

Appendix



Graduation Project,
MSc Strategic Design,
Eline Maatje
March 2022

Appendix

- A. Project brief
- B. Interview guide
- C. Consent form
- D. Miro board clusters with quotes
- E. Miro board co-creation session
- F. Full size capability model
- G. Miro board validation workshop

DESIGN FOR OUR future 5309 TU Delft

IDE Master Graduation

Project team, Procedural checks and personal Project brief

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

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

USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT
Download after and open in Adobe Reader (other software, such as Preview/MacJax or a web browser)

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

<p>family name: <u>Maaike</u></p> <p>initials: <u>E.M.</u> given name: <u>Elize</u></p> <p>student number: <u>4596021</u></p> <p>street & no. _____</p> <p>zipcode & city _____</p> <p>country _____</p> <p>phone _____</p> <p>email _____</p>	<p>Your master programme (only select the options that apply to you)</p> <p>IDE master(s): <input type="checkbox"/> IPD <input type="checkbox"/> PIR <input checked="" type="checkbox"/> SPD</p> <p>2nd non-IDE master: _____</p> <p>individual programme: _____ (give date of approval)</p> <p>honours programme: <input type="checkbox"/> Honours Programme Master</p> <p>specialisation / annotation: <input type="checkbox"/> Medesign</p> <p><input type="checkbox"/> Tech. in Sustainable Design</p> <p><input type="checkbox"/> Entrepreneurship</p>
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SUPERVISORY TEAM **
 Fill in the required data for the supervisory team members. Please check the instructions on the right!

<p>** chair: <u>Giulia Calabretta</u> dept./section: <u>DOS/MCF</u></p> <p>** mentor: <u>Matthijs Buijs</u> dept./section: <u>DOS/MOD</u></p> <p>2nd mentor: _____</p> <p>organisation: _____</p> <p>city: _____ country: _____</p> <p>comments (optional): _____</p>	<p>Chair should request the IDE Board of Examiners for approval or a non-IDE mentor, including a motivation letter and c.v.</p> <p>Second mentor only applies in case the assignment is hosted by an external organisation.</p> <p>Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.</p>
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introduction (continued): space for images

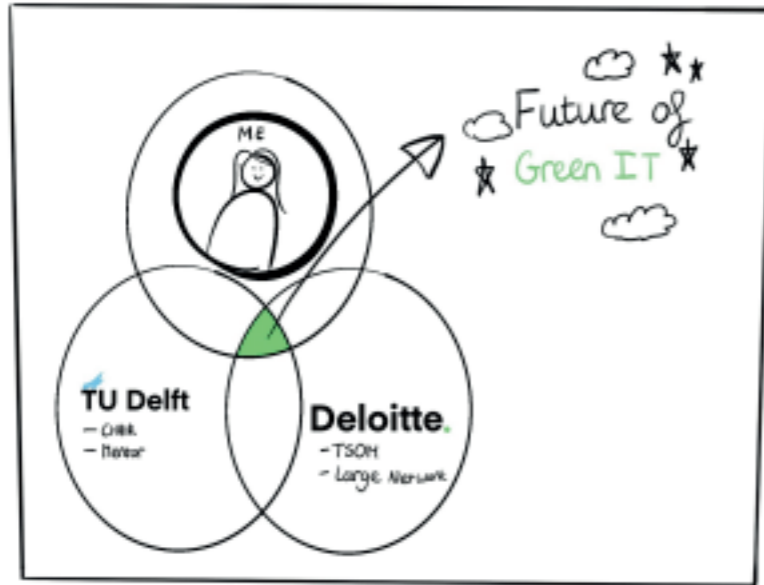


image / figure 1: Stakeholder map

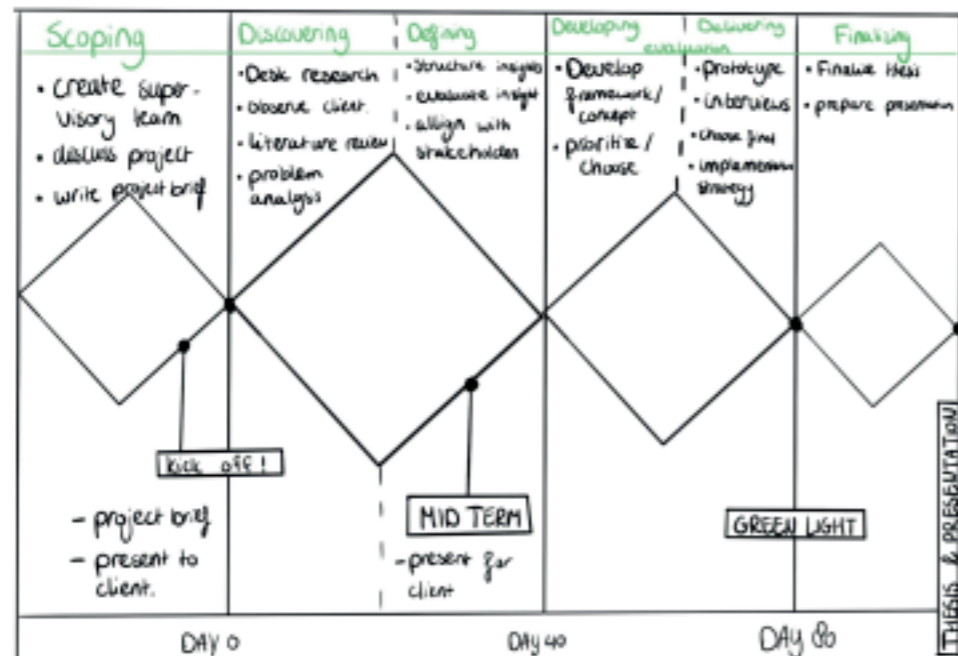


image / figure 2: Double diamond planning

PROBLEM DEFINITION **

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

With the increasing urgency to become more sustainable all businesses are faced with, it is necessary to build a future-proof strategy on how to incorporate green information technology into consumer goods companies. The consumer goods sector is chosen to focus on for this research due to the trend in which consumers care about how a product is made, and how it affected the earth. Therefore, consumers are demanding companies to make the shift towards green development, which also includes Green IT. Additionally, I have chosen this sector due to my personal affinity and knowledge I developed during my studies. In order to stay relevant or create a competitive advantage, companies must take actions to increase their Corporate Social Responsibility. Research shows that shifting to Green Computing is not only better for the environment, but is also cost efficient over a longer period of time. However, implementing this idea into your business without a solid strategy is unadvisable. Therefore, this research asks for a thorough understanding of what the future of green IT looks like, and what is needed to achieve this vision.

Based on this, a roadmap can be suggested to structure the process and support the consumer goods industry.

ASSIGNMENT **

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

Develop a future vision of what Green IT will look like in 3 years, a roadmap providing a stepwise approach that guides consumer good companies to reach this plausible future with the support of Deloitte.

When developing the roadmap towards my future vision, I will go through 4 different stages in which I have certain deliverables suiting the stage and further explained below. The four phases are based on the classic double diamond model and are also shown in figure 2 (the two diamonds in the middle)

In the first phase (discovering) after the kick-off, I will focus on researching relevant trends of the consumer goods market, what Green IT means for this particular industry, explore what is currently de IT operating model, understanding who the stakeholders are, and what motivation consumer goods companies have to make the shift to Green IT.

In the second phase (defining) I will analyze, synthesize, and focus. Create a vision for the future of green IT. I will consult experts (within Deloitte or Deloitte's network) for validation for my initial findings. I will also develop/choose a validation model to measure the findings in the rest of the process.

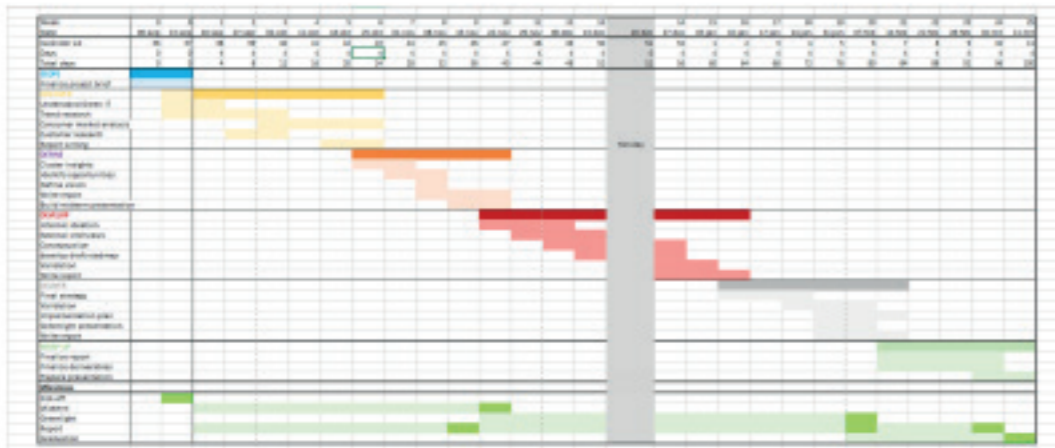
In the third phase (developing) I will develop a roadmap to implement the future vision. To create this roadmap, further analysis is needed into the then-defined end solution. I will facilitate internal or external brainstorm sessions and map/conceptualize my ideas. Proper validation will also be important in this stage of the project.

And lastly, in phase 4 (delivering) I will define and validate my final strategy. Write the last part of my thesis and work on the deliverables.

PLANNING AND APPROACH **

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

start date 14 - 9 - 2021 10 - 3 - 2022 end date



As shown in the image above I will be working 4 days a week on my graduation project. I have chosen to work part time on my graduation project because of my start-up. Together with my business partner I created Zure Wijven, a zero waste and organic limoncello brand. Currently, we are doing well and creating more and more places to sell or drink our product. With many brand extensions in our head I look forward to further develop new business possibilities one day a week.

Currently, I am allowed to go to "The Edge" 3 days a week and last day I will work from home or at the TU Delft campus. I will have weekly meetings with either my supervisory team or my coaches from Deloitte.

MOTIVATION AND PERSONAL AMBITIONS

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

At the start of my search for a graduation topic, I decided I wanted to look for a more data-focused/technical department in a large consulting firm. I decided to look in this niche because I noticed during my courses that I get most excited about developing a strategy based on new technologies. Besides, I think it is valuable for me to graduate on a rather technical issue to show that as a strategic designer I have the knowledge and skills if needed for a future job.

Working for a large and top-quality consulting firm has always intrigued me. I think this is the perfect opportunity for me to see if this could be the right fit for starting my career after finishing my graduation project. Deloitte offers many interesting opportunities both during and after my Graduation Internship.

During my previous internship at KPN, I obtained my first working experience. Working with a, for me at the start unknown technology, IoT, and in the telecom business gave me the confidence that starting to work with a relatively new topic (Green IT) will be an exciting challenge. During my master's program, I learned more about Artificial Intelligence (AI) and I decided to write a paper on new machine learning (ML) techniques.

I look forward to implementing my academic skills into a real business environment. Being able to effectively manage the different stakeholders involved in my project and find new business opportunities is what I hope to fulfill during my graduation process. I want to further develop my skills within the implementation of a strategy, green computing, and project management, especially in a project of this size.

After completing my graduation project, I hope to not only be proud of my work, but also look back at a great time with inspiring colleagues, a healthy work-life balance, and a positive learning journey.

FINAL COMMENTS

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

Let's make an impact that matters!

QUALITATIVE METHODOLOGY

Semi-Structured Interview

Main research goals:

1. Expert input future vision of Green IT
2. Identify how sustainability is/can be incorporated in IT.
3. Discover Deloitte consultants' needs and challenges in applying sustainability in IT strategy frameworks

Introductory script

Welcome,

My name is Eline and for my master thesis for the TU Delft in collaboration with Deloitte I am conducting research about sustainability in IT, and I am especially interested in your vision of the future of IT, and what role sustainability plays in it.

Feel free to answer spontaneously and honestly, I am happy with all kinds of answers. I just want to know more about your thoughts and these will not be judged. Your answers will be handled with care and will be used anonymously and confidentially.

Please know that if you feel uncomfortable or if there is any other reason you would like to stop the interview you can just say so. Also feel free to interrupt anytime.

I would like you to read and sign this informed consent form.

Do you mind if I record the interview? Okay then I will start the recording now.

Introduction questions (icebreakers):

- What is your last used IT device?
- What is your favorite IT device?

Theme 1:

In the first theme, I would like to explore how experts see the future of IT.

Interview questions:

- Imagine that we are in 2025, what role will IT have in your everyday life?
 - Can you elaborate on what has changed compared to now?
- Do you think there will be a change in the IT strategies you develop for your clients?
 - What kind of change do you think there will be?
 - What new/main challenges do you think you will encounter?
- **Which IT trends do you think are worth paying extra attention to?**
 - Why these specific trends?
- **Can you describe what you think the future of IT will look like in 2025?**

Follow-up questions:

- Why do you think the future of IT will change so much/little?
- How does such change make you feel?
- Do you have doubts about the future you described? If yes, what sort of doubts? How do those doubts make you feel?

Theme 2:

Theme 2 focusses on experts' opinions on how sustainability is/can be incorporated in the future of IT. This includes understanding the level of knowledge the experts have on incorporating sustainability in IT, and their experience in previous projects. Additionally, I want to find out what (quantitative) tools/methods are used to measure the carbon footprint.

Chapter 00

APPENDIX B: Interview guide

Interview questions:

- To what extent is sustainability important for you and your company?
- What comes to mind when you think of Green IT?
- **How do you think sustainability is currently incorporated in IT?**
 - **What challenges do you see?**
 - Can you illustrate those challenges with example projects?
- **Is sustainability a topic/factor you consider in your current or past projects?**
 - Can you illustrate this with an example project you have done?
- **Do you implement green solutions, (for example Cloud Computing), for other reasons then to become sustainable?**
 - What reasons?
 - Can you illustrate this with an example project?
- Have you ever measured the carbon emission of your clients IT processes?
 - If yes, which tools were used and why these?
 - Can you illustrate this with an example project?
 - If no, is this not something you normally do in assignments?
 - If no, can you name tools you can use to measure the carbon footprint

Follow-up questions:

- Why is sustainability (not) important to you and your company?
- How does the lack of sustainable IT solutions make you feel?

Theme 3:

In the third theme, I want to discover Deloitte employees needs and current challenges when applying sustainability in IT strategy frameworks.

- How often do you use IT strategy frameworks in your work?
 - What do you use your framework for?
- **What are core elements that make an implementation framework valuable for you to use?**
 - Can you illustrate with an example why these elements were so important to you?
- **Is sustainability incorporated in one of the used frameworks?**
 - If yes, how?
 - If no, how do you think it could be incorporated?

Follow-up questions:

- How does using a framework make you feel ?
- How can using a framework enhance the quality of your work?

Checklist for closure

This was all I wanted to talk to you about in this interview.

Thank you a lot for taking the time to help me with this research. This interview was really helpful to me.

Is there anything you feel like you still want me to know about the topics we talked about in the interview?

I will use the content of this interview confidentially and will not mention your name anywhere. I will analyze your interview, together with some other responses.

Thanks again and if you have any questions about the research please contact me!

Informed consent form

To be filled in by the research participant:

I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.

Yes

Use of the information in the study

I understand that information I provide will be used for a report about the conducted interview study, and will be fully anonymised unless permission is asked.

Signatures

Name of participant

Signature

Date

To be filled in by the researcher:

I have accurately informed the potential participant of my study and, to the best of my ability, ensured that the participant understands to what he/she is freely consenting.



Eline Maatje
Name of researcher

Signature

16-11-2021
Date

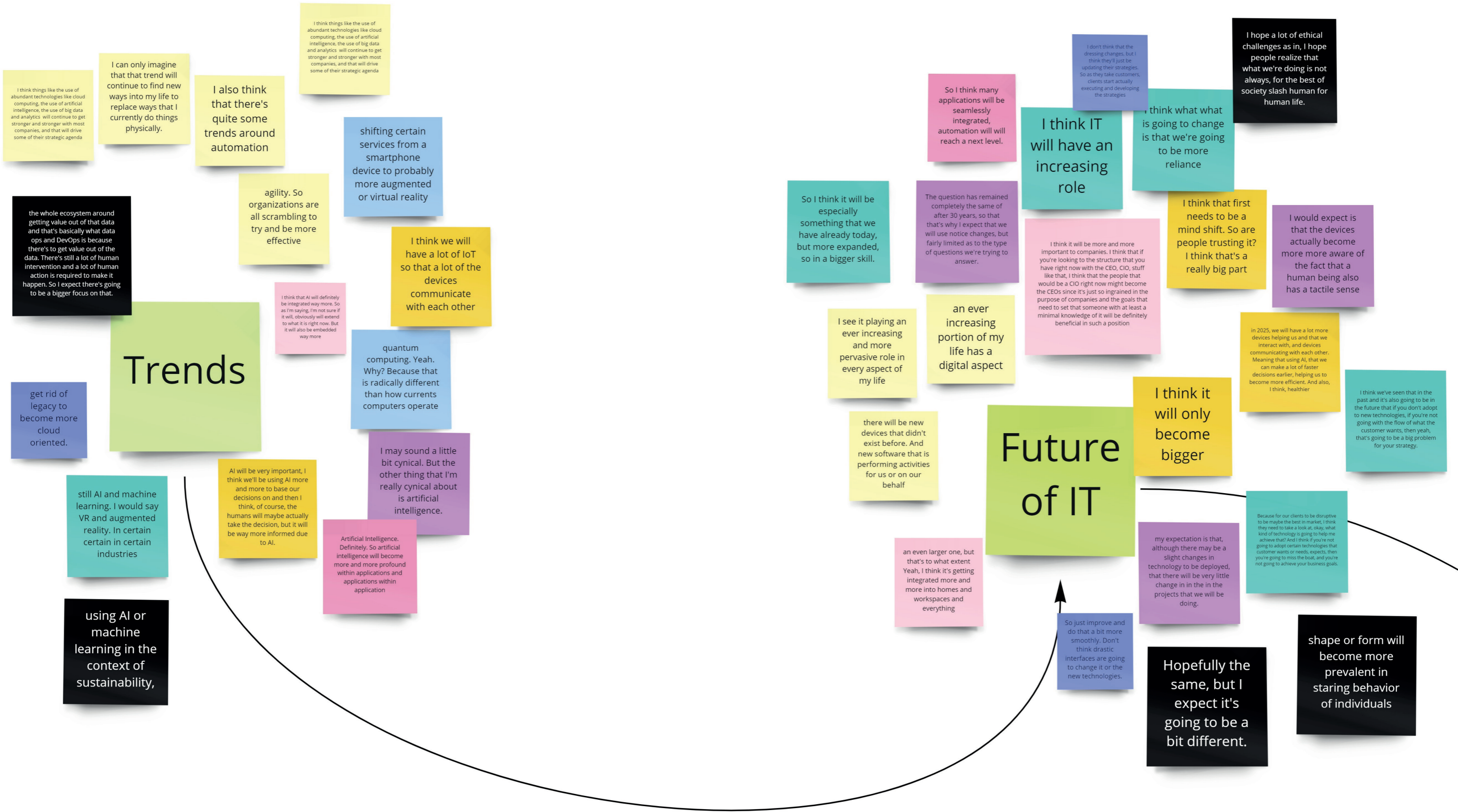
Contact details for further information:

Eline Maatje
+31618768548
emaatje@deloitte.nl



Chapter 00

APPENDIX D: Clusters with quotes

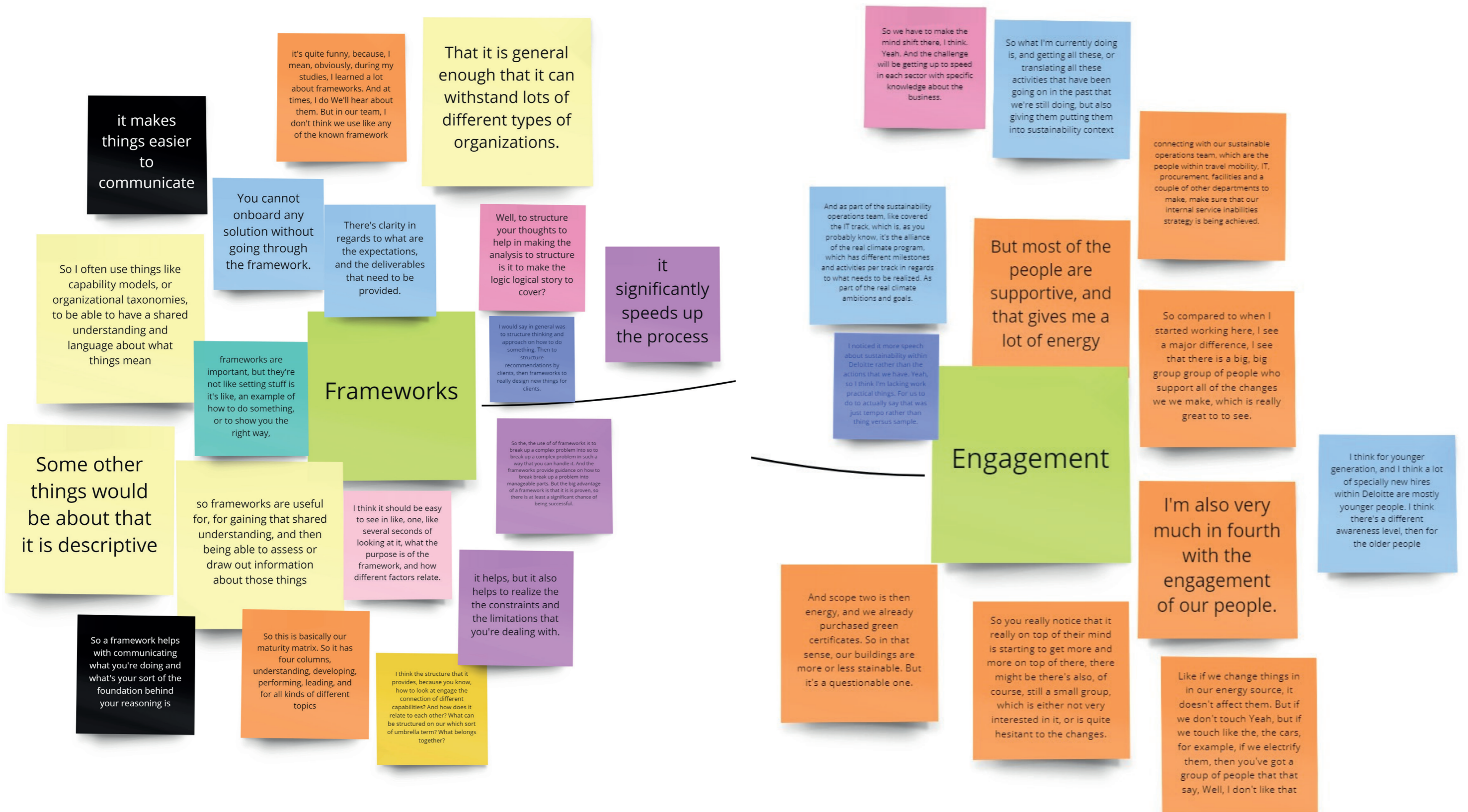


Chapter 00

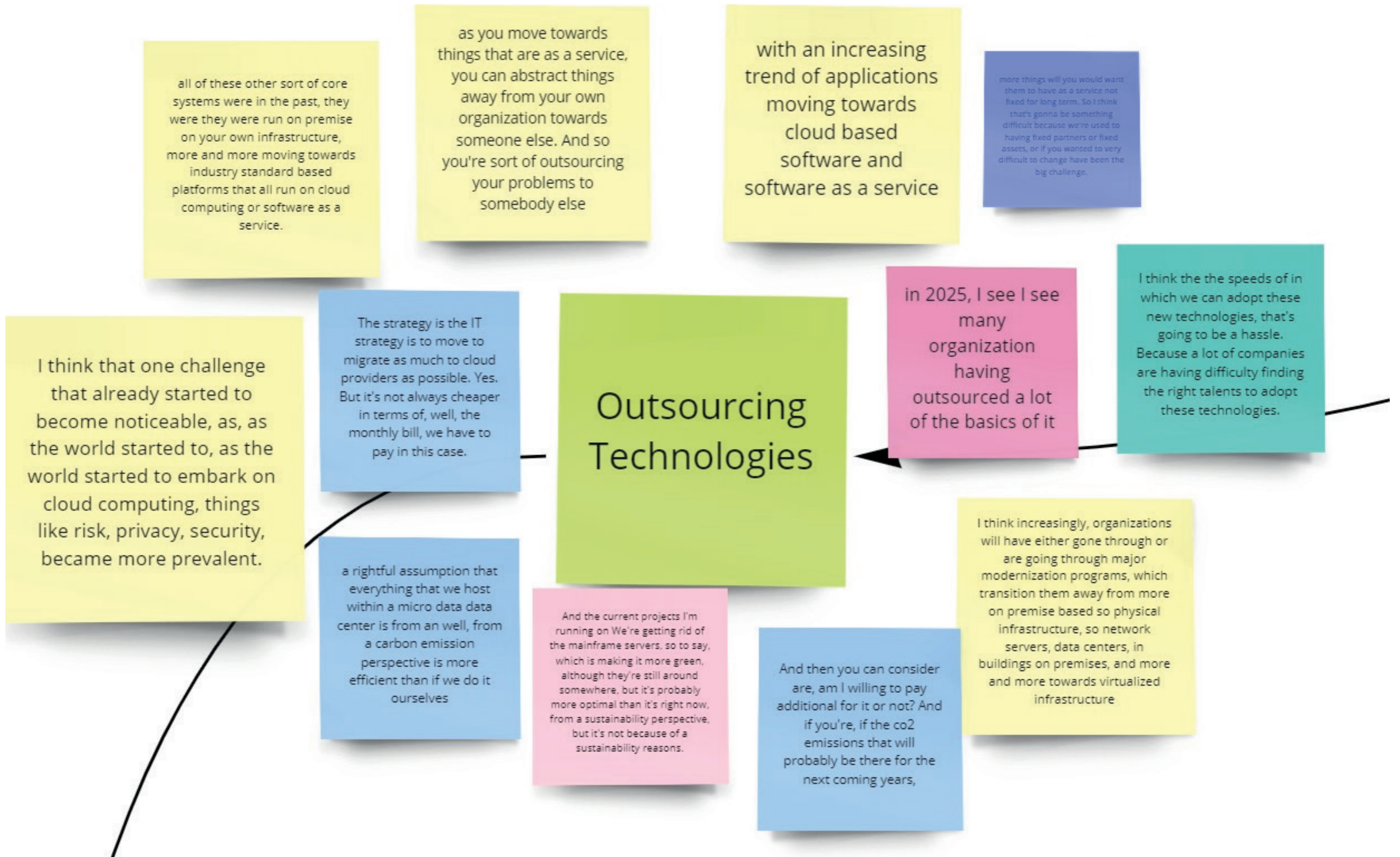
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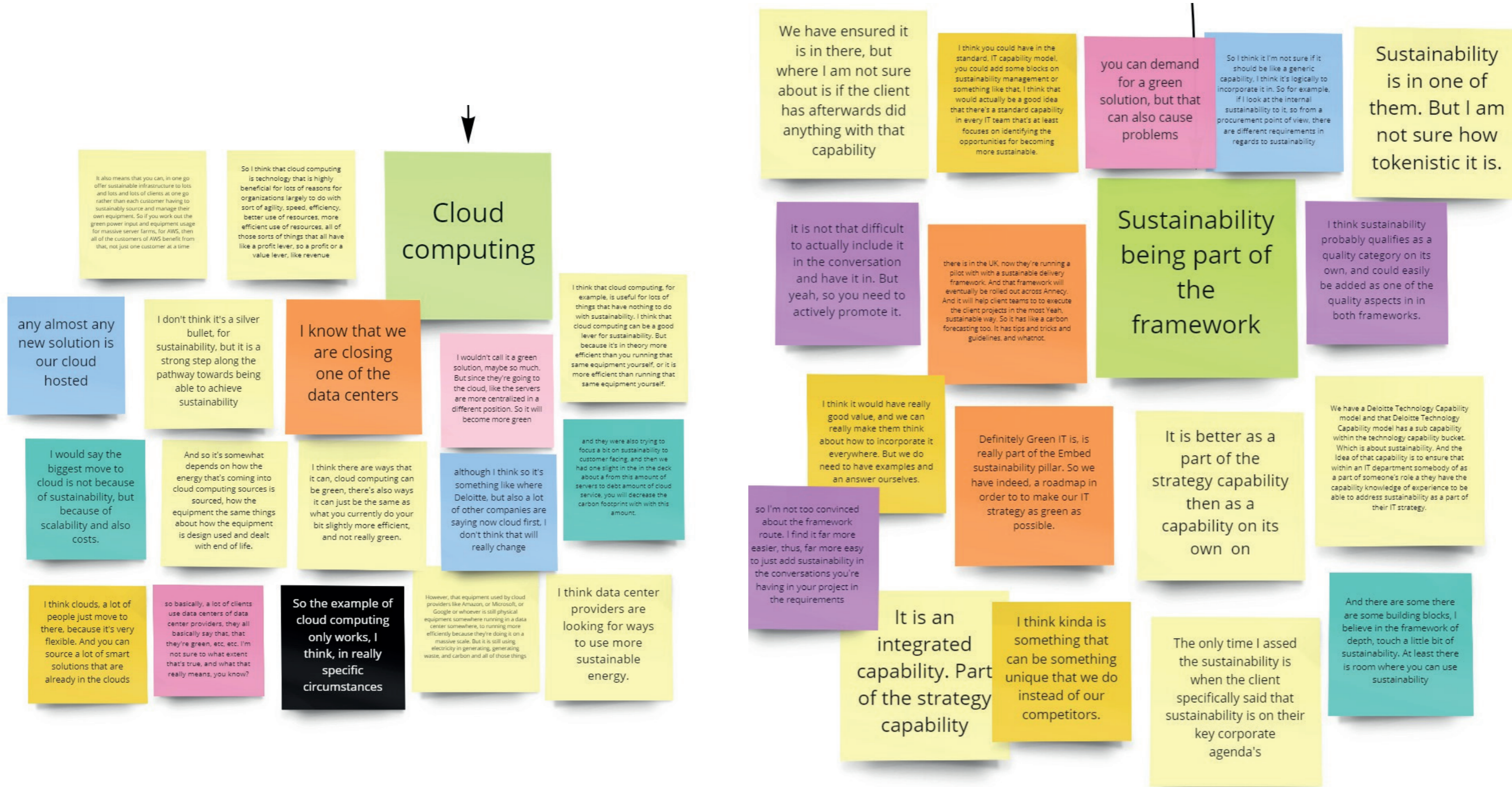


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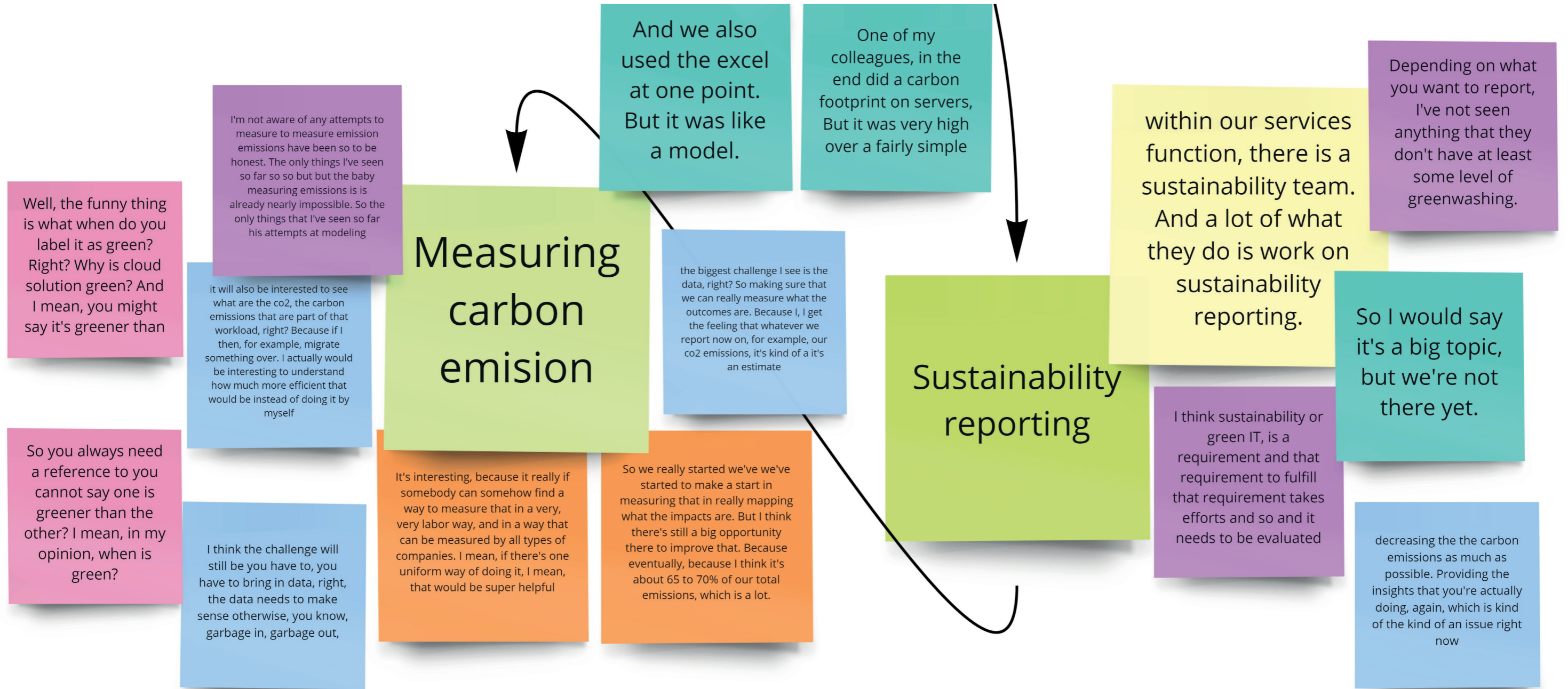


Chapter 00

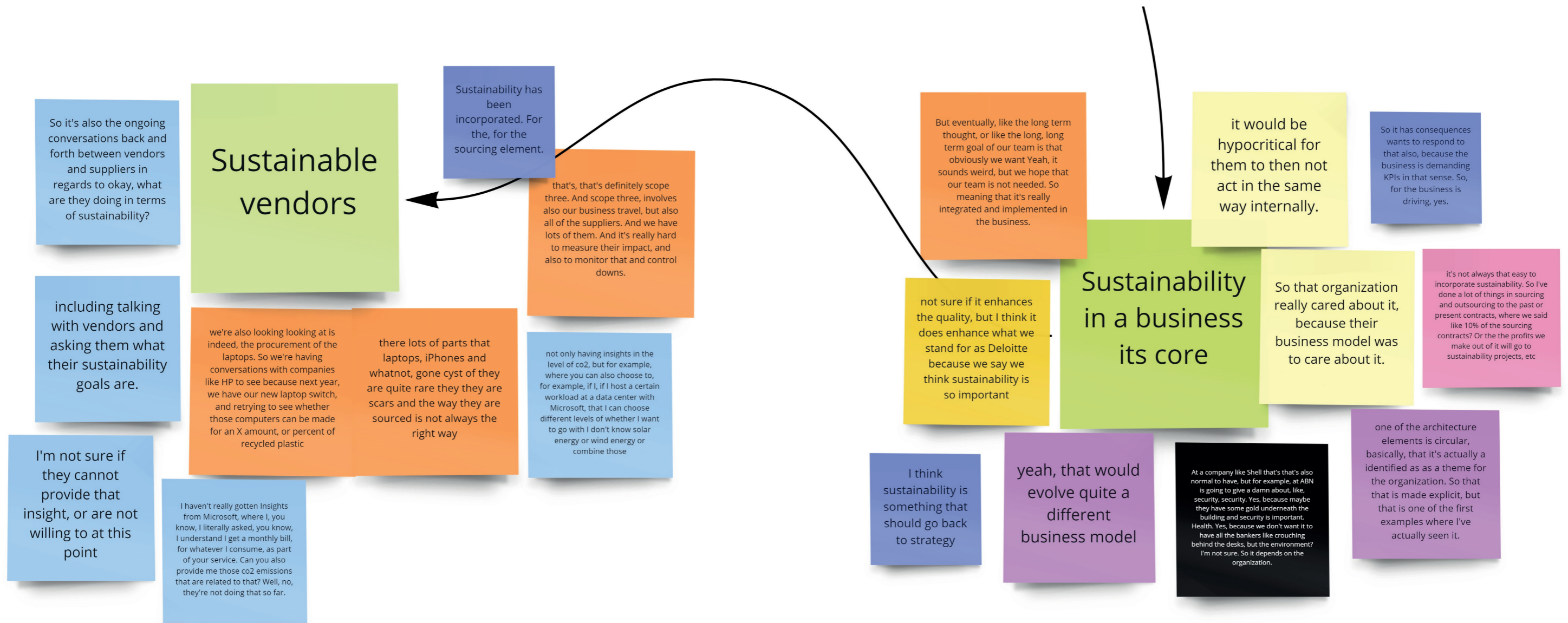
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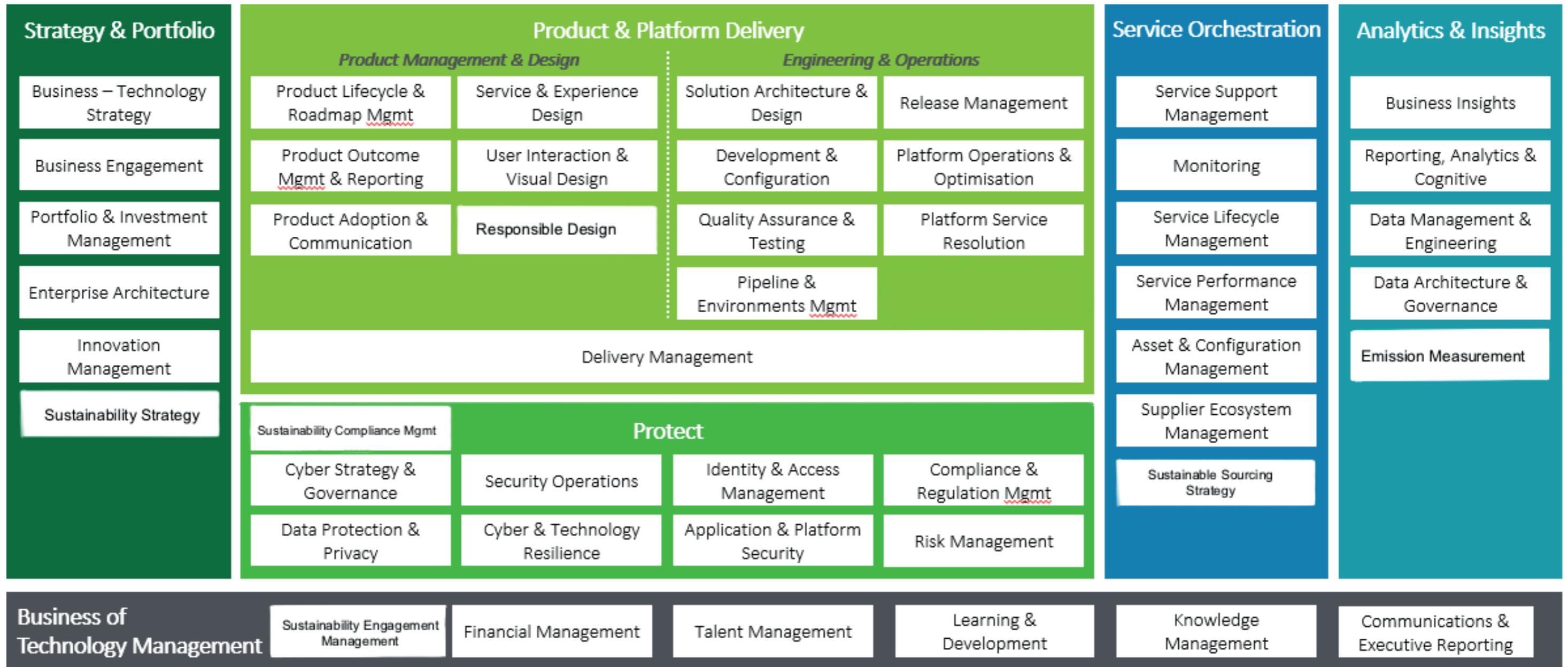
APPENDIX D: Clusters with quotes



APPENDIX E: Co-creation session



APPENDIX F: Capability model



APPENDIX G: Validation workshop

Sustainability Strategy: Assesses the current sustainability strategy and proactively enables the organization to become a more responsible business, focusing on enabling sustainable growth and creating healthy communities and the environment.

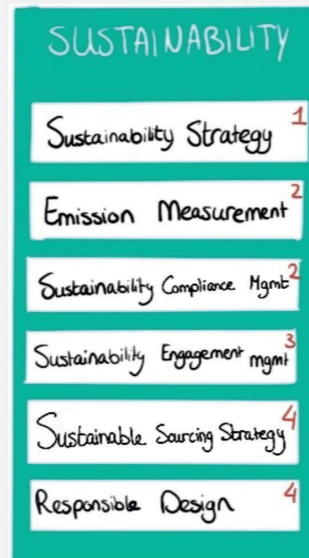
Emission Measurement: Assesses the current state in which the company is able to do emission measurement, while looking at data input, data generation, and used software.

Sustainable Compliance management: Assesses the current level of how the companies (IT) carbon emissions are reported.

Sustainability Engagement Management: Assesses the current state of the level of engagement employees show in transition to sustainable IT, including looking at the future engagement strategy.

Sustainable Sourcing strategy: Assess the current level of sustainable vendor selection when selecting parties involved in the delivery of products and services. Note*: There is some overlap in the capabilities within the domain of Service orchestration. However, the choice is made to still include this as a capability instead of a sub-capability, because it is important to give extra attention so that it will not be overlooked.

Responsible design: Assesses if the company takes the pollution of the development of a product or platform into account in the design and development stages.

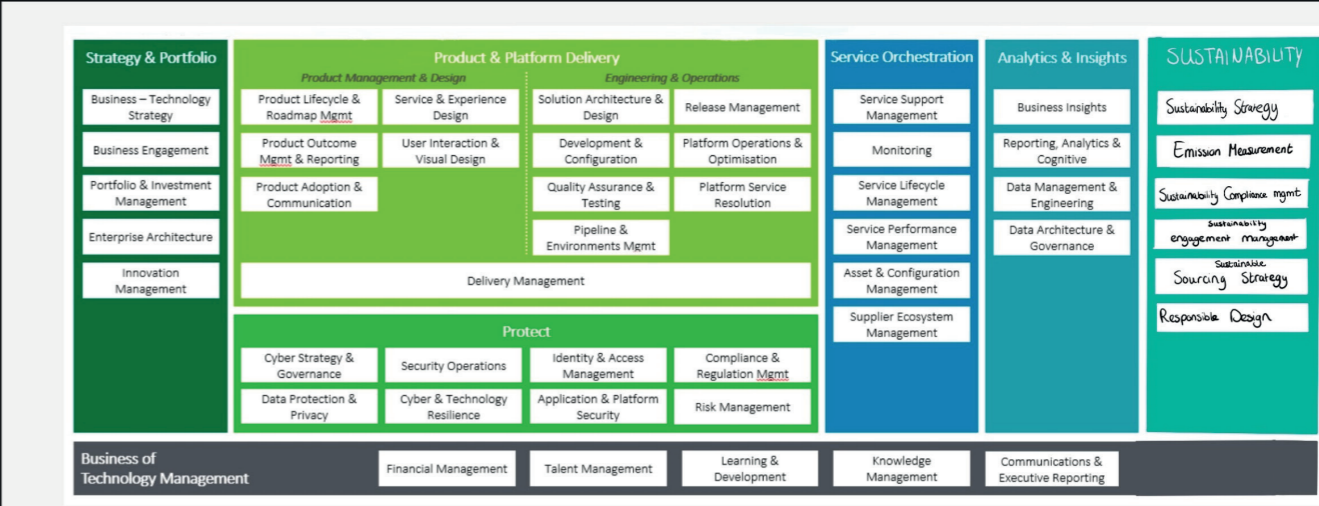


Sustainability Strategy: is this something we as TSOM have the knowledge to advise on? And if not - is this something to be added to 'our' model or elsewhere in the company? (EN)

What do you think of the new capabilities? is there something missing/unclear

Nice set of capabilities :)

Perhaps adding "IT" or "Tech" helps clarify this is not a business led capability, but meant for IT



Do you think adding the extra domain 'sustainability' is valuable? why yes or no?

Yes, however not sure if they should be a level 1 or level 2. They all seem to be part of another one of the existing dimensions

Having it as a separate block might be an "easy" way out for the client to say "we don't have that so let's not include it"

Yes. This allows the client to address sustainability as a whole rather than touching on sustainability within each separate domain which may be too complex (

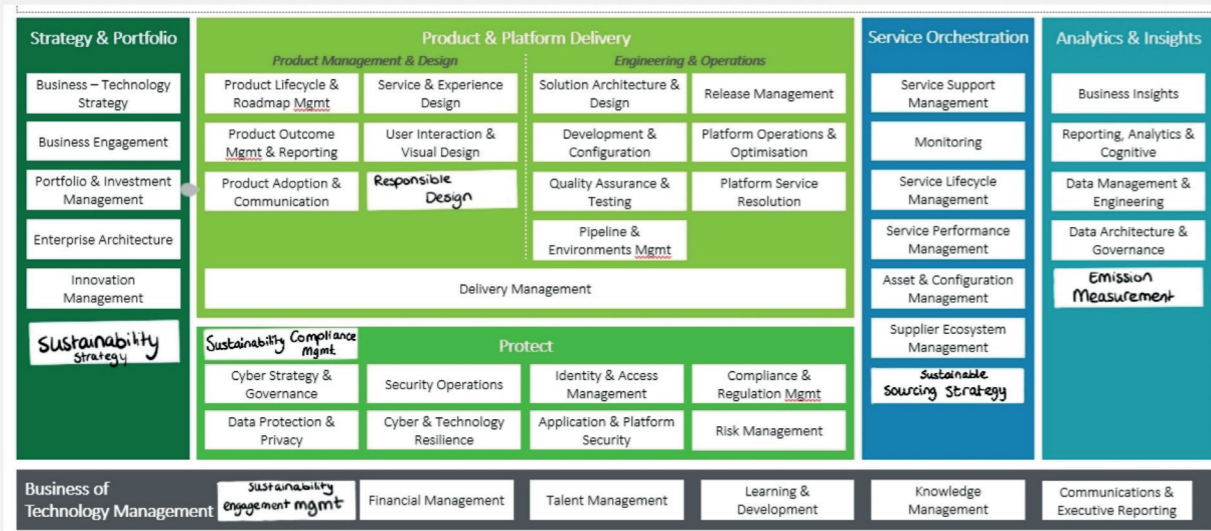
Yes, it provides focus to the topic. If all categories are distributes across the model, they are put out of scope more easilly. Putting an entire topic out of scope is a bigger step

Yes, It forces you to think about sustainability, however it can also be included in other capabilities. Depends on the client ask

Yes. In the near future it should become embedded in everything, but for now it still requires specific focus. However, for it to be especially valuable, it should be specifically tailored to IT and Tech. It starts with a common understanding of what all capabilities specifically mean. If we start a conversation on Green IT, we should have some answers too :) (EN)

An idea would be as well to 'team up' the sustainability capabilities with 'normal capabilities'. This helps our clients to translate where they could potentially start with making their IT more green. It is one step to say we want to do certain sustainability capabilities, but another step to imagine HOW and WHERE to apply. (EN)

APPENDIX G: Validation workshop



Do you think the capabilities should be implemented at once? why?

No maybe:
 #1 strategy
 #2 sustainable compliance - play according to the rules same rules / how and what to measure
 #3 sustainability engagement mgmt - share by what rules to play
 #4 emission measurement - measure current emission
 #5/6 responsible sustainable design/sourcing strategy - see how to improve

No. There is always prioritization going on. Some topics might be more mature than others. So address them as part of the model and maturity assessment. And afterwards determine priority based on gaps between as-is and to-be state

Wouldn't think so. Also consultants need to learn how to use each capability. Clients are also new to the topic, so suggest to take an more general view at first

This will help the client to understand where and how sustainability touches on IT capabilities, rather than taking a more general view

Yes, I think it would be mutually reinforcing. In the sus strategy you would lay down the baseline of for example desired reduction of emissions, which would then be measured by Emission measurement. If the desired reduction isn't managed, then that could be input to finetune the strategy. So like a loop. (EN)

Before implementing these in each capability domain, we should validate each sustainability capability on relevance and impact to the general clients we use this model

Do all sustainability capabilities have natural levels of maturity that make sense? That should be the necessary to implement it

What do you (as a consultant) need to implement the new capabilities?

Examples of what has been done before or new initiatives that are going on

Knowledge sharing

How word sustainability gememetn

Detailed definition of each Level1, L2, L3

Knowledge sessions on main drivers (the only one I can think of is the emission certificates)

understanding current regulation, standards and the formation of these standards. If it is truly based on best in class this could be a new way to compete with slow adopters

Have the same materials available as the rest (maturity model, etc.)

What best practices do we see out there

insights in benefits for other domains such marketing purposes / recruitment / ...?

Real-life examples of clients who are already further in their journey (EN)

Understanding of how it applies to different companies, also for reporting measurements

Tutorial / workshop on how to implement it in practice

A step-by-step implementation journey of each capability

Examples of how sustainability capabilities are connected to other capabilities within the model

Which activities do you think are the most valuable? why?

Awareness - all stands and falls with an adequate understanding of things. Otherwise clients won't trust us and we lose our respectable edge. (EN)

Develop a point of view of what Deloitte thinks what clients should do in this domain

Which activities do you think are not realistic and why?

Personal implementation should not be the main goal, may be too risky

Slide deck -> Can also be used to onboard clients next to creating a better understanding within Deloitte

Valuable:
* Co-create conversation starter deck
* Present new capability model

Workshop: Something creative such as videos sounds nice, but interactivity needed to really get our consultants on top of the topic

Gamification: nice idea, but how measurable are these capabilities? If you don't have clear and defined measurable units, gamification becomes hard (EN)

Which activities should be added?

Before a workshop: do an e-learning! If you bring across information both verbally and written - chances are more likely that the information actually is internalised

Rate experience and applicability using survey afterwards

Score qualitative statements - do

Involve clients in the awareness phase already? We need to take them along! (EN)

employees attended workshop
employees done e-learning
Qualitative interviews, first before start of trajectory and a second time after the desire phase. And cross compare.

Which KPI's can be added to every step of the AIDA model?

