findings from the first two years of collaborative working between a team of multidisciplinary design researchers and a set of organisations that span health, social care and criminal justice. The collaboration responded to the question, "what theories, principles and practices might be influential in designing a social justice constellation and how might they be employed?" To this question an approach based on infrastructuring theory has been applied to enable a set of organisations to engage in design practices to explore how they might re-conceptualise the resources and expertise of their organisations and the communities they work with to offer a fundamentally better and fairer system for health and care. This paper presents a case study that charts the creative practices and outcomes as the group attempted to sense-make their roles, responsibilities, agency, and potential. Focused on participants and their interactions, activities and initiatives a thematic analysis is used to develop a conceptualisation of an Innovation Constellation.

There are very few empirical studies of infrastructuring across organisations and this research is significant in addressing that gap. It highlights the importance of sociomaterial environments that support a heterogeneous group to share in new ways to develop a political discourse about which 'objects of design' should be engaged with. This understanding is of potential value and interest to those engaging in design for public good research and practice.

## Literature Review

Calls for social innovation, innovation in the public sector and innovative public goods are not new. Murray, Caulier-Grice and Mulgan (2010) claimed that social innovation was critical for addressing social problems. According to those authors, raising costs of delivery make current models and practices unsustainable; the classic tools of government and market solutions have proven inadequate for addressing social challenges; and existing structures and institutions maintain control and resist innovation as opposed to nurturing it. Tucker (2014) furthered the discussion in the assessment that; distributed systems are required where innovation and initiatives are developed 'with' and 'by' users and dispersed to the periphery and connected by networks. More recently the OECD (2020) cautioned that in the current context of unprecedented volatility, uncertainty, complexity and ambiguity a more sophisticated systematic approach to social challenges and sustainable development is needed. Has design knowledge and practice matured sufficiently to offer perspectives about and practice to support a 'more sophisticated systemic approach' to effectively engage with and transform complex sociomaterial and sociotechnical situations?

There are significant discourses relating to the conceptualisation and performance of design in these types of complex contexts. In this paper it is not possible to sufficiently review them all. However, there is knowledge related to social design (Resnick, 2019) and transition design (Irwin, 2019) that will be presented to support this paper's case study report. According to Armstrong, Bailey, Julier and Kimbell (2014), social design uses 'participatory approaches to

for professional design. Malpass and Salinas (2020) in the AHRC Challenges of the Future: Public Services report highlighted design's ability to assemble publics constituted of diverse stakeholders to address public service challenges. This infrastructuring, that assembles publics and transfers knowhow, broadens the view of what might be considered innovation as a process of 'aligning the interests of a range of stakeholders through a design research process' or as Ehn (2008) may urge us to consider, infrastructuring to constructively deal with disagreements and mis-alignments. Malpass and Salinas, through their review identified three types of infrastructuring activities that emerge from work undertaken in the design for public services field:

1. Relational infrastructuring - these are activities that create shared trust and value aimed at building relationships between the range of actors within a project.
2. Operational infrastructuring - these are activities that develop and build capacity and where participation within the process develops knowledge and resources within the actor network.
3. Strategic infrastructuring - these are practices of participation that break institutional silos, align agendas and create space for future innovation resulting from interactions in the design process.

These forms of infrastructuring when considered within a sociomaterial perspective that acknowledges both human and non-human participants (Bruno Latour's work and Actor-Network Theory is often cited in design research in this context) may support the Social Design principle: builds new forms of democratic relations between places, living beings and things. While these forms of infrastructuring are recognised, there is, however, little understanding about them as sustainable social supports.

Irwin (2019, pp., 149-181) suggest that there are particular perspectives and approaches involved as design is applied to contribute to systems-level change in our societies to effect a transition from one kind of society to another. Transition Design or "design for transition" brings together two powerful memes: the idea that entire societies will need to transition toward sustainable futures and the realisation that this will involve systems-level change informed by a deep understanding of the anatomy and dynamics of complex systems. The transition design framework outlines four mutually reinforcing and co-evolving areas of knowledge, action, and self-reflection:

1. The important role that long-term visioning plays in societal transitions
2. The role of Transition Design in building social capacity and establishing a new social infrastructure
3. Ecological literacy as the basis for a Transition Design approach
4. A framework or "palette of practices" that can be configured in situation- and place-specific ways & the cultivation of system leadership.

Two mechanisms act in a Transition Design approach - the transition design process and the transition pathway. Set to resolve a wicked problem or shift a sociotechnical system the transition design process of 're-frame the present and future', 'designing interventions', and 'waiting and observing' is iterative and extended over years or even decades. The transition pathway co-creates long-term visions, based on re-framing practices, as a "compass" from which medium-term visions are backcast acting as targets and goals for ecologies of projects that are the transition steps. Irwin (2019, pp. 172-173) presents two strategies for Transition Design: firstly, linking projects and interventions to create ecologies of interventions to seed systems level change, and secondly, amplifying grassroots efforts as sensitive and responsive to emergent

solutions. This second strategy relates to Manzini's argument (2015) that an important role for professional designers is to recognise where communities have achieved alternative more sustainable social relationships and to develop the means to transform these social innovations other contexts. 'Waiting and observing' is extremely important and a key differentiator in the approach. According to Irwin (2019), designing solutions is an error of conceptualisation. The responses of a system cannot be predicted therefore transition designers have a practice of 'solutioning' and this requires periods of activity and intervention and periods of observation and reflection.

What forms of issue-publics and sociomaterial environments support the characteristics required by a transition design approach? This paper's case study begins to address this question by presenting an infrastructuring system across organisations that attempts to develop and support a new locally rooted design-led innovation capability to enhance social justice.

## **Methodology**

This work adopts a methodology consistent with the principles and practices of an instrumental single-case study (Stake, 1995; Flyvbjerg, 2013). It focuses on participant interactions, activities and initiatives within a particular set of circumstances and conditions to understand the complexity of a sociomaterial design environment as it unfolded over time. The case study does not assess the effectiveness of facilitated or co-creative events. The case study is based on data gathered over the period Sept 2020-April 2022 and examines the unfolding and still-in-progress attempt to develop a new locally rooted design-led innovation capability to enhance social justice. The data materials used in this research include documented events, gatherings and meetings, digital and physical workshop materials, participant reflective commentaries, funding bids, emails, researcher notebooks. The case study report is presented through three parts: *Overview*, *Beginnings* and *Continuing*.

The *Overview* section gives details of the intent that initiated this investigation; the participants and organisations that have engaged, continued or left; the projects and activities undertaken; and the infrastructuring that has developed. The *Beginnings* section covers a period from June 2021-October 2021 and focuses on the initial period of participation and reflection. The group came together to explore and express the possibilities for innovation and supporting social justice and this section of the case study describes the sociomaterial environment; its participants and their interactions as facilitated talks, workshop activities and discussions. The *Continuing* section covers October 2021-April 2022 and reports on the developing and emergent infrastructuring as experimentation, events, initiatives, and informal meet-ups. The case study report is then discussed to produce a conceptualisation of an Innovation Constellation which is argued to be a systems level sociomaterial approach for social design infrastructuring.

There are 4 researchers who have contributed to the analysis and production of this case study each has a different relationship to the Innovation Constellation. This has allowed rich descriptions of the case to be developed. However, the authors are very aware that there are many different standpoints and participant perspectives that are not included within this case study, which is an inherent limitation and focus for further study. The relationships that the authors have with the situation the case study reports on are:

- Associate Professor of Design Innovation: initiator and university lead for the constellation
- Senior Research Associate (Oct 2021-present) & member of Master's cohort 20/21: involved continuously since June 2021 and originator of the supporting hyper-local constellation
- Senior Research Fellow: observer at constellation events June 21-April 22

- Associate Professor of Design Innovation: involved in the constellation by coaching Masters student cohorts as they engaged. No participation in constellation events
- Doctoral Researcher in Design Innovation: no involvement with constellation events or initiatives.

## Case Study: An Innovation Constellation

### OVERVIEW

Investigating new forms of locally rooted design-led innovation capability to enhance social justice in the development and delivery of public goods helps to bound this case. That focus has been developed over the course of the last decade. During this period a team of researchers has investigated responsive-responsible design innovation in multidisciplinary contexts with over 75 regional, national and international organisations across various sectors. This research engages with the complexities of transition; the conflicting views and influence of different people and organisations and their collective roles in realising fairer, responsible and more rewarding futures. Through a practice-based approach their research explores how capabilities can be developed that initiate desirable transitions and help non-design experts to continue an appropriate design practice within their professional or community setting. Some of the practice and knowledge that supports this inquiry developed by the research team relates to transforming wicked problems into design situations (Bailey et al., 2019), leveraging slow design practice in commercial contexts (Hemstock & Spencer, 2019), social value creation through multidisciplinary design education (Kyffin, Aftab & Spencer, 2019), navigating ‘matters of concern’ (Spencer & Bailey, 2020), and design facilitation practices (Carrion-Weiss, Bailey & Spencer, 2021). To extend this knowledge, contribute to the research field and act meaningfully in our region, the research team sought to develop understanding about prototyping social design orientated sociomaterial environments. Specifically, the research hoped to better understand the influencing conditions for political and practical discourses about innovation and social justice and the influence that design knowledge, practices and acts exert on existing and new social dynamics. The first step taken in this long-term inquiry was to establish a collection of leaders from across a range of different organisations concerned with social justice and innovation and to facilitate a productive dialogue through design innovation practices.

Pragmatism was applied to form a working set of organisations based on active relationships. All the organisations were delivering services that can be understood as a public good and are interested in innovation (how they operate and how they might better recognise and meet need). Table 3. presents all of the organisations and actors directly engaged. Organisations A-J are original members and K-O associated members through involvement in a hyper-local design for social justice project “Difficult Transitions”. The initial invitation was to join a constellation of organisations to learn from each other and to explore meaningful collaboration opportunities through 6 x 2-hour facilitated online sessions (across a 3-month period).

Representatives from these organisations (whom from here on in will be referred to as ‘actors’), following a video call to discuss collaboration opportunities, were invited via email to join the constellation as a community of ‘experts’ with different perspectives on supporting marginalised or vulnerable people to learn from each other and identify integrated innovation opportunities. The intent was that this community would form a different kind of issue-publics, engaging in a broader discourse than is possible when focussed on a single set of stakeholders or sectoral issues. By coming together in a supportive and facilitated manner the intention was to:

- a) Act as a critical peer group to discuss challenges associated with leading innovation and positive change.

- b) Explore integrated innovation opportunities to address social injustices recognised in their individual contexts.
- c) Explore how the University can become more accessible, a better collaborator when exploring themes of social justice and more effective contributor to social innovation.

To develop and stimulate the work conducted by and through this initial Innovation Constellation a team of 6 Multidisciplinary Innovation Masters students (MDI) joined the constellation. For these students this work was the focus of their dissertation project which responded to the challenge: ‘what results when a collection of organisations are stimulated with design thinking that responds to the dynamics of individual needs, organisational constraints, changing conditions and persistent challenges’ and ‘what platforms, tools and activities most effectively support an Innovation Constellation to collaborate effectively?’

Table 3 *Innovation Constellation Organisations and Actors.*

Code	Type of organisation	Network Actors	Notes
A	Large civic university	A1 Associate Professor of Design Innovation (P-A) A2 Senior Lecturer, Criminology and Criminal Justice A3 Senior Lecturer, Multidisciplinary Innovation A4 Senior Research Assistant (P-A) A5 Masters Students 20/21 (#6) A6 Masters Students 20/22 (#8) A7 Associate Professor of Design Innovation (P-A) A8 Senior Lecturer, Entrepreneurship A9 Senior Research Fellow (P-A) (P-A = Participant-Author)	A1 Convened the constellation and took a lead role in hosting the sessions. A2 made valuable introductions to Actors who joined the constellation, but beyond this didn't engage in sessions. A3, A7, and A8 supported the Masters students (A5 and A6) during the Social Justice projects, but didn't attend many sessions with the constellation. A4 was part of the A5 student group and continued to engage with constellation activities in their research position after graduating. A5 students worked with Organisation G on a short project in their first semester and then with the constellation on a 2 month dissertation project. A6 students were supported by Organisations B, E, F, G and H during their semester 1 Difficult Transitions project and K-O during their hyper-local semester 2 Difficult Transitions project. A8 supported students A5 and A6 as tutor during their projects and A9 observed some constellation events.
B	Large regional prisons group	B1 Group Director B1.1 New Group Director B2 Covid Recovery and Diversity and Inclusion	Referred (via A2). Never collaborated with designers to support their reform agenda. Covid restrictions evidenced valuable creative responses to prison organisation that enhanced prisoners' outcomes. Interested to explore how to better embed innovation strategically and be part of a broader discussion about social justice.
C	Regional Police Force	C1 Problem Solving Partnerships Manager	Referred (via A2). Interested in innovative approaches to crime prevention that might emerge from combining different perspectives. Currently, the SARA (REF) model is used as a primary principle for problem solving.
D	Police, Crime and Victims' Commissioner's Office	D1 Policy Commissioning and Accountability Lead	Referred (via A2). Believe most innovation opportunities reside in the 'crime' rather than 'policing' space. They are very familiar with complicated partnerships working to deliver all aspects of criminal justice. They are responsible for the Force's commissioning and policy development.
E	National Health Service (NHS) Foundation Trust	E1 Trust Lead for Strategy and Sustainability E2 Director of Research and Innovation	Referred (via A2). Greatest experience relates to innovation in clinical healthcare. Interested to explore ideas for integrated social and health care in the context of community

			transformations. E2 had prior experience of academic research and collaboration.
F	Regional Mental Health Charity & Local investment partnership supporting social enterprises	F1 Chief Executive Officer (for both organisations)	Towards the completion of their PhD, referred (via A1) as part of an ongoing dialogue about structurally embedding Design Thinking within their organisations as a capability to probe and foreground discussions about long-term inequalities in a specific local area.
G	Large Charity supporting elderly religious communities, people who have been victims of modern-day slavery, who are homeless or with physical and mental disabilities (National)	G1 Chief Executive Officer G2 Director of Opportunities G3 Service Designer	Referred (via A1), contacted the university interested in collaborating on a design-led innovation student project exploring how to enhance their existing services for people who are homeless or subject to modern day slavery. G2 had previously worked in academia. Interested in applying design thinking to support their strategy related to becoming an entrepreneurial charity.
H	Community Consultant	H1 Independent Community consultant	Referred (via F1) working closely with the Local investment partnership supporting social enterprises (F) and already working to develop cross-sector partnership working to address social and health challenges in a specific local area.
I	Large Regional Housing Association	I1 Service Designer I2 Design Researcher	Referred (via A1), I1 is an alumnus of the Multidisciplinary Innovation Masters course.
J	Large Regional Housing Association	J1 Innovation Manager	Referred (via I1). New in this role. Previous experience of service design within a mental health charity.
K	Regional charity supporting people who are refugees or are homeless	K1 Wellbeing Programme Coordinator K2 Hostel Manager	Referred (via A4), K1 has an architectural design background and was already using design-led approaches to co-creating activities for their service users.
L	Local social enterprise	L1 Founding Director	Referred (via A4), already a very entrepreneurial organisation keen to collaborate with the university having had several successful academic collaborations in the past.
M	Community Café	M1 Head Volunteer M2 Volunteer	Referred (via A6)
O	Other organisations	Various Roles	Other organisations who contributed or engaged with Innovation Constellation activities on a temporary or short-term basis.

**FOUNDATIONS (JUNE-OCTOBER 2021)**

Six 2-hour online sessions shaped the constellation’s initial engagements; MS Teams was used to host the group video calls and Miro was used as a concurrent digital working space. Across this period the MDI students worked full time on the project supported by 4 experienced academic coaches. The invitation was clear that attendance was voluntary and that giving apologies or leaving the constellation part way through was perfectly fine. The following sessions helped to meet the constellation invitation’s objectives:

June 4th 2021. Attendance: (A1, A2, A5, A9) (B1, B2) (C1) (D1) (E1, E2) (F1) (G1, G2) (H1) (I1). All participants introduced themselves with descriptions of innovation in their professional context and their reason for joining the constellation. A talk was given to position *design in the expanded field* (Dorst, 2015), the constellation as a sociomaterial *Design Thing* (Binder et al., 2011), and innovation projects within and across constellation organisations as a means to explore the tensions and controversies encountered when attempting to implement social justice oriented change (Spencer & Bailey, 2020).

June 18th 2021. Attendance: (A1, A2, A5, A9) (B2) (C1) (D1) (E1) (F1) (G1, G2) (H1) (I1) (J1). Following a series of well-being exercises the group worked collectively mapping out the core needs of different groups that each organisation aimed to meet. Planned as conversation starters, and adapting determinants of health and pathways to reduce re-offending models, the mapping sought to spark discussion about commonality and difference, challenges and inequalities. Interaction was transactional with participants each contributing in-turn. Dialogue across members was challenging to encourage with the session’s open-ended structure.

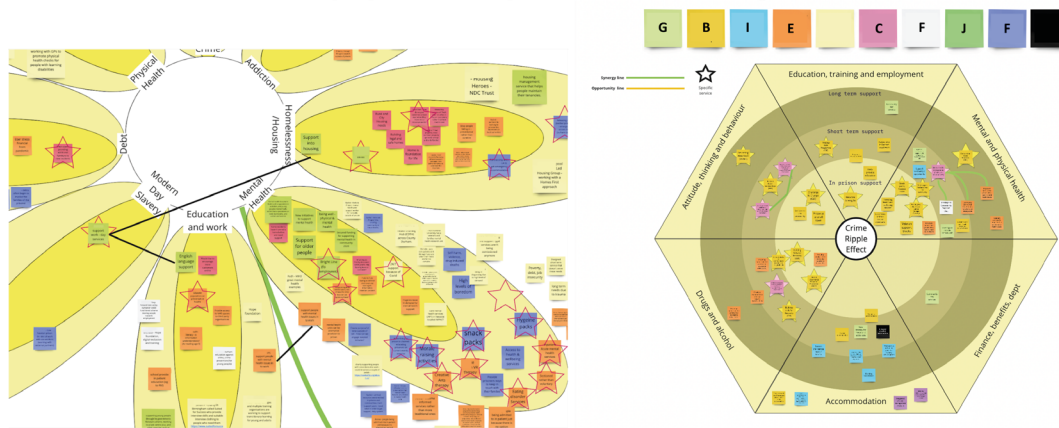


Figure 1 Materials developed during June 18th Constellation Session

July 2nd 2021. Attendance: (A1, A2, A5, A9) (B2) (D1) (E1) (F1) (G1) (H1) (I1, I2). This third session aimed to co-develop visions for the future and discuss the type of structures, policies, ideas and behaviours that makes them difficult to achieve. The following three questions previously developed were considered in the context of the ideas emerging in the session: why is distress experienced as a result of navigating current support services; what roles within an innovation process could be formalised for people with lived experience of these services; how do invisible systems of care in communities interact with or respond to formal care systems? Frustrations were raised because ‘seeing’ what actions were needed to move towards these fairer futures was not obvious. This afforded a discussion about the actions and initiatives that can be made now as an individual or through their organisations.



Figure 2 Materials developed during July 2nd Constellation Session

July 16th 2021. Attendance: (A1, A2, A5, A9) (B1, B2) (C1) (D1) (E1, E2) (F1) (G1, G2, G3) (H1) (I1). A presentation about models and methods to develop and prototype ideas setup co-creative speculation. An ideation model was used to encourage participants to put forward ideas for how our themes of interest might be actioned and what could exist or might need to exist to support this.

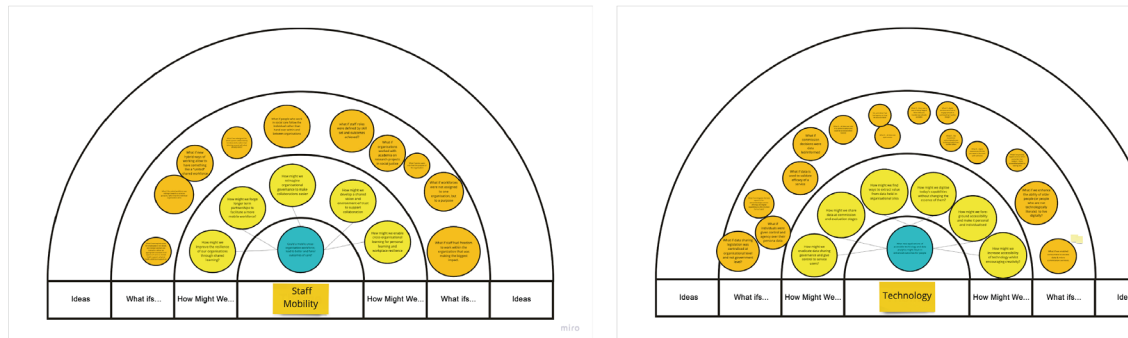


Figure 3 Examples of speculatively probing fairer futures, via emerging themes July 5th 2021

July 30th 2021. Attendance: (A1, A2, A5, A9) (B1, B2) (D1) (E1, E2) (F1) (G1, G2, G3) (H1) (I1, I2) Marking the end of the MDI students' involvement this session was a reflective discussion about their findings and the experience of participation. Each member had the opportunity to state what had worked and resonated with them and what had not.

September 10th 2021. Attendance: (A1, A2, A5, A9) (B1, B2) (D1) (E1, E2) (F1) (G1, G2, G3) (H1) (I1) Reflections and actions - reviewing the value and mechanisms supporting the Innovation Constellation and discussing opportunities that emerged through previous sessions and how we might progress them.

Following this group session A1 held separate video calls with each organisation to talk about future engagements with the constellation. These discussions led to the development of the Innovation Constellation Framework and a new phase continuing the infrastructuring. Outside of the planned constellation sessions, in June 2021, two of the MDI students joined Organisation I in the role of creative practitioners at one of their staff-based innovation challenge workshops. This was a good illustration of sharing human resource and talent across constellation members (even if a very limited one). In July 2021 Organisation G led and submitted to the National Lottery Community Fund - Growing Great Ideas. The bid, which was ultimately unsuccessful,



focused on experimenting with accessible technologies to meet unmet needs of people with learning disabilities. Establishing a set of interconnected innovation constellations was a central mechanism in the proposal for developing and prototyping ideas, learning from that material to understand how current inequalities were being maintained and to challenge and act on that to create fairer and fitter social care systems. Together this system was positioned to be a community of change.

**CONTINUING (OCTOBER 2021-APRIL 2022).**

Galvanising the emerging structure of the constellation, early in the continuing phase a framework was shared with constellation members which described: the aim of the constellation; the types of projects that were supported by the constellation; a set of objectives for the coming year and longer-term ambitions; a suggested schedule of interactions; the core values constellation members agree to work to; and current membership of the constellation. The constellation aim was to:

*bring to life new interventions that strengthen communities and empower people to face and address their difficulties. The constellation provides the scaffolding for systems-level learning and applied change through action research and collaboration across organisational boundaries, drawing on diverse sources of knowledge, experience and capabilities to achieve its aim (Innovation Constellation Framework, Oct 2021).*

Within the framework three types of projects were framed: Short-term projects developing alternative approaches or new solutions to existing problems; Medium-term projects exploring a complex situation, re-framing challenges and opportunities from different perspectives and developing interventions aimed at positive change; and Long-term projects developing greater independence and resilience for individuals and the communities in a place (physical and/or digital). In the framework the value for different constituents for each project type was described. The framework provided a schedule of gatherings planned for the year; formal quarterly constellation-wide meetings interspersed with in-formal monthly constellation coffee gatherings. Members were invited to self-organise into smaller group to discuss specific themes and action projects.

Table 4 Innovation Constellation Core Events Nov21-April22

November Constellation Coffee (26/11/2021)	Held online. A6 (MDI students) gave an overview of their Difficult Transitions project and constellation members were invited to review the opportunity spaces that have been identified and help to shape the second phase of the project.
December Constellation Coffee (17/12/2021)	Held online. Attended by: A1, B1, B2, C1, E2, F1, G2, H1 Discussed: Prisons Group innovation project idea and a Youth Futures funding bid
February Core Constellation Meeting (04/02/2022)	Hosted by Organisation G at their offices Attended in person by A1, A4, G1-3, H, Attended online by A3, A9 & B1 Main focus: An internally funded innovation programme to support staff to develop ideas to enhance the charity (G) and its mission.
February Constellation Coffee (18/02/2022)	Held online. Attended by: A1, B1, C1, F1, G2, G3, A9, A4, A6 Discussed: A6 opened conversations about the challenges people face while living in uncertainty and volatility.
March Constellation Coffee (18/03/2022)	Held online. Attended by: A1, B1, B1.1, F1, G3, Discussed: B1 retiring and his insights into the value and how to enhance the constellation. Welcoming B1.1 as B1's replacement. G3 presented the ideas that have been successful through

	<p>their internal staff innovation programme and why they have been deemed valuable. A1 talked about the workshop he was about to join where he was co-leading a co-designing a social housing letting experience.</p>
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In this period a range of outcomes emerged as small groups of constellation actors developed new initiatives. Examples include:

In October 2021 Organisation G committed to funding and supporting a Collaborative Doctoral Study. The outline of the application was developed by A1, A4 and G2 and aims to establish new understanding about sustainable infrastructuring within a user-centred entrepreneurial charity.

In November 2021, Actors F1 and H1 invited A1 and A4 to run an in-person session for a new mental health alliance helping them look beyond individual problem solving to identify new ways distribute systems of support within and across communities.

In February 2022, Actors F1 and H1 invited A1 and A4 to contribute to a joint funding bid. The bid had already been supported by B2 who had leveraged their professional network for further input. The bid proposed a new youth employment partnership (including a college, police force, youth justice group, local authority and voluntary sector) to work alongside young people to research (stage 1) and then address (stage 2) solutions to the problem of systemic negative and bias mindset in young people which limits their thinking and creates boundaries for opportunities and growth. The outcome of this funding bid is awaited.

In March 2022, Organisation G ran a two-day innovation residential for 8 of their staff, introducing them to design-thinking and coaching them through the process of developing concepts which could be prototyped to improve or extend support for their service users. A4 joined at the beginning of the residential to support exercises in creative thinking and at the end as part of a panel (which included G1-3) to judge the concepts which the individuals had developed and pitched.

Between December 2021 and March 2022 a funded collaborative research project was developed and approved. In the context of prison reform, the research centres on developing a strategy to construct effective and sustainable ‘structured on wing activities’ suitable to meet the different needs of prisoners at their different sites and to reduce violence between prisoners and self-harm. The research which will be delivered in July 2022 utilises human creativity and expertise from across the prison group (Org B) and the innovation constellation in a distributed participatory design practice.

Resulting from the discussions with each constellation member in September 2021 were three themes that covered current interests across the organisations. The themes were, the difficulties that people experience; a) while moving towards adulthood, b) in establishing a sense of home and c) in establishing and maintaining mental health confidence. The cohort of 2021/22 MDI Masters students were given a design innovation brief that they would engage with in three phases during their one-year programme. The brief required the students to locate their enquiry within a specific location, a predefined square 1KM (an urban location based near the university campus). During this work a hyper-local innovation constellation was established drawn from socially oriented organisations in the square KM (K, L, & M described in Table 3.). The practices and themes of the work are supported by discrete constellations and connect and extend an on-going discourse about enhancing social justice and social good.

## Discussion of the Case Study

The original intent for the innovation constellation was to bring a collection of socially-orientated organisations together to support each other in their innovation efforts and to actively explore opportunities to collaborate to enhance social justice in their region. The following

discussion uses this case study to consider the following question which is developed from the literature review presented earlier: (1) how do the social design aspects (Tonkinwise, 2019) and social design principles (Bailey et al., 2021) related to normative intent manifest in this case? This discussion is then extended with a consideration of Complex Responsive Processes Theory to speculate about the temporal qualities of different layers of infrastructuring.

A consideration of Tonkinwise's schema of 'social' in social design can help position the 'social' in this case. This case study clearly describes designing as social activity, working with the sociomaterial, concerned with the sociotechnical, integrating non-commercial contexts and debating unmet needs and how they might be better understood. These forms of activity are intended to support design-enabled social change. The case has not evidenced design for services, although the projects that are now emerging will. The case is not design for governments; however, it is working with public bodies in addition to non-government organisations. The outcomes the constellation has produced so far are not social science based projects and are better understood as 'design in the expanded field' or 'design for complex situations' projects. The case study is about the emergence of a system rather than design of a system and it does not contain a social media aspect.

This case study was initiated with an invitation to participate; to form a critical peer group to support each participant's efforts aimed at positive change (framed as innovation) and to collectively explore systems change possibilities that might enhance social justice. This normative intention has developed into a series of discourses related to: the values we aspire and hold each other to in our interrelating and interventions (the culture of our issue-publics); the contextual dynamics of social injustices and the consequences of influencing them (the objects of design); and how we can engage and act together to learn and influence structures and systems for positive change (creatively exploring how to act with imaginative use of resources). The case study has contained a number of distinct issue-publics. Individual actors engaged with the constellation have been active in multiple interfacing issue-publics affording the possibility to share and connect. Some of the case's issue-publics had shared open-ended endeavours (e.g., the constellation of organisations and the Mental Health Alliance) others were time-bound issue-publics with specific outcomes that were being aimed for (e.g., MDI Masters students). The creation of issue-publics is well discussed in the design research literature; it is interesting how this case study begins to demonstrate how different social design issue-publics can interact and support one another in different ways. In fact, the case demonstrates the emergence of a system that initiates and connects issue-publics (with differing scales, scope and duration). Each of these issue-publics is constructed in and develops a sociomaterial environment. This case highlights the importance of sharing across issue-publics of both people and materials as a means to enhance the discourses of those groups and to gather greater resources and capabilities to deal with a particular matter of concern. This is significant because infrastructuring these issue-publics is not merely the forming discrete sociomaterial environments but involves the negotiations, permissions, invitations, roles and mechanisms that support effective coming together and sharing across multiple distinct issue-publics. This interfacing between issue-publics is a central feature in the case study; to create a system that supports a commitment to transitions leading to fairer and sustainable futures. The emerging systems that the case study demonstrates can be understood as constructed through three different types of things: discourses, interventions and encounters.

Different issue-publics are formed by engaging with/as those types of things. For example, in the case study the constellation issue-publics were part of constructing and developing discourses. During June-September the MDI students (20/21) were their own issue-public and also part of the constellation issue-public. However, the MDI students were progressing an action research project, employing design innovation practices and design theory to conceptualise the

constellation and initiate a design for social justice journey. This they achieved by engaging through a series of encounters as part of the constellation issue-public to develop discourses. One of the outcomes of that development are identified ‘Objects of Design’ which can initiate new action research projects, forming new issue-publics, developed through a set of encounters, which feeds into the discourses about their matters of concern. Figure 5., provides a visualisation of these elements and their interactions.

This case offers an alternative understanding of different forms of infrastructuring to that presented by Malpass and Salinas (2020), who described relational, operational and strategic infrastructuring. Each of those forms of infrastructuring can be recognised in the case study. For example, there were activities that created shared trust and value which aimed at building relationships between the range of actors within a project (relational). This can be seen clearly in the Beginning stage of the case and which in Continuing the Constellation Coffee encounters maintain. Malpass and Salinas anchor infrastructuring to activities. However, Ehn, (2008) and Binder et al., (2011) were more expansive, associating infrastructuring with the sociomaterial environment (a Design Thing) that supports the exploration of an ‘object of design’ that produces representatives of that object through different ‘design games’. The authors argue that this case study illustrates forms of relational, operational and strategic infrastructuring and infrastructuring that develops and orientates issue-publics around an understanding of an ‘object of design’: this, we contend, is a form of political infrastructuring.

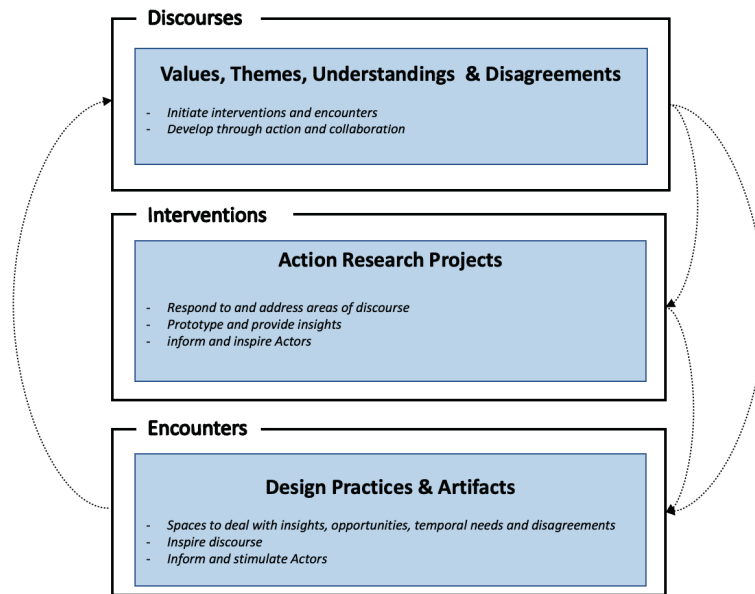


Figure 5 The emerging elements of infrastructuring that support the Innovation Constellation

An innovation constellation is a complex sociomaterial system. As complex responsive processes theory (Stacey, 2003) suggests this is a dynamic environment highly influenced by: the ability and willingness of participants to perceive and respond to each other; the degree to which individuals make public their differences rather than conceal them; and the ability and willingness of people participating to create and articulate novel associations. van der Bijl-Brouwer (2017) suggested that complex social systems cannot be designed in themselves, because they involve humans who have volition and agency, and that we can only design interventions that influence the behaviour of the system. If you can design interventions, you can also prototype arrangements of interventions. The authors argue that this case presents an

emerging prototype of a new social system; a system of structures, interventions and encounters for exploring how we might develop participatory practice using design orientated towards social justice. Perhaps, the prototype is complete once the willingness and capacity of individuals to continue to engage with each other and the themes of their discourse are no longer returning sufficient return to sustain. However, that is the subject for further research, which will systematically consider how an innovation constellation might support the systems listening advocated by the transition design approach.

## Conclusion

This paper examined some of the different aspects and principles that define social design. It highlighted the lack of understanding about how social design theories and principles manifest in complex settings and how infrastructuring emerges over time through engagements and contributions from a collections of issue-publics. By considering Transition Design and Social Design literature the question was posed: what forms of issue-publics and sociomaterial environments support the characteristics required by a transition design approach?

An instrumental case study has been presented that focused on an Innovation Constellation: gatherings of different issue-publics concerned with enhancing social justice in their professional context and more broadly in their region.

The case study and its discussion offer two contributions: (1) political infrastructuring is recognised as complimentary to the existing categories of relational, operational and strategic infrastructuring and offers a means to identify ‘objects of design’ from the complex situations where matters of concern reside; (2) a conceptualisation of an Innovation Constellation as a responsive systems approach to social design infrastructuring, which offers organisations a means to collaborative bridge the gap between social design rhetoric and practical action in existing contested social circumstances.

There are numerous limitations to this research. This is a live piece of work and this study is an initial attempt to grapple with the complexity at play as a reflexive act. Further research will:

- Produce a detailed account of the constellation from the multiple perspectives of its participants with an analysis to better understand political infrastructuring.
- Develop an analysis of the emerging social justice narratives through the different lenses of discourses, action research projects and encounters.
- Explore infrastructuring that supports the agency, leadership and contribution of those subject to current social injustices in the contexts of locally rooted systems of change.

*Acknowledgements: Thank you to all the different organisations and actors who have and continue to engage in this collective systems tinkering. The 2021 and 2022 Multidisciplinary Innovation Masters students at Northumbria University have been particularly pivotal in these issue-publics – thank you.*

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