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A Living Lab for a Plastic Free Terschelling

A Living Lab's role in delivering plastics circularity, and promoting a sustainable future 'post-covid-19' for the hospitality industry on Terschelling.

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ABSTRACT

The scale of plastics pollution on the island of Terschelling resulted in the 'plastics free Terschelling project' – hoping to cut all plastic use on the island by 2025. The covid-19 crisis may well have curtailed the plans for plastic reduction in the tourism industry, as the catering businesses have been forced to turn to a takeaway model. However, it may also be argued that a much-needed break for tourism has been enforced. As the businesses on Terschelling ask what the future of their industry and island will look like 'post-covid-19', this project seeks to explore how a Living Lab could address the core sustainability issues of the island. Results from expert interviews suggest that a Living Lab is ideally positioned to tackle some of the issues stakeholders may have concerning sustainability, including single-use plastic reduction. The pandemic in fact presents an opportunity for a more sustainable future of hospitality on Terschelling.

Keywords: Living Labs, Circular Economy (CE), Multilevel Design, Innovation

Introduction

Plastics were once considered the material of the future. Mouldable, durable and aesthetically pleasing – their creation heralded a time of exponential technological progression. However over one hundred years after their inception, plastics have resulted in widespread environmental pollution, threatening the integrity of our surroundings as micro-plastics leak from slowly degrading bags, food packaging and countless other objects. Single-use plastics such as plastic bags and plastic packaging for products are seen as damaging for the environment and society. Plastic pollution is a particular problem on the island of Terschelling, with beaches littered with plastic waste, and local businesses unsure of how to combat this issue and ensure that the island maintains its special natura2000 status, as the infrastructure to implement downstream circularity on the island is limited. The MSC Zoe disaster, in which the contents of over 300 shipping containers ended up being washed up on shores, including Terschelling's, left plastic waste from goods strewn across miles of previously pristine beach (offshore-energy, 2019). Such an existential shock to the environment arguably has pushed residents and businesses alike towards the plastic free Terschelling initiative of 2025 - whereby the island aims to be the first plastic free municipality in the Netherlands by the year 2025. Another unprecedented shock, the covid-19 pandemic, threatens the economic viability of many SMEs, but may in fact present opportunities in achieving a more sustainable future. Terschelling's primary industry is tourism and many of the businesses that originally expressed interest in collaborating in the Living Lab project rely upon hospitality and tourism for the majority of their income.

The research paper's guiding question is,

“How can the formation of a Living Lab assist in the transition towards plastics circularity amongst stakeholders in the hospitality industry on the island of Terschelling from the perspective of experts in Living Labs?”

The aim of the research project is to create a Living Lab which will both aim towards plastics circularity amongst the businesses and help the entrepreneurs table ideas and concerns about sustainability that have become increasingly pertinent during covid-19 times. This is achieved through utilizing the Delphi approach to develop a framework for the Living Lab.

The research paper first explains and integrates relevant theories such as CE, the Multilevel Design Model (MDM), transition arenas and the notion of a “business case for sustainability”. Subsequently, the methodology section explains the methods and tools used in the data collection and analysis. The paper then assesses the results and offers practical implications for packaging circularity on the island of Terschelling and potential theoretical insights into the MDM.

The European Union (EU) has noted the growing importance of a circular economy (CE) in realising the sustainable ambitions contained in such initiatives as the European Green Deal (December 2019). A circular economy action plan makes up a central part of the EU's transition to carbon neutrality, with a ‘sustainable products’ policy focusing on ensuring “...All packaging in the EU

market is reusable or recyclable in an economically viable manner by 2030” (Commission, 2019) highlighting the political backing that projects such as these carry in the year 2020 and beyond. Ensuring ‘economic viability’ is a key concern for the stakeholders and the idea of a ‘business case for sustainability’ is an important foundation both in theory and practice for these projects. Concerning covid-19, the Dutch government has published an “Outline for an EU Green Recovery” (Euractiv, 2020) in which the idea of circular product and system innovations is presented. As well as the political will for a ‘greener’ economy post covid-19, as highlighted in the above document, the ‘business case for sustainability’ recognises economic gains through sustainable innovation. NHL Stenden, a university of applied sciences, located in Leeuwarden, the Netherlands, operates a research lab - the ‘Circular Design Laboratory’. The original research problem with which I was presented was how to help the Circular Design Laboratory achieve the goal of a plastic free Terschelling 2025. Since covid-19, the problem has broadened into how a student project could assist in achieving sustainable operations amongst those participating stakeholders from the hospitality industry on the island of Terschelling.

As the businesses involved in this project can be classified as SMEs, established and run for economic purposes, one may ask why they have voluntarily enrolled in this project. The idea of a business case for sustainability, as described in Schaltegger, Lüdeke-Freund & Hansen (2012), may help answer this; it refers to voluntary social and/or environmental measures taken by a company that improve economic success. An economic ‘win’, realised through environmental and social actions can take the form of cost savings, improved profitability and improved customer retention and reputation (ibid, p. 3). Understanding the reasoning behind stakeholder involvement could inform future projects on how to attract a greater number of stakeholders into the process.

The concept of a ‘circular economy’ has gained prevalence both in theory and as a practical solution to certain societal problems (Lieder, Rashid, 2016; Heshmati, 2017; Rizos et al., 2016). However, this is contested, and other scholars (Korhonen, Honkasalo and Seppälä, 2017) have noted that CE has remained a concept largely embedded in theory and has yet to be studied in practice. Hahladakis and Iacovidu (2018) made an important contribution to theorizing how CE can be conceived in practice at the level of materials, components and products – I have described this in depth in the theory section. Of the original stakeholders involved, six of them can be classed as SMEs. These SMEs, “...Lack a design management function that would coordinate the processes of product and service development, brand design, and communication to create a coherent market entry and customer experience for new products or services” (Aacklin, p. 4, 2010). This renders the need for so called “transition arenas” (Sharp, Salter, 2017) and “transition pathways” (Geels, Schot, 2010) to achieve circularity more widely in society. A “transition arena” (Sharp, et al., 2017) that realises such “transition pathways” (Geels, et al., 2010) through small scale product innovations could be undertaken in an environment such as a Living Lab (Brezet and Joore, 2014). The creation of a ‘Living Lab’ acts as this paper’s project with the hope that this setting aids collaboration amongst the stakeholders to successfully see a transition to the use of alternative materials. A Living Lab is a forum for bringing together stakeholders in process-driven experiments to collectively solve sustainability issues (Sharp & Salter, 2017). A functioning Living Lab could help to instill change on the various levels in both a top-down and bottom-up manner (Joore & Brezet, 2014). There are in fact multiple definitions

for what a Living Lab constitutes, as highlighted in Kallai (2018) - each definition reflecting the fact that a Living Lab is context specific. Innovation is a word used in almost all the definitions of a Living Lab given by Kallai (ibid.) Furthermore, Bajgier, Maragah, Saccucci, Verzilli, Prybutok, 1991 and Bengtson, 1994, see Living Labs as projects to develop products, services and systems. A key insight into a successful sustainability project in an island context comes from Samsø in Denmark, (Sperling, 2016). The innovation behind and subsequent success of the wind energy project that made Samsø energy self-sufficient within ten years was due to factors such as the socio-cultural and political contexts, planning processes and local ownership being understood by project leaders. These topics in the context of Terschelling will therefore need to be explored in the research if a Living Lab is to succeed in delivering circularity in plastics and in addressing other sustainability concerns such as sustainable transport and sustainable waste collection.

A problem posed to this research by the project leaders (NHL Stenden University) was how to encourage circularity to a broader group of stakeholders 'higher up' the system levels hierarchy. This paper explores how upstream and downstream strategies of circular economy in action may penetrate 'up' the hierarchy. This can be seen as a potential outcome of innovations in a Living Lab context, although not one expressly pursued by the paper.

Understanding and utilizing theory carries practical importance in transdisciplinary research as doing so can help the transition to certain goals, such as 'Circular Economy' at a regional or national level. Therefore, understanding theories, such as 'Circular Economy', the 'business case for sustainability' and 'The Multilevel Design Model', is crucial for informing the practical aspect to this research (the creation of a Living Lab). The notion of a business case for sustainability relates to that of a circular economy – increasing the life span of a product or service makes economic sense as well as producing environmental and/or social value (Korhonen, Honkasalo, Seppällä, 2016), (Schaltegger, Lüdeke-Freund and Hansen, 2012).

Theory

Circular Economy

The prevalence of a CE in theory has helped researchers and practitioners conceptualize how a sustainable economy could look in the future. As mentioned, the EU, as well as the Dutch government pursue and promote the concept (Korhonen, Honkasalo, Seppälä, 2016). However, implementing procedures and designing products to realize this transition is more difficult, and therefore conceptualizing CE at the level of the product is important.

Circular economy as a theory gained prevalence in academia as a solution to the increasing amount of pressure on traditional liberal economic models (for example, the linear model) whereby resources were viewed as being infinite (Rizos et al., 2016). This view then propelled techniques that focused on maximizing profit with little to no regard for the environment, for example in industrial farming, fishing and textiles. ‘Ecosystem services’, such as clean air and water are then degraded as industrial scale techniques pollute the environment. CE is also a major concept in the Dutch Outline for an EU Green Recovery. Figure 1, below, visualises how CE looks in practice concerning materials, components and products. This collaboration between NHL and the tourism industry on Terschelling is an example of upstream and downstream supply chain circularity (Weetman, 2016), due to the alternative sustainable materials being offered by the Circular Design Lab, and recycling systems to be discussed in the proposed Terschelling Living Lab. In the context of Living Labs and the innovation processes enshrined within them, a circular economy requires change across the value chain of a product, service or technology (Kallai, 2018). This can be done through innovating new products, implementing new business models (for example, the TBL canvas) and through “closing the loop” and turning plastic waste into a value added product (ibid.).

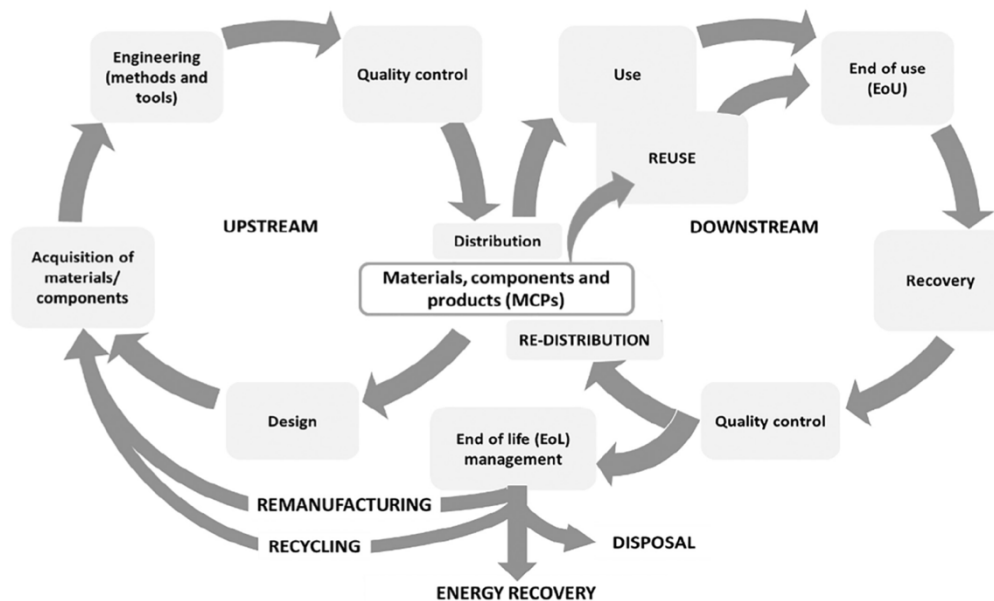
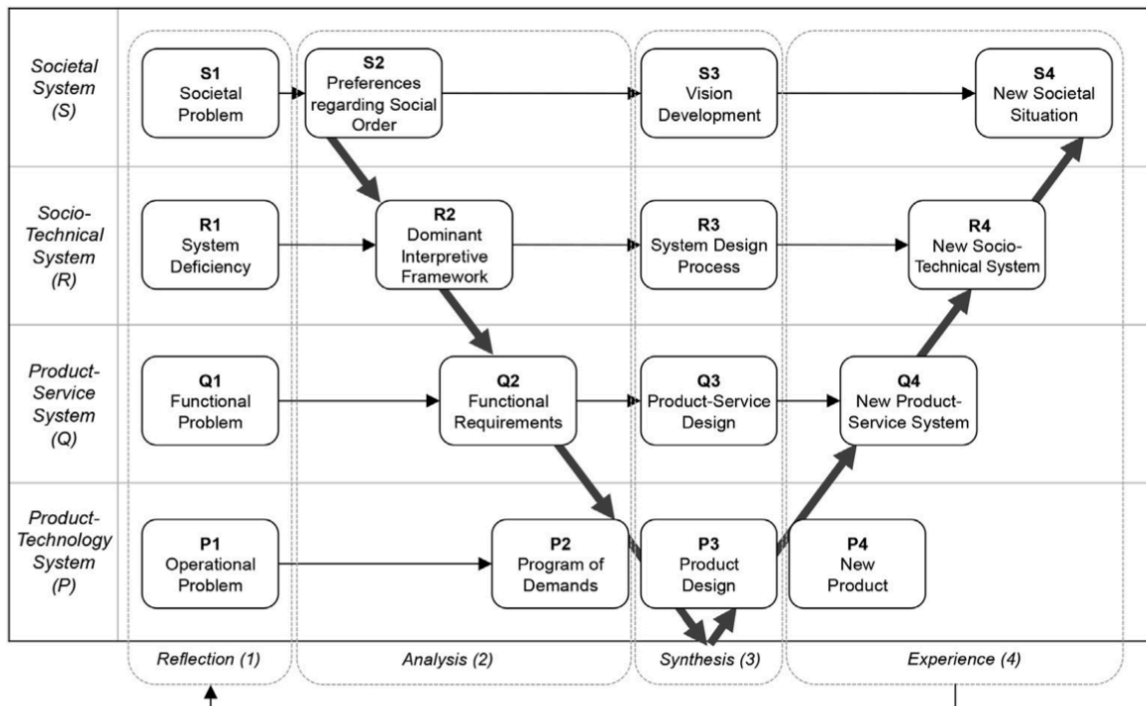


Figure 1: A flow diagram showing two strategies for implementing circularity in materials, components and products. From Weetman (2016.)

Multilevel Design Model (MDM)

Figure 2: A linear representation of the MDM from Brezet et al. (2014).



NHL conceptualize their projects through the Multilevel Design Model (MDM) which seeks to apply a cyclic approach whereby design, change or transition is assessed at different ‘hierarchical system levels’ (Joore, Brezet, 2014). As this paper is concerned with studying and assisting innovations for realising a plastic free Terschelling, the MDM can be used to map the situation of plastic use amongst stakeholders on the island. Design change and transition comprises four stages: Reflection, Analysis, Synthesis and Experience. These are then applied at different system levels which are, starting from the bottom of the hierarchy: the product-technology system (new products such as packaging solutions in this case), the product-service system, the socio-technical system and the societal system. The product-technology system concerns the product itself and the related technologies in the product. Product-service systems make up the second layer and comprise both “physical and organisational components” (ibid, p96). The creation of the Terschelling Living Lab can be seen as a strategy to implement circularity at the product-service system level. The third layer in the hierarchy, the socio-technical system, is made up of so called ‘aligned elements’ such as knowledge, user practices and markets, regulation, cultural meaning, infrastructure, maintenance networks and supply networks (Geels, 2006). The societal system tops the hierarchy and is the layer that describes people’s experience, living in either a country or region, concerning policy, culture, organizations, infrastructure, products etc. (ibid). Geels and Schot (2007) in their seminal piece on transition pathways, use micro, meso and macro levels, equitable to the different system levels in the MLP, whereby micro level niche innovations are developed by “fringe actors” (ibid., p. 400). The Living Lab aims to be the setting for these niche innovations to be tested and improved upon. Brezet and Joore (2014) state that the

demarcation between systems levels, especially the societal system and the lower layers, is very blurred. To facilitate change at this level, continuous structural change takes place at different levels of the hierarchy, slowly transitioning the society from one system level to the next, with change being more complex higher up the systems hierarchy due to ever increasing numbers of stakeholders (Brezet, Keskin, 2015.). Geels and Schot conceptualize this structural change as taking place through both niche level innovations and through conscious efforts to change the landscape on the meso and macro levels. A Living Lab is therefore interesting for transition pathway theory as it has the potential to connect actors at different levels, from those working on niche level innovations, to those involved in regional and national policy making. It is interesting to assess processes that occur between the different system levels, in order to affect change amongst more actors in a larger part of society. In the case of the proposed Terschelling Living Lab, change will most likely occur in a 'bottom-up' manner (ibid.), as niche level innovations are pushed by a small network of actors within the Living Lab on the basis of their "Expectations and visions" (Geels, Schot, 2007).

As the guiding question for this paper concerns the creation of a Living Lab, understanding theories that justify the creation of one is important if this paper is to successfully implement the idea in practice. The project can also be seen to be a constituent of CE in the 'real world'. The MDM can help conceptualize the societal level that the project operates on in the 'real world'. A core assumption of the MDM is that innovations can be developed at different system levels so as to affect change both 'up' and 'down' the systems levels. However, the MDM also informs the Living Lab on the ideal design process for implementing change at product-technology level, as represented in the four ideal 'design phases' of the MDM. Brezet and Joore (2014) state that the design process can be considered in a "Function → Characteristics → Form" (p. 97) manner. Understanding the function of current plastics use on Terschelling may be important for this research in defining characteristics of future products, which then helps characterize future product form.

Methodology

Case-study research lends itself to both qualitative and quantitative methods (Bryman, Bell, Harley, 2019). In this case-study, experts in sustainability and Living Labs are interviewed to gain insights into the general aim for the Living Lab in covid-19 times, the networks that need to be utilized and the practical aspects that need to be understood when setting up the Terschelling Living Lab. These perspectives on the future Living Lab are the designated unit of analysis and this methodology follows a Delphi approach to research. Semi-structured interviews are used in order to inform the project's outcomes

The Delphi Methodology

The Delphi methodology is a process of collecting data from experts who are specialists in a given field and is undertaken through questionnaires or interviews in an iterative manner (Hartman, Krahn and Skulmoski, 2007). It is especially useful when the aim of the research is to develop understanding of problems and solutions, and subsequently forecast projections on a given topic (idid., 2007).

This research follows the Delphi approach to research as set out in Humphrey-Murto et. al (2020) which is as follows:

First, the research question is developed, and this is unchanged to the research question developed pre covid-19:

“How can the formation of a Living Lab assist in the transition towards plastics circularity amongst stakeholders in the hospitality industry on the island of Terschelling from the perspective of experts in Living Labs?”

However, it must be understood whether or not a Living Lab with such a specific focus is desirable or even practical in such times. Second, the experts are chosen and subsequently interviewed or questioned. The experts in this research paper were selected by Marcel Crul and were informed of the research question and problem in the form of a poster (attached in the appendix). Their response to the request to partake in the interviews informed the types of questions to be developed, which focus on the specific knowledge of each experts. The list of experts who responded and partook in the study are given below.

After this, the researchers were interviewed, the results tabulated and the findings from all of the researchers are summarised in the discussion section. Humphrey-Murto et. al (2020) notes that ideally, these results are then returned to the experts, who offer any final suggestions on the main topics discussed in the interviews. The number of rounds of expert iteration in the Delphi approach ranges from one to six (Hartman et al., 2007). This research has developed an action plan in the form of a poster, which is given to the stakeholders who should agree upon a theme and direction for the Living Lab in the future. It is important to note that the results concern the experts' expectations for how the Living Lab will operate. The actual functioning of the Living Lab cannot be assessed, but is conceptualized by experts in the field of Living Labs.

Due to the highly unusual circumstances this research finds itself in, it can be said that no research has yet been undertaken/published on setting up a Living Lab in times of a pandemic. Due to this, and the varying expertise of the interviewees, the questioning aims at open-endedness. Kallai (2018) states that open innovation in a Living Lab context is essentially an investigation of options through networks. Understanding *stakeholder motivation* is important in helping to narrow down the general aim. Some experts, such as Uchechi Obinna and Marcel Crul have knowledge on the specific stakeholders and may provide insights into their motivations for being involved. The *networks* that could be useful will also need to be probed in the questioning of the experts. The *general aim* of the Living Lab similarly needs to be clearly defined as covid-19 has put into question whether or not stakeholders are interested in going plastic free, but equally, there may be more pertinent sustainability issues that a Living Lab could assist in. Finally, certain practical issues (*practicalities*) such as location and existing alternatives to plastic that the businesses could use make up some of the questioning. The responses in the interviews have then been coded in MaxQDA, and organised thematically.

In order to reach theoretical saturation, described in (Bryman, et al., 2019), I have attempted to run themes discussed by certain interviewees with the other participants in subsequent interviews. An example of this came when Marcel Crul noted that tourists could be involved in the project, and this was then asked to subsequent interviewees.

Original Stakeholder mapping

Below is a list of the original (pre-covid-19) stakeholders who stated they would like to take an active role in the Living Lab.

1. Jut Fabriek Terschelling – A company that turns plastic waste on Terschelling into products such as placemats, bowls and other kitchen equipment.
2. Willemijn cooking studio – A family run cooking studio that provides cooking courses for tourists.
3. Stayokay Hostel – Budget chain hostel located on the island that serves a large number of tourists
4. Jumbo supermarket Terschelling – A branch of one of the largest supermarkets in the Netherlands, and largest supermarket on the island.
5. Hotel Schlyde – An independent hotel on Terschelling
6. Snack bar – A small snack bar that provides take-away food
7. Municipality of Terschelling – Represented by Edwin Zijlstra
8. Professors from NHL's Circular Design Lab

Stakeholders 2-6 are the effective recipients of the project – the new plastic free downstream and upstream innovations in dealing with plastics circularity are to be used by these stakeholders. Stakeholder 1 is a primary driver of the innovation process and designs products from recycled plastics that could be sold in some of the other stakeholders' businesses. Stakeholder 7 is important in understanding how the living lab could facilitate transitions higher up systems levels.

It is important to note here that covid-19 has had significant impacts on the stakeholders' abilities and desires to participate in a project that requires time and effort. Their focus is on ensuring their businesses survive (Marcel Crul, 2020). Considering this, the Living Lab should be an arena to assist the stakeholders in their economic survival, as well as a potential future setting for the stakeholders to pursue a plastic free Terschelling. Therefore, the Delphi approach to research is utilized. Experts in the field of Living Labs from the Netherlands assist this research in helping to set up an 'ideal' Living Lab through semi-structured interviews. These insights inform a plan for the Living Lab, which is then presented to the remaining stakeholders (laid out above as 'original stakeholders'). This methodological approach, although slightly different to what was originally planned, will answer the research question and provide the necessary information for starting a Living Lab on Terschelling.

A thematic coding approach (Robson, 2011) has guided the content analysis and interpretation of the collected data, in which themes with relevance to the research questions were created. The data is compared both within-case and cross-case. Through a five-step method inspired by Robson (2011) I have first familiarized myself with the collected data, then generated initial codes based upon the four broad topics discussed (stakeholder motivation, general aim, networks and practicalities). Next, I have constructed thematic networks connecting different parts of the data, with the key word from the theme being shown in italics in the results table. Lastly, I have interpreted the data in the discussion section and integrated it with my previous findings from the literature review.

Questions:

In line with the Delphi method of research, the semi-structured questions will be modified for each expert. As the goal of the Delphi method is to present a broad set of opinions and expertise, and not to arrive at a single truth or conclusion (Nielsen & Thangadurai, 2007), the questions are not pre-coded. Instead, the initial question, detailed below, helps to guide my research and subsequent questions so as to extract as much knowledge from the given expert as possible. Professor Peter Joore is an expert on Living Labs and therefore has practical knowledge on setting one up. Other experts, such as Uche Obinna, are experts on plastics, and may have knowledge on how to integrate new packaging materials being developed at the Circular Design Lab into the future plastics Living Lab.

The first question is the same for all experts: What is your name, job title and field of expertise?

Subsequent questions depend on the response to the first question and are open ended to ensure as much relevant information is taken as possible. All interviewees consented to being recorded and understood that their input would be cited in this research paper.

Analysis

This section details the results of the empirical findings. The analysis utilizes open thematic coding. Themes here relates to common threads of discussion that ran throughout the interviews. These themes fit into three general areas that were explored concerning the setting up of the Living Lab - the *general aim* for the Living Lab in corona times. The *networks* that the Living Lab will need to utilize in order to be successful. Finally, the *practicalities* for the Living Lab, such as physical location and the initiative to create a plastic free accreditation system.

Interview one - Marcel Crul and Uche Obinna

Below is an outline of each of the interviewees response when asked to provide information on their area of expertise and role at NHL Stenden.

Uchechi Obinna is involved with the research group on circular plastics at NHL and the general role of design in plastic related topics. He puts special focus onto upcycling before recycling and is involved with these processes within the hospitality industry.

Marcel Crul holds two associate lecturer positions at NHL - one at the research group for open innovation, where his main line of work is networked innovations, and the other at the research group for circular plastics, where he is involved with product innovations. The two main industries he is involved in are the hospitality industry and a broader sector looking to upcycle plastics for building infrastructure.

Akke Folmer is a research lecturer at NHL in tourism management, where she is the coordinator for sustainability. She is also a researcher at both the European Tourism Futures Institute and at the NHL Marine Wetlands Studies Institute. She is also involved in helping with the implementation of the international tourism plastic pledge (an NVO initiative) in her various roles.

Peter Joore is a professor in open innovation at NHL. His background in product design for companies and governments alike eventually led him to do a PHd at Delft university where he had a role as a professor for the design for sustainability group. His work at NHL is now focused on the crossroads between reflective research and practical design. Notable works include the development of the MDM framework, which this paper utilizes.

Marije Boonstra is an open innovation researcher working on two projects; innovation at festivals, where festivals are seen as Living Labs in and of themselves and the other concerns the innovation process behind the creation of a biodegradable cup. Her background is in psychology and cultural media studies, where she got an Msc at Utrecht University.

Martin Groters is a teacher in NHL's master's program on sociology, leisure and sociology. His specializes in research on festivals, and the socio-cultural impacts that festivals have on attendees and local residents alike. He has also recently undertaken a large study on 27 Living Labs in an attempt to map how they utilize their resources and networks to achieve their initial aims.

The questions posed to each expert were based upon their areas of expertise, probing their knowledge from innovation at festivals, to the application of the MDM framework in practice. In some form, all interviews touched upon stakeholder motivation, the general aim for the Living Lab considering the covid-19 situation, and the networks that exist on Terschelling and Friesland as a whole that can assist and be a part of the project. Finally, practical issues such as potential location and an accreditation system are briefly discussed.

Marcel Crul, Uchechi Obinna, Akke Folmer and Peter Joore for example were asked about potential stakeholder motivation due to their knowledge of the prospective stakeholders and their roles in innovation, and specifically plastics innovations. Below is a table of thematic codes developed from the transcripts, with reference to the topic of the original question in order to highlight the context. In the tables below, 'stakeholders' refers to the original businesses who were to be part of the Living Lab.

Stakeholder Motivation for participating in a plastic free Living Lab (LL)

| Response concerning <i>Stakeholder Motivation</i> | Theme | Projected outcome for LL |
|--|---|--|
| <p>“It has to start from somewhere and certain people have to champion some of these things.” (Uchechi Obinna)</p> <p>“Safeguarding their island and making a plastic free dome for the people.” (Uchechi Obinna)</p> <p>I agree with Uche. You could add one trigger - the MSC Zoe disaster...they should really tackle this plastic problem in the way Uche described. (Marcel Crul)</p> | <p>Taking initiative and subsequent <i>ownership</i> of the plastic problem on <i>their</i> island. Genuine concerns seem to motivate the entrepreneurs in Uchechi’s opinion.</p> | <p>Focus seems to suggest downstream solutions are more needed, as the ‘problem’ concerns existing waste on the island.</p> |
| <p><i>Question focused on corona times</i></p> <p>“Corona crisis has... given us more time to reflect on the current situation and it was getting out of hand, especially in tourism, with mass tourism over tourism and of course, the waste problem associated with that. And the big social impacts of tourism.” (Akke Folmer)</p> | <p>Covid-19 crisis providing <i>opportunity</i> for reflection on sustainable future in tourism for businesses.</p> | <p>‘Sustainable future’ here is a broad term - there’s a need to ask the entrepreneurs what aspects of a sustainable Terschelling are most pressing.</p> |
| <p>“So if people want to be there, not only because of the content, not only about what you discuss, but also because they can, again, speak to their very nice colleague here on the other side of the island.” (Marije Boonstra)</p> | <p>Opportunity for <i>community</i> - beyond innovation</p> | <p>Highlights the desirability of a physical location.</p> |
| <p>“...to get them involved and to make it their own instead of just pushing it upon them is essential. So I think that would also be the case for Terschelling. (Peter Joore)</p> | <p>Giving them <i>ownership</i> over the Living Lab</p> | <p>Stakeholders’ involvement from the beginning key - ie. the simple idea of a Living Lab needs to be</p> |

| | | |
|--|---|---|
| | | confirmed by original stakeholders. |
| ...you cannot start a Living Lab and say, here's a Living Lab, please come to us. You really have to get into the veins of the system and get to know the people to make it to success." (Peter Joore) | Stakeholder motivation from <i>their</i> perspective needed, a prerequisite to the idea of <i>ownership</i> | Confirms projected outcome above - a survey or questionnaire needed to further understand the stakeholders. |

Below are excerpts and themes developed concerning the *General Aim* for the Living Lab. I wanted to understand whether such a specific Living Lab is viable in covid-19 times.

| Response concerning <i>General Aim</i> | Theme | Projected outcome for LL |
|---|---|--|
| <p>“...you can also do innovation in a low-cost mode...it’s a bit of a story that innovation costs money, it shouldn’t. It should deliver your money ...and you’re right, that’s broader than only circular plastics, that’s true. (Corona means) we will have much more use of single use plastics.” (Marcel Crul).</p> | <p>Innovation should help fulfil economic bottom line. At the moment, single use plastics are cheapest way for the stakeholders to operate their takeaways.</p> | <p>Upstream innovation solutions ie. plastic free operations potentially less desirable than downstream solutions during corona times unless innovation in this area delivers cost savings e.g. cheaper, yet sustainable packaging.</p> |
| <p>“They’re all doing takeaway of course because at the moment it’s their only option. So for a Living Lab, a question could be how does a sustainable takeaway system look after this crisis? Because why abolish it? You could keep on doing it. And how is it sustainable? Will it be a plastic takeaway system as it is now?” (Marcel Crul)</p> | <p>A Living Lab should be adaptable to current covid-19 times. Stakeholders’ economic bottom line currently fulfilled through running takeaways - how can the social and environmental aspects also be sustainable?</p> | <p>Stresses that issues concerning plastic use within business operations are more important than ever. A LL could focus in the short term on downstream solutions, so what are the stakeholders’ views on plastic collection points? Are sustainable enterprises who focus on downstream strategies(e.g. Jut Fabriek) able to take a leading role here?</p> |
| <p>“...Circular product development, related to plastics for instance...should be part of such a Living Lab. But concerning sustainability, energy generation and use, water, salt water and so on.” (Uchechi Obinna)</p> | <p>Broader set of sustainability issues have come to the fore in covid-19 times, not just single-use plastics.</p> | <p>A focus on single-use plastics for the LL should remain, broader goals can also be incorporated.</p> |

| | | |
|---|--|---|
| <p>(The general aim) “...is also a question that is interesting to discuss with the entrepreneurs themselves.” (Marije Boonstra)</p> | <p>The democratic idea of stakeholder ownership of the LL from the beginning</p> | <p>Ask the stakeholders what they want from the LL</p> |
| <p>“...they can work on these sustainability goals (UN SDGs), of course. And I think maybe if you promoted that more from the innovation side. That's maybe more interesting for companies.” (Akke Folmer)</p> | <p>The contextualization of the SDGs at the regional and sub-regional levels has been noted as important by the UN for proper implementation of the goals. (sustainabledevelopment.un)</p> | <p>In light of the idea of ownership of the project, the LL could present the SDGs to the stakeholders to decide upon which they feel are the most relevant for the sustainability issues on Terschelling. Linking innovation to these may be more challenging.</p> |
| <p>“...the buses are either completely empty during the day or completely full when their ferry arrives. That's no longer acceptable in a new situation... So I can imagine such a living lab, it's not only about circularity, it can be about all kinds of sustainable and societal innovations.” (Marcel Crul)</p> | <p><i>Sustainable innovation</i> in addressing more pressing sustainability concerns in covid-19 times on Terschelling.</p> | <p>Marcel's point of view is that the LL could have a broader focus. However, the main users of the LL are to be the original stakeholders, so once again, whether or not they want to address this issue in their time at the LL should be a decision they make.</p> |
| <p>“...If you take too many things, then sometimes you will end up with a lack of focus... If you diffuse it into more and more different topics, then either you should choose to also have different problem owners that really are the owner of the problem of the new topic and then work on it on the long term. Or you should just go with one specific topic.” (Marije Boonstra)</p> | <p>The idea of <i>problem owners</i> could help address the breadth of topics, such as sustainable transport as mentioned by Marcel Crul. However, a <i>focus</i> is clearly needed.</p> | <p>A mix of pre-existing focus as well as input from stakeholders will be needed to clearly identify the aim.</p> |

Finally, the crucial concept of networks was coded in MaxQDA. As stated in Kallai (2018), open innovation in a Living Lab context should be viewed as investigation through networks. In relation to the MDM, these networks have the potential for both bottom-up and top-down systems level change to take place, as well as connecting actors to successfully innovate products as described in the design phases of the MDM.

| Response concerning <i>networks</i> | Theme | Projected outcome for LL |
|---|---|--|
| <p>“There’s already a lot of network built among people who are interested in reducing plastic use. What is the link, and what connections can we build?” (Uchechi Obinna)</p> | <p>Confirmation from Uchechi that a main function of the LL is to provide the network.</p> | <p>Due to prevalence of existing networks aimed at reducing single-use plastic usage, LL could be focal point for this network to convene</p> |
| <p>“Because I think that was also the idea to involve the Marine Institute. So they are involved. And then, of course, the circular plastics and open innovations and tourism management. There are more possibilities. Hospitality management.” (Akke Folmer)</p> | <p>Akke here highlights the importance of NHL as an educational partner in the project – multiple departments could play a part in this network</p> | <p>The professorship on circular plastics as well as the professorship on open innovations would be key educational partners <i>if</i> the LL were to focus predominantly on reducing single-use plastics. Their role would potentially involve innovation of end products and services, while Hospitality Management (a large professorship) could be a player that involves more stakeholders, e.g. the tourists, in the LL. The Marine Wetlands institute may be a partner in tabling concerns such as plastic waste on Terschelling’s coast.</p> |
| <p>Peter Joore (due to his insights on the MDM) was asked, “How should I conceptualize this Living Lab - should it be a tool to affect change higher up the systems hierarchy?” Peter: “Well sometimes there's policy developments that offer opportunities for companies that you didn't know. On the other hand, sometimes there's technological developments that the policy people don't know... So it's not bottom up or top down with it, but at the same</p> | <p>The original end users are the original stakeholders and make up those involved in the product-technology system. The theme concerning networks here is the LL as a transition arena, between the systems hierarchies.</p> | <p>This project has yet to connect to partners higher up the systems hierarchies, ie. Governments, or regional/local policy makers. The local municipality should be involved with the LL, as they were involved in the WaddenVrij plastic conference and are key if new initiatives, such as plastic waste collection schemes were to be trialled.</p> |

| | | |
|--|---|---|
| <p>time and that is why I think the living lab concept is interesting, because you can be pretty focused, can meet each other and then create chaos” (Peter Joore).</p> | | |
| <p>(Concerning a Living Lab study he undertook), Martin Groters states “...a very interesting outcome was that the more students and teachers are, the more actively they are involved, the more successful the living lab. So I think it's also good if you can see if you can connect education, which can be NHL Stenden.” (Martin Groters)</p> | <p>Refers to the importance of the scientific community in <i>quadruple helix innovation</i> (which Martin refers to subsequently in his interview).</p> | <p>The question for the LL here then is <i>how</i> to involve students. If an accreditation scheme for the stakeholders is set up, which promotes the businesses as partners working towards a plastic free Terschelling 2025, a functioning audit system will need to be in place.</p> |
| <p>“As a tourist coming to the island, you could have your own knowledge, your own expertise that you bring. You have your own network that your bring, that could also be a topic for a Living Lab.” (Marcel Crul)</p> | <p>The quadruple helix mentioned above could be strengthened by a fifth group of participants – the tourists. The quote signifies a change in the conception of tourists, from those who take, to those who give and add to the island.</p> | <p>If tourists were to participate in a Living Lab, the project would need exposure.</p> |
| <p>“And you also have Cosun - the sugar factory and they develop all these kinds of kinds of new applications of organic plastic.” (Marije Boonstra)</p> | <p>A partner for potential <i>upstream innovations</i> to plastic waste is provided here. Crucially, Cosun operates in Friesland and Groningen</p> | <p>The project was given Cosun’s local R&D lead. She will be notified of the project.</p> |

Practical issues

The main practical issue the interviewees were asked concerning setting up a Living Lab on Terschelling was that of location. Marcel Crul agreed that a physical location was desirable, and noted four potential locations; NHL's Maritime Studies building (although it's often full), a monument that used to be a store for buoys, or the industrial estate near the harbour. However, Marcel Crul noted that the municipality have not been overly cooperative on helping NHL find a location in the past, and rent prices are comparable to Amsterdam. Therefore, the most practical option seems to be the fourth option; a 'rolling' location whereby a different entrepreneur can host the Living Lab at his or her premises every time the Lab convenes. In the spirit of the idea of *ownership* however, this issue is put to the entrepreneurs in the deliverable in the form of a poster. Marcel Crul thought that a potential topic that the Living Lab could address is how a sustainable takeaway system could operate for the stakeholders. He noted that the businesses involved primarily in catering had been forced to switch to a takeaway model, and therefore had increased the amount of single-use plastic they were consuming. He noted that the plastic waste may need "cooling down period" to avoid the risk of covid-19 contamination, with the entrepreneur's input being important on this topic.

Connected to Peter Joore's confirmation of the Living Lab as a transition arena, was Akke Folmer's comment that currently, the 'Brown Fleets' of sailing boats have been given permission to transport tourists to the island through the, "Council's...kind of emergency law." One can speculate that there may need to be other emergency laws if tourism is to be considered as safe during the covid-19 pandemic. Marcel Crul noted that buses are unsafe after a ferry has arrived, as tourists flood the otherwise empty buses. This links back to the question of the aim of the Living Lab in these unprecedented times. An outcome concerning this was at the very least, if the stakeholders want it to be, the Living Lab should be a place for ideation on such issues, and not limited to just plastic related topics.

Finally, there was consensus from both Marcel Crul, Marije Bonstra and Martin Groters that the tourists themselves could be another group who partake in the Living Lab. This would add an interesting dimension to the quadruple helix.

Discussion

The coded segments were ones that focused upon Terschelling specific information as provided by the interviewees. Subsequent to this, themes such as ownership of problems are inevitably going to concern those specific to Terschelling. For example, the problem of plastics contamination of the environment, future sustainable transport and even energy generation are expected to be examples of such problems that the stakeholder could address.

The idea of stakeholder motivation must clearly be addressed by the stakeholders themselves. A reoccurring theme under this was that of *ownership* of the Living Lab. The analysis helped to identify possible motivations and this has resulted in the deliverable (a poster, located in the appendix).

Concerning the general aim of the Living Lab in covid-19 times and given the nature of this topic, certain answers were expected. For example, the idea that I should ask the stakeholders for their opinion on the general aim, as stated by Marije Boonstra, is plain but nonetheless important. Linking this to Akke Folmer's opinion that fulfilling the SDGs should be at the heart of the project, a simple idea is to ask the stakeholders what SDGs are most pressing for Terschelling; the stakeholders could potentially rank their three most important. This has also been included in the poster. For example, if SDG 14, "Life below water" was marked as the most important, it could be assumed that the Marine Wetlands Institute will have a significant role in innovations around the problems identified that relate to this goal. The expert interviewees voiced slightly differing opinions on a general aim for the Living Lab. Due to the fact that Terschelling relies upon tourism, all of the ideas could be considered to concern sustainable tourism. Buzz words such as over-tourism were voiced in these interviews, and this leads to the thought that the Living Lab could address multiple sustainability issues. However, without clearly defined *problem owners*, the Living Lab risks being little more than a 'blue sky thinking' project. In fact, the Living Lab should be the breeding ground for circular product innovation and a transition arena to allow designers from NHL's various professorships to collaborate with the original stakeholders, tourists and the Wadden municipality. The increase in single-use plastic usage should further justify the need for a Living Lab for which plastic circularity is the main issue. Furthermore, a problem owner for this topic already exists; the Jut Fabriek, who turn plastic waste into value added products (plates, bowls and other decorative objects). Their experience of this downstream circularity solution should be invaluable for the interplay of the quadruple helix. NHL have much larger capacity to turn plastic waste into value-added products in comparison to the Jut Fabriek and should therefore be seen as those who scale-up the techniques already in use at the Jut Fabriek.

Finally, the themes related to *networks* highlight that the Living Lab should be the arena for quadruple helix innovations. NHL is ideally placed to promote student leadership in innovations here. Martin Groters' recent research on Living Labs showed correlation between innovation successes and higher student involvement in Living Labs, and the breadth of studies covered by NHL should enable these innovations to cover a greater scope of sustainability issues. Marije Boonstra's suggestion of involving Cosun, who develop biodegradable plastics is interesting as this relates to the concept of an upstream solution to the problems current single-use plastics pose. Cosun have factories and R&D labs in Friesland and Groningen and are therefore a very useful network that could help strengthen the business side of the quadruple helix that is needed in the Living Lab.

Limitations

A key lesson learnt from this study on Living Labs is that a sense of ownership from the main stakeholders is vital if it is to be a success. To that end, the lack of stakeholder input into the process is limiting to the final outcomes. However, interviewing experts on the subject has produced tangible results which have informed the final poster, attached in the appendix. The experts have divulged their knowledge of their networks from Terschelling and Friesland more broadly, and the study now has many contacts in order to advance the Living Lab project. However, interviewing different actors from different parts of society, for example local policy makers from the Wadden municipality, and therefore from different “system levels” (Joore, Brezet, 2014) could have provided further insights into the necessary ‘next steps’ this project needs to take. A contrasting point to this however is that the Living Lab, through the eyes of experts on the subject, is the unit of analysis and therefore those interviewed were the ideal participants for the research. The Delphi method provided a good base for the research to be undertaken, however a thorough execution of this methodology would have seen the experts return to give their opinion on the poster and the final results over various rounds. This research paper lacked some theoretical insights concerning transition pathways and specific information on circular product development. However, Peter Joore’s input was appreciated as it gave insights into the relationship between the MDM and the concept of a Living Lab. Future research may add value in answering a question such as the one posed in this paper by successfully establishing and iteratively assessing a Living Lab’s function. The application of the quadruple helix theory to future studies on Living Labs would provide a solid framework for gathering information from the necessary networks due to the fact these networks are at the core of this theory on innovation. The researcher could then tackle the problem of gathering information on networks from the standpoint of science, policy, industry and society. Finally, on a practical note, future studies should consider connecting with the European Network of Living Labs. This would provide researchers with both the networks that current Living Labs utilize, and information on best practices within a Living Lab environment.

Conclusion

The onset of covid-19 meant that the original stakeholders (the nine businesses) had to focus on their economic survival. Any project that would not confer benefits in helping them keep their business afloat was simply not on the agenda. However, it is also a time for all involved in tourism to consider this as an opportunity for a sustainable vision of hospitality, and tourism more generally on Terschelling 'post covid-19.' It is hoped that the businesses will see that circular product and service innovations resulting from a Living Lab will deliver their money in the future, as Marcel Crul noted. The slight methodological tweak, concerning the adoption of the Delphi methodology has more than sufficed in understanding the unit of analysis, the Living Lab. Although reducing single-use plastics amongst the stakeholders should still be the primary focus for the Living Lab, the stakeholders are now able to take ownership of the project, and decide whether or not a Living Lab should address more of the sustainability issues discussed with the experts. Most of the interviewees stated that the general aim of the Living Lab could be broader, and in that sense the research question used in this paper could have been modified. Not only does a Living Lab have the potential to tackle the issue around plastics circularity on the island, it should in fact be concerned with a broader range of sustainability issues for the hospitality industry on Terschelling. Despite this, downstream and upstream innovations to tackle the single-use plastics problem on the island were tabled by some of the experts, and these provide an interesting and solid foundation for the future Living Lab. Sustainability issues, such as a sustainable takeaway system are now more complex due to covid-19, but this 'break' should be seen as an opportunity and not a hinderance. Downstream solutions to plastics circularity, such as waste collection and subsequent reuse have to comply with government guidelines on reducing the spread of the disease. This further stresses the need for a transition arena where ideation and innovation can be openly discussed amongst those original nine stakeholders, and other relevant actors, such as the local municipality, companies such as Cosun, and students studying at NHL Stenden.

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Appendix

Poster for the stakeholders

Your Living Lab



For Sustainable Innovation on Terschelling

The main challenges concerning sustainability that business, and the island as a whole faces in the era of covid-19 are best understood by you, the islanders. How would you feel about participating in a Living Lab on Terschelling that focuses on delivering you sustainable innovations in your operations and in helping Terschelling achieve a vision of sustainable tourism for the future? As business owners, you would be working together with students from NHL Stenden, designers involved in circular product development, Wadden municipality and eventually the tourists themselves to improve both the sustainable and economic outlook for Terschelling and your businesses. The Living Lab project initially aimed at product innovation around plastic use as discussed at the Wadden plasticvrij conference. However, since covid-19, there may be more pressing issues you feel need addressing around sustainable tourism; What model of sustainable transport do you envisage for Terschelling? How can the plastic waste from your operations be best collected and recycled? How can businesses unite to present a united vision of tourism for Terschelling?



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Which of the UN sustainable development goals are most important for Terschelling and your business? Please rank them from 1 - 5 (1 being the most important.) The top five will then be used as the guiding goals for the Lab



Research has been undertaken with experts in the field of Living Labs. Some of the ideas that a Living Lab could address include innovation on collection points for plastic waste, testing and developing new sustainable products from companies such as Cosun, and discussing ideas for sustainable and safe transportation for tourists and locals.

What would motivate you to be involved in a Living Lab on Terschelling? Please tell us here:

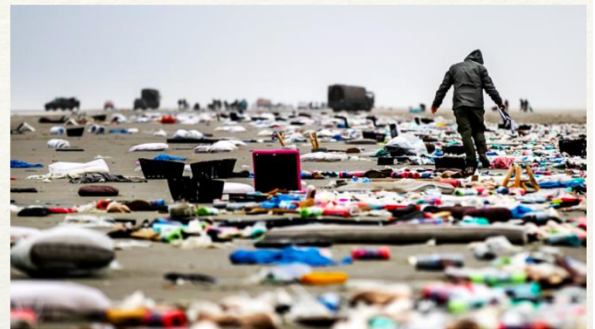
Below is the poster presented to the experts before they were interviewed.

A Living Lab for a Plastic Free Terschelling

Rob Smye - Msc Sustainable Entrepreneurship
Email: r.w.g.smye@student.rug.nl

The background

The idea of a plastic free Terschelling is not a new one - you've probably heard of the collection of cafes and restaurants already involved in trying to make Terschelling plastic free by 2025. The Wadden Plasticvrij conference set things in motion for the stakeholders involved in the initiative. The initial challenge my research aims to address is how to facilitate this transition, and the conclusion thus far is that a transition arena, in the form of a Living Lab, could offer the stakeholders a platform to collaborate on ideas to assist in making their businesses plastic free.



My background

My name is Rob Smye and I'm an Msc student of Sustainable Entrepreneurship (a transdisciplinary degree) at the University of Groningen. I've had the opportunity to study such concepts as entrepreneurial ecosystems, the idea of a 'business case for sustainability' and transition arenas.

Terschelling is a unique example of a potential sustainable entrepreneurial ecosystem - a distinct geographical area that could act as a test ground for such an initiative. The creation of a Living Lab could potentially be the transition arena that facilitates the stakeholders' collective attempts to go plastic free. The potential repetitive benefits for the businesses involved fit well into the idea of a business case for sustainability.

Project aim and research question

The *aim of the project* is to help set up a Living Lab that assists the businesses involved in going plastic free. There are many questions that need to be answered, such as; will the Living Lab be a physical or virtual forum? Should the plastic free Living Lab sit within the existing tourism Living Lab on Terschelling? Should the focus of the Living Lab be on the collective buying of more sustainable products, or on developing their own products from plastic waste washed up on the island? As most of the original stakeholders are in hospitality (hotels and restaurants), I envisage the Living Lab's role being focused on collective action towards plastic free operations. However, it is interesting to consider whether the Living Lab's role could also assist in plastic recycling and reuse. One stakeholder (Jut Fabriek) is focused on reusing plastic waste to make products (decorative crockery etc.) Utilising their knowledge could help extend the reach of the Living Lab to the broader goal of achieving a plastic free Terschelling by 2025. All of the above considered, the initial goal of the Living Lab is to help the stakeholders work towards plastic free operations.

My initial *research question* is; "How can the formation of a Living Lab assist in the transition towards a plastic free Terschelling?" This will be modified as my research progresses. The methodology follows the Delphi approach to research. As the experts, your input will be used to inform the structure of the future 'Plastic Free Living Lab'.

The practicalities:

The coronavirus situation has meant that many of the stakeholders are no longer as interested in going plastic free. Understandably, their focus is on surviving. This begs the question, how does the Living Lab need to adapt to meet the economic needs of the stakeholders? Should the initial focus now be on providing an arena for the businesses to collaborate on ideas such as a collective buying? My opinion is that although the Wadden Plasticvirj conference mainly discussed ideas around reuse of waste plastic, the stakeholders may struggle to find time to commit to issues that aren't focused on their own economic survival and regeneration during such challenging times.

With expertise in various fields, your input would be greatly appreciated here. The main question I have in these coronavirus times is whether or not the initial focus of the Living Lab should be on helping the businesses survive, or if it should be 'true' to the initial aim and focus of the plastic free goal?

I would like to invite you to attend either a Skype meeting, or to fill out a questionnaire. I would then use your insights to develop a plan for the Living Lab. In line with the Delphi approach, this plan would (ideally) be returned to you for any final inputs, before being presented to the businesses involved.

The questions I present to you in either the Skype interview or the questionnaire will be broad and mostly open ended to ensure your knowledge is utilised to the greatest possible extent. However, the main questions I have so far have been presented in this document. Maybe you will have questions yourself for the research - please ask these as they will also guide the results of the study.

If you're able to help in my research, please contact me via the email provided at the top of the document. Professor Marcel Crul is guiding me through this project. I believe you all have his email; if there are questions you feel would be better answered by him.

Thank you all once again!

Interviews

Uchechi Obinna and Marcel Crul

Rob: Can you briefly state your position at NHL and your area of expertise?

Uche: Well I've been generally involved with the research group on circular plastics and I'm working as a researcher and then also looking at things related to strategic design so some of the projects that you know about for instance related to the circular criteri, but also just delving into plastic related topics to find out what specific information about reducing plastic use and what the role of design can be in that aspect. From the design lab we're also looking at upcycling plastics and all that but first to find measures to reduce before we look at measures for recycling so there's a lot of research about new things especially with the present situation that we still need to get on the table to see how we can offer solutions to some of the companies especially in the hospitality industry at the moment.

Rob: Great, and Marcel, would you mind.

Marcel: Yeah so I have two positions at NHL Stenden, both as an associate lecturer. One is in the lecturette research group of open innovation and the other one is in the research group for circular plastics and in open innovation im responsible for one of the research lines for the research group especially on networked innovation projects so thats the research line I'm executing. And another research line of interest, not mine specifically, but Peter Jorre's you have him on the list is Living Labs. So thats on the side of open innovation. And on circular plastics Im responsible for the research group on product development of circular plastics and thats a little bit of what Uche is in, with the team there so thats the type of projects Uche was mentioning just now. And in that research group we have decided to focus our work. We were a little bit fragmented and now we focus a lot on two parts. One is hospitality and tourism, as a kind of big time user of plastics. And the other one is on upcycling when you have the recycle stuff, upcycling it for building infrastructure. That kind of sector. So those are the two main research areas. And I think your research falls in the first category because most of it has to rurica and that kind of hospitality, festivals and that kind of thing.

Rob: Great, thanks. My next question concerns the motivations. So what underlying motivation do you perceive the original stakeholders had for being involved in this project.

Uche: Are you talking about the Terschelling project?

Rob: Yeah, the Terschelling one.

Uche: Well I would say of course they first have a motivation based on their own observations and belief and also as people from the island who are doing businesses and they think they can make a contribution to plastic use on the island. Yeah it has to start from somewhere and certain people have to champion some of these things. Yeah and they are the ones who think they can make a change and they're doing that based on reasons like safeguarding their island and making a plastic free dome for the people. I would say that is their main motivation to have an island that is plastic free, or at least that is not full of plastic, so as to improve tourism in their area so its about what they can make because they want to and also being happy to see that their little contribution they've made has meant they've

added something to start a sort of revolution to make their island plastic free. Its also their pride.

Marcel: I agree with that. You could add one trigger, thats the disaster with the MSC Zoe one year ago. That has more or less unleashed some of those ideas that were already there but often not so prominent because they wanted to make profit first and sometimes this is a cost factor they dont like that. But after the Zoe disaster some things changed - things became more prominent and more open that they should really tackle this plastic problem in the way Uche described. Being an island and having a kind of quality tourism anyhow, its very expensive. Its much more expensive to go to Terschelling than to go to Turkey. Right, so. And you can have three weeks of rain on Terschelling, well not anymore because climate is also changing. But in the past, you could go in for thousands of euros and sit in the rain for 3 weeks. And people still do it in great numbers, so thats interesting. And something thats new is what are you going to do post corona, so for a Living Lab, you have to include their motivation on what they want to move towards post corona, so do they want to go back to the old normal as soon as possible. Thats one option. Do they want to have a shift in the tourism on the island? Some already think its too crowded. Well you give the example of Oerol. Well this is a typical example of what is more or less getting too crowded. You have 55,000 people on the island in those 10 days. Thats crazy, in my opinion. But of course the entrepreneurs like that very much because they make a lot of money but they more or less see they are overpopulating their own island and they get a lot of stuff they dont want. So thats an open motivation for you. What will be their motivation for post corona? Do they want to change things, they now have the chance to change things because they will be in a difficult positon for at least a year, maybe 2 years. And now they have more steering opportunities now. This year they estimate a 60% reduction compared to last year (economically) so thats just the reality. It means a lot of companies will actually close down on the island. So whats the motivation? Will they save each other? Will the strong ones take over the weak ones? I dont know. I dont what a Living Lab could do in that situation. But if our Living Lab is about circularity and sustainability and that kind of coherence and resilience of the island, it could play a role in that future.

Rob: So in light of that and the corona situation, do you envisage that the Living Lab is going to change focus and should we have an economic survival focus instead of such a specific focus on reducing plastics in their operations. My original inkling was that it needs to be slightly broader and as you've said Marcel theyre not as motivated to be involved in something thats potentially costly....

Marcel: I think they'll be in survival mode anyway, I dont think we need the lab for that. Thats what their entrepreneur organisation does anyway. They're doing it already. They're fighting to get more money from the national government, thats already in play. So I dont think theres much added value for the Living Lab to help them in survival mode, because they're very good at doing that anyhow. But I think it would be good if the Lab helps them for the innovation modus. Because thats not their first focus but I think coming back to motivation, it could be a very good motivation to enter the Living Lab. So how to proceed after this crisis and you're right, they dont have so much money as they did before, so perhaps they dont like the costly part. But you can also do innovation in a low cost mode so thats for us to set up. There's no need. Its a bit of a story that innovation costs money, it shouldn't. It should deliver your money so that shouldn't be in the problem. So I'm not so interested in survival mode, but the innovation mode. And you're right, thats broader than

only circular plastics, that's true. We just had a discussion with someone else about what happens with the use of single use plastics and we will see a rise in that use because of the measures taken. So we will actually see in the coming time that we will have much more use of single use plastics.

Uche: yeah so that's the barrier point because the situation has changed. So when you talk about a Living Lab in a normal setting and one in times of crisis, innovation is of course always key its going to be there, it should be there. But the timing, when are they going to get out of survival mode, who's going to survive after all of this and then who is going to talk innovation. Is it costly innovation or is it innovation thats going to take little effort or money? A Living Lab is always the way to go but what will be the expectation from these people after this year and what kind of innovation will help to bring them onboard, not just in the short term but long term as well. I presume they'll take the long term perspective and not the shorter term. So if the Living Lab, and the innovation linked to that could be the key to doing that over the longer term, then I'm sure its something they'd like to embrace.

Marcel: Just some examples as I'm living here a lot. Take away of course is happening everywhere. But takeaway was already normal in the big city. It never happened here. You just had to go to restaurants and that was their business model and now suddenly they're all doing takeaway of course because at the moment it's their only option. So for a Living Lab, a question could be how does a sustainable takeaway system look after this crisis? Because why abolish it? You could keep on doing it. And how is it sustainable? Will it be a plastic takeaway system as it is now? If you get takeaway now, it's all plastic. But thats not necessary, you could also go to a paper based takeaway system, there's no problem of course. But thats completely new for them, no one did it before.

Rob: So leading on from the innovation part, what other researchers or key people from, maybe from NHL, could you see as being involved or having a stake in the Living Lab in the future.

Uche: A Living Lab, after some of the discussions with some of the others from our institution, there are plans for a Living Lab on a larger scale. There are larger organisations interested in sustainability. But we're more focused on circularity. So there are these two things but you can still narrow it down into specific areas. But it has to be tailored down to the actual needs of the people there. But for us design and the Circular Design Lab, and the things we're talking about like circular product development, related to plastics for instance, which is a very interesting topic. It's a very important topic, that should be part of such a Living Lab. But concerning sustainability, energy generation and use, water, salt water and energy generation. You can also talk about waste and plastics, not just waste in general, but plastic waste. So the circular design lab can play a very important role, not just in developing new products or alternative products to be made with existing plastic waste but also how this process of organizing the reduction of plastics can be done. There's already a lot of network built among people who are interested in reducing plastic use. What is the link, and what connections can we build? The (new) Living Lab and the Circular Design Lab will have to be an important part of it because its an important subject that has to be dealt with. And there is also the capacity and the interest to help them take care of the little little things related to plastic use and how to develop a system for plastic reduction where whats already being done can be put into use with the people involved.

Marcel: You asked for stakeholders I believe, but the topical part. But there are two more topical parts to add - nature and ecosystems. Its a nature2000 area. Im not sure if everything should be in the Living Lab but these are the important topics for the island. This ecological and nature thing is often connected to overtourism which looks at the capacity of the island so that you dont harm the natural system too much. Overtourism on an island, you can normally look at beds, how many hotels, holiday houses and campsites are there. Thats one topic and the other is probably travel. The central issue of an island is that you have to get there by boat usually. So thats very important for an island. Is the travel sustainable. And the tourists coming in, an interesting topic for a Living Lab is that normally you think tourists are coming on an island and they are only taking from the island and they pay for that. They pay for the nature, they pay for the quiet, the beach etc. Thats their way of taking, they take these qualities from the island. You could also say its not only taking but also giving. As a tourist coming to the island, you could have your own knowledge, your own expertise that you bring. You have your own network that your bring, that could also be a topic for a Living Lab. It's not only experts from NHL Stenden sitting there and thinking of new circular systems - you could also make room for the tourists to be there during their holiday participating in workshops, or giving workshops. You have all kinds of experts coming in - rich people coming to the island for the large part, which means they are in interesting jobs. This means they could share a lot with the island. That's an old idea we had in another workshop. What about giving and taking of the tourists? Are they paying for everything, or are they also paying in kind so to speak by the expertise and through the Living Lab. A Living Lab should ideally be situated to do that.

Rob: Is there a physical location that we could use, or could it be situated within the current tourism Living Lab as you've mentioned before?

Marcel: There are several options. As we are from NHL Stenden, we have an academy here on the island - our own academy. That is maritime - maritime studies. That means we have a location ourselves. Number one. That is not easy, it is full. But still, that's option one. The other option that comes back every two/three years here is, we have an old monument building. Its called the Tonenbouys. It's used for the repair of buoys in the old times. The water floating buoys. But now its empty. And there's a lot of discussion - there should be a museum in it, there should be a conference hall, there should be a cinema in it. It's a big building. So that's option two, but its very hard because its a monument and nothing is allowed there - you cannot change anything, thats always the problem of course. So thats number two. And the third option, if it's not in our academy or in this (building), the only other option could be in industry. There's only one industrial estate on the island, it's near to the harbour. And you have a lot of big half empty buildings there. I've seen a lot of things - you have some old timers cars just sitting there, parked there, so they're out of the rain. So that would be the third option, if you have room in the industrial estate. And for the rest, there is no room because everything is turned into holiday houses - every farm here is a holiday house. So as in every holiday destination, there's no room, everything's for tourism.

Uche: Of course ideally, you'd want to have a Living Lab for everything together but the reality on the ground whereby you have everyone together...you could also have an outstation where you say this Living Lab could be doing something similar can be in this location. But if its about tourism, its a little too broad and it doesnt matter, it doesnt have to be located next to the Living Lab, talking about energy. Of course there will be a link but a physical space...let's say you have other groups together in one building and then you have

maybe the tourism elsewhere. So if you need to have the influence of NHL stakeholders in tourism and want to be situated outside, you can still make that work.

Marcel: But you're right, it's very critical because as you understand real estate is very expensive on an island. Real estate is extremely expensive on an island. This is Amsterdam centre prices right. Its the same level as the centre of Amsterdam in terms of square meter price. So its really a bottle neck. Because everywhere you go you have to pay so much rent.

Rob: There's nothing that the Wadden municipality would sponsor so to speak?

Marcel: I don't think so, because we tried that. Well, you should be open and look at it from an open perspective because the...look yes its a possibility but you have to remember that this municipality is for 5000 people. So its a very small municipality. The only reason they still exist as a separate municipality is because in the summer they're suddenly 50,000 people. So then they need one government structure to deal with that. But their income is connected to the 5000 people. And of course they get extra money because of tourism tax, but that all goes to tourism. So if you ask the municipality, their first response is but yeah we are a very small municipality, we have no money for anything. Now again, that's my experience from a few years ago. But you should not be limited by that because logically, a municipality should, could be the one thinking about that so let's see what they say about this. And the other option is the entrepreneurs. Now of course they are in a bad position now. But in themselves, they are very rich, they all are millionaires here. Even the smaller ones because they make so much money. Now of course they complain and they ask the government to pay their, all their costs. But thats not the reality. Privately, they are very rich. Of course they take everything out of their businesses now, so they can go to the government for support. But privately they are extremely rich, they all have second and third houses in Ibiza and in, you know. So thats also an option that a few of the guys who really want to push this forward, some of the guys with private money.

Uche: Yeah that's also the thing, these businesses have been saving for a rainy day. And in tourism, they know that these things can always fluctuate and they know that these kind of things can always come up. So you always have a back up. There will always be a reason. So when things go back to normal they can recoup, and reinvest.

Marcel: I think from them, they're asking the government to solve this because everybody is more or less taking the opportunity to do that. But still their real financial situation is not bad at all. Again, they will start to invest from their own money. But now they're asking the government, As you can tell, I'm not really in favour of this. Those companies should already put their own money in instead of taxpayers money. But they don't, it's all taxpayers money that comes to the island for now. And once they see the opportunity for new business again ,they will put their own money back in it. That's what will happen. So I'm not so, I'm absolutely not negative about the prospects of specifically this this island, because they are extremely rich.

Rob: Okay, well, well. Well, it's kind of good news for the project in the end, I feel. Yeah.

Marcel: Yeah. But you have to get the money. That's difficult. No, no.

Rob: I mean, it seemed like the Jut Fabriek. Oh, yeah. Well, kind of potentially the you know, as one of the leading stakeholders and the most genuine in terms of sustainability issues, I was wondering if they would potentially push something on the on their property?

Marcel: You're right - together with Murell Juter. They are also a genuine, environmental, circular business. Jut Fabriek is just small, small thing. It's two guys. They're part time. They're both on their own. They are both sailing.:They're on big, big ships, both of them off shore, which means they have often on life - five weeks on the sea, five weeks at home, five weeks on the sea, five weeks at home. During that period that they are at home. They work on the Jut Fabriek - it's kind of a hobby thing. Which I think they do quite well, they are getting subsidy schemes and so on. So yes, they are genuine. They should be leading because they are very outspoken. They really want to push things ahead. And it could be a leading, small company. But again, they're very small.And it's a part time outfit at the moment.
Marcel: You can ask them. You can ask them to tell you. They will tell you what they say they want. If you look, I've been at a lab and that's still almost nothing compared to what we have in NHL Stenden. They have one off and on shredder, and that's it. That's how they work at the moment. But they are getting subsidy. So from after the summer, I think they decided to start in September, they will be able to invest more in their business.

Rob:Maybe it doesn't make sense if they're not there all the time, practically.

Marcel:It's a bit their problem. But I think if they grow, they will of course, get people who will be there - full time. But sometimes they are both on the sea and nothing happens for a few weeks because they are sailing.
They have other things to do for their families and so on as well.

Uche: But they are very enthusiastic guy in business, both of them. They're pretty much like that.

Marcel: And I think if they can see this business growing, you could even see that it will take more time in order to take staff who will be there. Yeah, that's no problem. So you're right that they could be good guys. Interesting. And of course Morel Juter - they're more an environmental organization, not so much an innovative organization right - getting rid of the rubbish on the beaches is what they do. But it's also a good partner in this living lab. They are well, they are the ones who really focus on sustainability and circularity. Yeah. Both of them. And the Horeca and hotels - it's just part of the bigger deal, of course.

Rob: Interesting. I have another kind of idea, but I don't know how realistic it is, but considering the there seems to be very much a....the businesses involved have an economic interest in being involved in a sustainability project. Right. They maybe see it is also part of conferring reputational benefits onto them. If they're seen as sustainable. Is the idea of a sort of plastic free to Terschelling logo viable, whereby the stakeholders involved could run with some kind of logo or stamp that says they're going plastic free?

Uche: I think it could be an idea, but then it depends on what would be the plan. I mean, the logo for you. What kind of products? You know. Is it a logo they would put on their products?

Rob: More even on the store fronts. Just stating that the going plastic for you, because I don't know if yet there was this idea of, you know, a logo saying we're working towards a plastic free Terschelling 2025.

Is it going to be stopped at the central place? These are things that have to do with certain products that are sold on the island, potentially future products?

Rob: But maybe I was thinking if I can design something that could go on on the store front or something, just stating that they're working towards a plastic free future. I mean, 2025 is the aim, right?

Uche: So like any information and communication to raise awareness, right?

Rob:

Uche: Right. Exactly. Then do it.

Rob: It's a potentially a way for more more of these stakeholders to think, oh, actually, I might be interested in being involved in it because I can get this, you know, I can get this logo from it. I can show my customers that I'm doing something good.

Yeah. Yeah, you could. I mean, it's a great idea.

Marcel I can connect to somebody who does the same in The Hague. So all the beach cafes there, they, they have such an initiative. Well it's kind of statements. They get a kind of pamphlet on their on their front door which states that they are plastic free. They, they have agreed to to do this and this and this and then the signature of somebody or whatever. So that's a kind of a plastic free logo. They have that already for two years now. And that's exactly the reason is exactly what you stated. They think they can attract customers who are interested in being more sustainable and who are bothered by all that plastic to seal the beach. And they think, OK, and I'll go to a beach restaurant where at least they are plastic free. Right. Instead of their neighbor who is not plastic free. And if you can get that thing rolling, then of course, everybody wants to, needs to join. That's what happened there. It's in Scherverting. And that's part of The Hague, let's say the the beach part of The Hague. And that's exactly what happened. Now, they all participate because of that, because first it was 18 out of 50. There are about 50 of those, those restaurants, cafes. And now they all participate because they thought I cannot stay behind because their customers will go to my neighbor.

Uche: No one wants to be left behind.

I guess there's always a problem with accreditation. You have to live up to the standards. So if you say that, then you actually have to do it, and somebody will check if you do it.

That's always the other side of it, of a logo or accreditation or whatever. It means you also have to set up a system where somebody checks it every year. That you actually still do it, that you still are allowed to to have that logo. It should not be for free in that sense, for free. You actually need to validate it then. That's no use.

Uche: Yeah, because then any other person can just copy it and put it on your own door.

Right. Yeah.

Uche: So if there is something behind the logo. Yeah. Which they will then have to live up to. It's a continuous process to keep your logo up. Those things that you promise is on, those things that are part of that logo. You know, checks and balances.

Marcel: And it cost money. So that means you have to pay for the logo. That's usually a system, of course. Yeah. You pay a certain amount to a foundation or whatever, and they check it every year. That's usually what you do and that should be independent, should not be an island group. That should be an independent group to actually checking that you are doing it the right way.

Rob: But in that sense. I mean, NHL could be seen as independent.

Yeah. Exactly. Not that the back side you have to check, then you have to ask the entrepreneurs. There are a lot of those logos already. And they're getting a little bit tired, there're at least five or six environmental logos already. And at some, some restaurants, you cannot even see the inside of the restaurant through the door because it's completely filled with logos. So you have to see if they're not tired about this because you see all in all sectors that they're a little bit over accredited over the last year. But you're right. If you have a living lab and you want to have initiative, it is it is a possibility for I would say for a limited amount of time. I would not make it a permanent logo, but the kind of action logo for, I should say, until 2025. And then you stop with it. Right. Then it should be done every day. You don't need a logo anymore to be plastic free. Everybody's plastic free.

Rob: What? What are the other current materials or alternatives are available right now that we could potentially that I can potentially put on a document and say. This is a good alternative to plastic or polymer polystyrene box that you're using for your takeaways - is there anything that we can immediately suggest to the stakeholders that they can use instead of. Plastic in their operations.

We're working on that. Actually, so we're making a guide guidelines for for as we as we define it 'before the counter'. So plastic free terraces and rooms and then 'behind the counter'. So plastic free operations and kitchens. And we're actually working on such a document, me and somebody else, a student assistant, that will be available by the time you are finished. So I would not go into that part. We'll we will deliver that.

Uche: We're looking at a situation now in place with covid and the rest of the things to find out what's in the guide or what. So you're not right. And it's only for this period. Right. For the period up to now. But you have to take there are different practices and things your friends are probably not known to account before you come for solutions, for alternatives as well. So there are lot as wherever where you can find so many alternatives here and there. But we will have to make, you know, a real division between in front and behind the counter. And you know we have to assess those materials or alternatives that are suggested that, can actually work, that can actually be used in this situation.

Marcel: And it's it's not that easy from, you know, economics are important. And so before the counter, so plastic free terraces is far more expensive. But because you simply don't offer certain things anymore, partly more expensive, usually because there's more handling

involved. You know, if you have reusable stuff, you have to take it back to the kitchen, clean it, et cetera et cetera, instead of single use, which you can throw away and you will hear from us. You will find that a lot of restaurants they focus on handling - the labor is the most is the most expensive part of their operations. So that's why there is such such a lot of single use, because it's yeah, it's cheaper for them to buy a single use compared to the handling that they have indicated, if not single use. But that's what they have to do. Right. That's that's simply a reality. And we'll see you in it this time how that works out. We'll have much more handling anyhow because of corona. Because you have less and less customers and much more handling per customer. That's clear. So they will earn far less money anyhow. So I don't think single use plastic is a big difference. I think, corona, that this is the limited number of customers coming off here is the biggest limitation. Not single use plastics.

Uche: And listen for the now, because if they have to survive with Single-Use Plastics, then they use them.

So that's why you make a division in that, corona and post corona, because that's the only way we can work at the moment. And that will be available. We'll have a crack there already. So practical stuff. I will send you something as an example from those beach restaurants. It can be very practical, very low, low, low threshold information. I will send you some stuff.

Rob: OK. And this idea of corona and post corona - should this be factored into the living lab? Should there be a structure within the document that I produce stating corona Post corona.

Marcel: I think it will be. Yeah, I think you get the same treatment now. Yeah. I mean, yeah. Yeah.

Uche: With the information that you're able to find at this point will also be limited with corona things. And I think it's good to. Yeah. Talk about corona and post corona because the content of the Living Lab has to take this into account because you need to ask yourself what is such a lovely, lovely thing to do. Yeah. That they're going to look at what does it mean to live in a lavina busy with something. Right. Yo, yo, yo, yo, yo. Coming up with solutions. Solutions for what? So does the situation, will it be affected the solution that is being created by the stakeholders on that thinking? Where's it going to land? It's going to land in the society's going to land where the people who are going to use it and who think that they are actually going to use it, but they're not going to do that without the reality of the time. And they're going to it will influence whatever decision on whatever you innervates whatever you're thinking. If you don't take into account the context of use, then you may not be practical. You will be making one of those are, you know, operated in one of those fictitious or imaginary living labs that will only create imaginary solutions.

Oh, yeah.

Uche: I can imagine we were discussing it in a meeting. I can imagine it's such a living lab. For instance, in the corona time, they will find solutions for how to dispose of your plastic waste in corona areas.

Marcel: Right. Which is a different system. And we were discussing it. You probably need a cooling down period. So normally you, you collect your waste and then you want to make something. The Jut Fabriek wants to make new products out of it, blah, blah, blah. Or it goes

to another system. But in corona time, you probably want to handle it a different way because you need to have a cool down period of at least three days before you can handle it again so that you are sure that there are no viruses on the on the waste materials. Now, that means you need a different system than the existing system. That can be a topic for such a living lab. Right. So I would it's not it's not automatically death. All the work now is Corona related. Only later you will start with non Corona topics. You you could mix them. So a division between corona, Post corona is perhaps too strong because she can already already work in a living lab on a sustainable solution for five years or, you know, with little steps in between steps. But at least you should mention it, that there will be a mix of Corona related topics and and other topics that come in one or two years.

Uche: Yeah. So content wise, there could be a division about what is possible. Now, what is the structure of the living in corona - on what it should deal with, whether or not or not is something different from the current structure.

Marcel: And also tourism in general. You know, so but even after corona, will it go back to normal? Or will we have different attitudes and different mechanisms? Right. Are we still shaking hands? Are we still close together in the, you know, in some of the hostels here you have big twelve, twelve or fifteen people dormitories. Will it be acceptable after even without corona. Will. Will that still be acceptable, though? Are we going to a new situation where we avoid these situations for new infections that are coming in in future years? Will, that simply no longer be the case? I don't know. But it can be typically innovation topics which go into into such a Living Lab.

Uche: I think it's got definitely going to change because the corona might not go away will have to learn how to how to do that. That means we have to adapt that the system and there needs to be change. They need to be adapted this way. They will have to come up with new solutions that they take into account the health and safety hygiene issues. And that's another thing.

Marcel: That's why it's not a topic set in terminals. You didn't go today yet yet. But there's a terminal in the mainland in Harling and there's a terminal on the island. Those are terminals who are designed to push big amounts of people in a very short time through the system. Right. That might not be possible anymore. So you might want to design a completely new terminal on both sides. That's typically a topic for such a living lab. That's very multidisciplinary. It's about safety. It's about contact. It's about the economy. You know, it's about everything. I can't imagine that you need that kind of that kind of projects. Public transport on the islands now. Buses, very, very, you know, always very full buses because they're connected to the to the ferry. So the buses are either completely empty during the day or completely full when their ferry arrives. That's no longer acceptable in a new situation. So you need a different public transport system on the islands. Completely different topic now. So I can imagine such a living lab, it's not only about circularity, it can be about all kinds of sustainable and societal innovations. And I think you should have the focus. Right. But let's not be too limited in this. You know, and if you want to start something after a focus, you cannot start a world - a global institute on the island, which concerns itself with everything is not possible. So it is good to have a focus on circular and sustainable, but at least to have already in the setup phase that you acknowledge that there are many more topics which are also interesting for living lab situations.

Uche: But then you will have to have good arguments while this is an important issue. So circularity because it started before the corona and everything, but it's not something that is going to hopefully will not stop. Especially when we don't know that when the corona situation is gone.

And so how do we go about this topic, which the people have seen as an important topic, even though this is not going to go away?

Rob: But then, you know, would you imagine then that businesses would come together and sort of ideate, so to speak, on their ideas for sustainable transport? Or was it is it just purely to acknowledge that this could be a direction that the Living Lab could go?

It should be ideation from the businesses. But the thing is, they are not used to do that in an open innovation environment. They are used to do that for themselves. You can ask any entrepreneur here and he will say he constantly goes through an ideation process for his own business. But they're not used to share. They're not used to it, you know, because they're all competitors. Right. It's very simple. So they're very used to keep it in their own in their own interests. And a living lab is typically where you where you focus on the areas which are non-competitive or pre-competitive, of course.

And then you want them to join because it should be solutions that they can apply. It should be their ideation. But I don't think the living lab should be on individual solutions. That's their own job. And they can hire a consultant for that. That's normal. You know, they used to do that. So this should be pre or not competitive. I think that's the only way I can see for a Living Lab to work.

Uche: But it gives a guide direction for them. What exactly are they out there? Your business is your business. Yeah. Generally there are issues for more or less everybody for things on the island that is affecting your business. Like for the collective good of everybody. They talk about it generally. But then if you still want to do a lot, much more related to your own business than your own business case to live on, take it to another are.

Marcel: Sure and if the Jut Fabriek is successful - now they get their waste for free from the companies. If those companies see that Jut Fabriek is making profit, at some point they're going to ask money for their waste. Right. That's the normal. These are the normal economic systems that will work. I don't think that in my opinion. But that's that's an quite explicit opinion. Living lab should not be for that. But some people will say Living Life is a commercial organization. They act more as a as a consultant, so to speak. So they come in and they ask money from there, for their solutions. I think a living lab is should be paid by public money and by contributions from the from the entrepreneurs, but not contributions related to output. Just general contributions. They put in because they value the existence of a Living Lab, their islands, and that as soon as it becomes competitive, then they're letting a lapse - it should stop working. And then it's up to the entrepreneur and the designers and the consultants and whoever is there to to make it their own solution. Well, that's it. That's an opinion, because I know a lot of people will see it as a commercial activity. So that's up to you Rob to see what's there, where the interest is.

Rob: But then in that sense, you can also have a commercial interest, which is common, right?

Yeah. Yeah, sure, sure. That's how commercial interest of the of the island. Yeah. Yeah, sure. You're right there. So like this public transport thing and the terminal that we're talking about, there's a common interest of course. And also a circular system for plastics. Right, the whole system to get to the staff and to to bring it somewhere. That's also a common interest, of course. It's almost a public function of course. But you are from the U.K., you have privatized everything. We still have public functions here.

Rob: Yeah, yeah. No, we're not in a good state.

Uche: How much more time?

Rob: Yeah, well, this is this is the hour taking off and I don't take up too much more of your time.

Something.

Yeah, well, I mean, you just just go through a couple and so. Living up to the document.

For me, it seems to be that I would make a slightly broader and I'll still have this time frame. I now have ideas for locations that I have sort of current and post-colonial, at least catering for. I have more of a focus on catering for their current needs, which is what you both stated, which is key. And the idea, again, of sustainable transport, which is really interesting. So thank you.

Uche: Yes, but there are also issues, really. I don't know if you already checked out. Of course, you know, you have to focus, like you said, first, bring into account all the defense areas that could be interests or what about energy related issues?

Marcel: But we don't go into debt now. But there is an energy plan for the island. This should be self self-sustained in 2025 on energy.

They have quite some money for debt and it's quite an organization already. So. But perhaps a lot of the other people who know more about that can help you with this. It's a choice where take it taking energy or not, more or less, because it's already happening and it's not so difficult on an island. They will do this.

Solar panels, a lot, lot extra. And then they become a kind of electrical you know, they let the public transport is already electrical completely. So the only thing they have to change is the private cars coming on the island, which can be anything, of course, that you could take measures by making that very much more expensive to have a non electric car on the island and then within a few years you only have electric cars on the island. You should check, but a lot is happening already. But maybe not.

End of interview. (Marcel and Uche interview , Pos. 1-90)

Akke Folmer

So thank you so much for joining.

My first question is, can you explain your job title and your area of expertise?

Akke: Yeah. OK. My name is Akke Folmer, I'm a research lecturer at NHL Stenden Tourism Management - Academy of Leisure and Tourism and I work for the European Tourism Futures Institute as a researcher and also for some different research groups, I think in this case, Marine Wetland studies is most relevant. But I also work for the sustainable innovations in the regional knowledge Economy Research Group. And I'm already since 2009, the coordinator of sustainability at tourism management. So that's why I'm also involved in this, in this living lab from Terschelling, because I work for marine wetlands studies who are also connected with the Wadden union. And in this case, also the Wadden free plastic society. I think it's a new organisation. And yeah, and I'm also a sustainability co-ordinator. It was initiated that all the tourism management programs in the Netherlands signs the international tourism plastic pledge. Yeah, it was organized from the NVO from the Netherlands NVO is corporate social responsibility, so big organizations in the Netherlands and they have the tourism group and this group organize the national tourism plastic pledge for all the tourism organizations in the Netherlands to sign that they will do everything they can to reduce plastics growth. So that's sort of yeah, that's a short introduction. My job is a lot about sustainability - so sustainable tourism is everywhere in my job, actually.

Rob: So we'll stick. We'll stick with your area of expertise. And considering the businesses that are involved potentially in this living lab. What do you perceive their motivations to be, to be involved in a living lab that's based around sustainability, especially considering corona times? Why? Why, why would they be in this? Why would they want to be involved in the sustainable living lab?

Akke: Yeah, I think actually the Corona crisis has... Yeah, given us more time to reflect on the current situation and it was getting out of hand, the whole situation, especially in tourism, it was really getting out of hand with mass tourism over tourism and of course, the waste problem associated with that. And the big social impacts of tourism. So actually, I think right now a lot of tourism destinations are trying to reinvent themselves. Like, how do we want to get out of this? And most destinations are saying, well, we want to do it differently. We don't want to just continue the way it was. And so, yeah, they're now making a lot of plans, like, what do we want? Then what kind of future do we want? And I also work for the European Tourism Futures Institute and we developed four scenarios for the future. Without giving a judgment on which one is the best one. But one of the four scenarios, is business as usual. So just going on the way we are doing now. And yeah, that this of course, if we don't make any plans that will happen, probably that the companies will just yeah - trying to attract tourists again. And so we're just trying to maximize profits again. And then before you know it, we're back to where we were. But we also see that there are now opportunities to choose to make different choices. So it's a good idea now to look at what do we want, what in five or 10 years, what is the ideal future. And I think in Friesland they're thinking of more quality tourism. So higher quality tourism, less tourists and more the types of tourists who are interested in nature, landscape, culture. Yes. So that is sort of the direction they they are looking at now.

Rob: OK. That's really, really interesting. And so on that point then, do you see such a specific living lab in the area of plastics as being too specific? Could we potentially make a living lab that's more based around like the triple bottom line. More broader sustainability. Do you think the idea has to change slightly now then?

Akke: I think for this living lab, I would also think that we should focus on the sustainable development goals as the basics. Because yes that's really thought over. It's really been developed quite a long time. And I think it started with 12 goals. And now we have 17 goals. But that really includes all the different dilemmas and aspects. And you'll always have dilemmas, of course, because you have no poverty or zero poverty hunger and of course, sustainable production and consumption.

But, yeah, there are already dilemmas in it. And it's because people also need income. They need to get money from different sources. And I'm always talking about tourism. And then you get dilemmas like how can you make money, but also think about the ecological limits of the Wadden islands, for instance. So. Yeah. And also with the waste - you want the tourists there. But you also want yeah, that there is no waste. So these are really good dilemmas I think for for a living lab to work with. Because you always have these tensions between these different goals as well. But in the end, you want to achieve all of them. So yeah. If you think about transportation as well, of course on the islands you can think of. Yeah. All these buses that are driving around. And so. Yeah. Do you want that or do you want maybe more electrical transportation? I think right now, because tourism is sort of standing still right now - you can see it's time to invest in things like this as well.

Rob: Maybe this this is a this is an interesting one? What other of the research groups or - we've got the circular design lab that can be involved with the living lab. But how do you think the current tourism living lab could fit in with this plastic's living lab? Do you think these two things could be combined in a certain way?

Akke: Yeah. I don't know if you heard about it, but I did a project with Marcel Crul and Ucheche Obinna. Yeah. So we did a project together. And the student from tourism management did interviews with different stakeholders on the islands of Terschelling to see what kind of plastics we're using now and also to get some ideas about that like how can we improve it? And I think that is the first project but I think we can work really well together with the plastic recycling lab (proposed Living Lab) because there are the students who are looking at the tourism sector and the management side of it.

Rob: Yeah. And is the tourism living lab - is there a physical location?

Akke: No we don't have a physical location. We have the TCF, so the tourism alliance Friesland. And the TCF that's more, yeah that's more so the companies can actually have a question, a problem and they put it there, you know, like a forum. And then we can look at this list of problems and questions. And then we say, yeah these are suitable for our students like. Yeah. At this moment they're doing product innovations, the students, total product interventions. And I looked at the list that there was and I got two camp sites out of this list who were both looking for students who could research how you get new target groups interested for the camp site. So while I thought, oh, that's interesting for product innovation. So they the students are now working on product innovation for these two camp sites to see. Yeah. Especially now in the corona times - how can we attract new target groups.

Rob: Well that leads nicely into the next area. How do you think we can attract more businesses? Because a few businesses have dropped out of this living lab because of current corona times. But how do you feel we can attract more? Is it through this innovation focus?

Akke: Yeah, I think I think focusing on the innovations is very important for the living lab. Because I think that's when tourism companies find it more interesting that its students look at - they look differently at the problems. So when they need an out of the box idea or just a different perspective on their problem, then I think this Living Lab would really contribute to that. And I work also for a research group, sustainable innovations in the regional knowledge economy. And we we tried to put entrepreneurs together as well because they also can learn from each other and then they get also more ideas. And I think especially now into corona times, they need schools. There are a lot of companies in big problems right now. And they really can't do anything. They are trying to survive. You can't really get them involved right now, but I think yeah. After a while they will they will come back. I hope. It's also a lot of companies. I also showed that to some hotel restaurants that are also in problems right now. But they they do want to work together. So for exactly the same reason, one company said, no, I want to stop. And the other one says, yes, I want to do the project together with students, to get new ideas. So it's also a mental attitude. So, yeah, I think if even if you start with a small group of entrepreneurs. Yeah. It's good because you start with this small group and then you can

show to the others as well what the students can do. And yeah the students really. Yeah. Really get nice ideas. And what we have so far is that the companies really tell you that a lot. So I think. Yeah. Even if this Living Lab starts as a pilot, with only a few companies. That's fine.

Rob: I think they will see that benefits eventually. Yeah.

And then we have, of course, the tourism together with the recycling people. And then you have transportation. That's again, something for tourism together with traffic or I think they have a traffic program here at NHL Stenden as well. And, of course, also between different schools like university campus Fryslan, maybe. So you have also the different levels that are possible. So the masters students together with the bachelor students and the. And also the MBO students again.

Rob: It sounds like you have some really well, you're really well connected and have a great network. I might email you at a later date to see if I can tap into this, but no. That's great. Thank you for that.

Akke: And I think you can also see the Living Lab as a learning network of companies that want to learn from each other and from the students. It's not only students learning from the companies, but also the other way around. So.

Rob: Totally agree. And on that note, do you think that the living lab could also involve the tourists themselves? Yeah, yeah. That would be nice, too.

Akke: Yes. Yeah. Excellent.

Rob: What do you think then, a good starting point for the living lab could be? Should I? Should I focus then on explaining the SDGs, to the entrepreneurs? Should I go from a people planet profit perspective? I kind of need a guiding theme.

Akke: Yeah, what you hear now is that the people profit planet model is trying to minimize the impacts and looks at balancing. And actually, I think the whole sustainability discussion has gone from there to a new approach, this donut approach. But that's probably more complicated for them. It's more the idea that not only am I minimizing impact, but also improving the situation. So that's why I think the innovation is really interesting to focus on - that the living lab is like a sort of, yeah, a breeding ground for innovation where they can work together with students and teachers and other people, governments as well, and companies that they can work together on these problems. And that's that's when you get to innovations and then these innovations yeah, they they can work on these sustainability goals, of course. And I think maybe if you promoted that more from the innovation side. That's maybe more interesting for companies. I think this sustainable development is, of course, the bottom line kind of thing. It should be a sustainable because if you just focus on the short term, then in a few years you have problems again.

Rob: Yeah. No, definitely. And what are your experiences of working with local councils specifically Wadden municipality. Do you think they have a role to play here?

Akke: Yeah, well, the project that we did, they were also involved, but more as a facilitator. So they. Yeah, I think that's more their role that they facilitate. Yeah, they give a room, you can have a meeting all day or they put together certain people. Yeah, they they just help. Help the others. They give the limitations for certain things, but I don't think you should start with the limitations, so. First thing, think freely about all kinds of innovations and then the council can say, oh, well, there's just too much or not possible on face of it, transportation as well. I think your first test is to start. Creating ideas differently. That's what they are. Yeah, I see them more as facilitators in this. Yeah, well, you see at the moment as well with that they are thinking of really creative ideas because the ferries to the Wadden islands is now the bottleneck because the, all the houses are booked full of the people who

can't get to the islands and the ferries only have 30, 40 percent of their capacity. So people can't go. And now the brown fleets, you know, the sailing boats. They offered their help. They said we can also bring people to the islands. And it's a very sustainable transportation. And it's nostalgic, cultural and historical. So tourists would love it. But, of course, there's a law saying, no, it's not possible. So now the councils have to give a sort of emergency law. That they say this is allowed for this summer. Well, I think that's that's the role of the government. I think that they see this innovation and this idea to solve this problem. And if it's a good idea like this is just a sustainable way of, you sail over the sea. And it's also a nice experience. So then I think they will probably say, OK, yes, it's allowed. And it's a nice new thing.

Rob: But it's really interesting because the major role reversal of sustainable entrepreneurs is often to lobby and to help to facilitate changing laws in order to get what's needed, because laws are in the way, as you've just said.

Rob: And it does not seem as it seems like it might fit in well to this new higher end tourism that Terschelling's aiming for.

Akke: Yeah, I agree. Yeah. It fits very well. Yeah. It takes a lot more time. It takes four hours to sail to the islands. Yeah. You have this fast ferry that's only I think one and a half hour. But but this sailing ships, it takes four hours. So it's really a part of your holiday.

Rob: But then would you think that we would need a coordinator that acts as the bridge between the living lab, the ideas and the municipality? Is that necessary?

Akke: Yeah, I think it will be it will be handy to have a coordinator ah, yeah, someone that's the thinking pin.

Rob: Yeah, it seems like some laws will potentially have to change.

Akke: And yeah, I think you'll have quite a lot of different stakeholders and potentially, you know, somewhere this. Yeah. Because I think that was also the idea to involve the Marine Institute. So they are involved. And then, of course, the circular plastics and open innovations and tourism management. Yeah. I think. There are more possibilities. Hospitality management. Yeah, not lots of different educations, at least.

Rob: So maybe I've just got a couple more ideas to run past you. I thought about making a plastic free to shelling, sort of a plastic free to shelling logo all and working towards a plastic free future for the stakeholders. If they could prove year by year that they were working towards or were operating out of plastic free level, we could then give them this logo, so. Yeah. Do you think this is a good idea? Is this a bit gimmicky? What do you think?

Now, it's maybe a bit gimmicky, but on the other hand, it shows it really shows the tourists and that yeah a lot of people they are doing this. It's raising awareness as well. So, yeah, I think would be a good idea if you have a sticker on the door. I don't know what's it will be like but yeah. I think it's also nice for the tourists that they see this and then it will be more alive, I guess.

Rob: I'm just realizing there's a slight irony in that the sticker will be plastic.

Akke: I was thinking that as well. The sticker is not a good idea. It was my I thought of a sticker. That was the first thing I thought. Yeah. Yeah. Okay. Yeah. Got to show it somehow.

Rob: Okay, then. No, too much time left alone. Gonna keep you for too long. But the other thing I would like to maybe ask is, what was your knowledge of potential locations on the island? Because the idea at the moment is that it will be a physical location.

Okay. Yeah. Or at least they can come together.

Akke: I've heard that the NHL stenden place like where the Marine Institute exists and they offer some space. And I think that's a good idea that you can also have. Yeah, if you do a project for a hotel, then I think it can also be at this hotel. So I don't think the living lab necessarily has to be in one location. It is also a good idea to work at the location of the entrepreneurs. The part of the time show. Yeah. I would not say OK, one place, but. Yeah, yeah.

Be more flexible, if that's okay. That's great. It can move around from four different stakeholders, one could take it monthly. This could be the system.

Rob: Maybe we can make this really open ended and just say, what are your general tips for this plastics living lab? Should I have a broader focus? Are you focusing now on the plastic frame?

Akke: Yeah. Because you have our idea from from tourism management is that the living lab is much more about sustainable tourism for us. And then it can be on different aspects. Because I also heard that, yes. Transportation is also a big issue. And yeah, I think also the notion of climate change is quite a big thing on the islands. So they are changing the landscape actually to to be better prepared for rising sea levels. And so now I'm doing research on the bonds between the local people and the nature of the landscape and then see if we can use this also in tourism as well, sort of, yeah, nature education or something like that, so I think for us, for tourism, it's more than the plastic. I think, yeah, I see it more as a holistic thing that you try to be more sustainable in the different aspects.

Rob: And so maybe you then finally, do you feel that the corona virus situation is is an opportunity for sustainability on Terschelling? Or is it is it a barrier towards achieving greater sustainability?

Akke I like to see it as an opportunity, of course. Yeah, because people have to think of new new ways to deal with it. And you have to you have to have this social distancing thing. So, yeah, we have to come up with ideas for that. And I think, yeah, we also want to get out better than we actually when we came in. And I see it as a little bit like we crashed, especially in tourism. Yeah. It's now zero. Almost. And of course for a lot of companies it's a really big problem. But then I think for educational institutes and governments, it's our role to yeah, to think ahead and to, to help them somehow and work on the future that is better for everyone. So, yeah, that's what I think.

Rob: I totally agree. Yeah, no, that's correct. Wonderful. Yeah. As I said, I don't keep you too long and thank you very much for doing this (Akke Folmer, Pos. 1-43)

Marije Boonstra

Rob: Hello, Marije. If you could just briefly outline your area of expertise and maybe your job at NHL for me.

Marije: Yeah, I'm an open innovation researcher and I'm working on two projects. One is about festivals as Living Labs and it's a little bit ironic that during the corona crisis. And that's more about how to test and experiment at festivals. And the other project is about the development of a biodegradable festival cup. So it's more and more looking into the innovation processes. So not so much my expertise - my background is in psychology and in cultural media studies and media studies at Utrecht university. So it's not very technical - more like looking at processes and also the engagement of people.

Rob: So, yeah, that's really interesting. So I have three areas I want to go through and look at with the general aim for this living lab, what it should be in corona times, the networks that can be involved. And then maybe we look at your expertise more specifically. So innovation at festivals and your experience of that and how we can incorporate that into this Living Lab. So maybe if we start with general aim - my original aim for the living lab was that there was a plastic free living lab. How do you perceive that can or should maybe change in corona times? Should the aim of this living now be adapted?

Marije: Well, I can imagine. I think this is also a question that is interesting to discuss with the entrepreneurs themselves. But of course, you can always - because I think plastic free was specifically maybe targeted, targeted on a single use plastic. So I think you could also - there are also a lot of single use alternatives to plastic. So maybe you can reframe it by not plastic free, but by single use of alternatives or something like that.

I know you also have these plates made out of leaves. And you also have Cosun - the sugar factory and they develop all these kinds of kinds of new applications of organic plastic. So and that's, of course, it's still kind of an intense process to make these kinds of alternative plastics, still plastics. But they they dissolve into water. But maybe this could also be a chance to get the alternative production of plastics and plastics and designs and applications a boost. But I think it's because it does really change. And also the living lab perspective is really about collaboration and co creation and and shared making. I think it's also a question that you could said that it's interesting to discuss with the entrepreneurs and maybe you can kind of tweak that. So these are scenarios that we could go and then discuss about the possibilities.

Rob: Do you think that there can also be a need for more of a general living lab. That's not just based on - behind the counter, in front of the counter, but general sort of sustainability on Terschelling? Do you think they that they could benefit or that there could be a need for a living lab on transport sustainable for example, as well as reducing single use plastic. How would you see this working?

Marije: Well, I think. It depends, because if you take too many things, then sometimes you will end up with a lack of focus, though. And especially according. I know a lot more from theory than from practice, actually, because I read about it, about sustainability. But what I

know is that it's that you really have to work purposefully. And if you diffuse it into more and more different topics, then either you should choose to also have different problem owners that really are the owner of the problem of the new topic and then work on it on the long term. Or you should just go with one specific topic. And also half like because it works very well if you have certain targets in the schedule.

So I think if if you want to broaden it too much, then it might. Yeah, I think it's good to be adaptable, to adapt, to be flexible in the project and to change - change your perspective, because it might make less sense to go for plastic free, while single use plastic at this point is very much promoted that maybe you can change from plastic free to single use alternatives or something like that.

Rob: Interesting. That's really nice. Yeah. Really. So it's just a really good perspective to have on this.

Rob: Maybe let's move on to the festival topic. So what's your experience of open innovation at festivals and how could a living lab be involved in this potentially? I mean, we have the Oerol festival on Terschelling. I've been in contact with them a little bit about next year. But how does open innovation within a festival setting work? Can you just give your general experience?

Marije: Yeah, well, actually, that an interesting question because there are many forms that you can do innovation at festivals. But it's it really depends also on the amount of time you invest. For example, you can really organize a summer school or something or like a long program around a certain team. And then it's like a good investment of time in the organization. But you can also do like smaller experiments. So the festival itself as a living lab context or experimenting.

Marije: But also for - if you have a certain theme, you can also build a little program around it or do or do a tour, for example. And I don't know if Oerol - the people who are organizing it and also the Horeca. I don't know if they're from the island. If they are from the island then it would be a very nice way to experiment if you go for a different theme within the project, then you could use Oerol to see if the new alternatives work. And so we evaluate them and ask people, because the people at the festival are more open to new experiences and also open to mistakes. So if things go wrong or if it doesn't work, then it's not a huge, it's not a big deal because the setting is more relaxed and could be if you want, I can share it. A colleague and I am writing a book about setting up a festival at living lab that might be really interesting for you. I could share with you. And it would be great, if you could give your input and reflections on them.

Rob: Well, I'd love to be involved.

Marije: There are many options how you can well, more in a general way we describe the different options how you can build a festival experiment.

Rob: That's great, I've had some positive feedback from Oerol Festival, and they're saying that next year, if it does go ahead, they'd like to be involved in some kind of living lab. I'm quite positive about that.

Marije: How long is your masters?

Rob: It's one, but I'm planning on being involved in this project over a slightly longer period just so that I'm my foot in the door with sustainability. It's kind of hard to get a job. And I think that seeing this project through to the end will be good for my CV. I at least plan on being on board for a longer period than just my the completion of my masters.

Rob: Cool. That's great. So maybe. So this could be interesting. It kind of follows on from the first one. But how do you think we should appeal to a wider group of stakeholders at the moment, there are very few - like four or five businesses at the moment who want to be involved in the Living Lab. But how can we make this attractive to a wider group?

Marije: Did you invite the people and they didn't come?

Rob: I didn't, no, it's more that the sort of project leader, Marcel Crul - he's in contact with the stakeholders directly. And then since corona, a lot of them have said we can't do this right now. So that's why this is kind of like a longitudinal thing. I'm trying to set it up so that I'll make a document for them. I can present to them and say we'll start this year, 2021 in the summer.

Marije: I think when I take a project more from a learning theory, then I would say that it would be interesting to build like a community of practice. Around different themes. So it should be interesting. So I'd say they should have an ambition or learning goal. And that's, of course, the intrinsic or extrinsic. Yeah. So it could be like there should be an incentive for them. So I can imagine. I don't know if. Actually. When I noticed myself, I think personal contact, so like a personal conversation and listen to people. So what you do now? That would be interesting to do with the entrepreneurs on Terschelling. To hear and hear their story and then come back to them and say, OK. So what? What do you need? What do you want and what is your own ambition?

Rob: So the motivation from the entrepreneurs themselves.

Marije: Yeah. I think really create a network. So if people want to be there, not only because of the content, not only about what you discuss, but also because they can, again, speak to their very nice colleague here on the other side of the island. They never speak to but once in a month during the Living Lab. Something like that. You make it very nice way. Very nice experience for them. They can really have their own ideas that they can develop. So they can they can have maybe their own goal that they want to achieve. And then they can collaborate and really learn from and from the network. Well, maybe a very good facilitator. I think a good facilitator is - yes, that is always a challenge. It's always a challenge to really facilitate and really network.

Rob: Is that what the main role of a Living Lab is - as a network provider. That's what's written in theory and academics that it is a network provider. Is that the main goal for this Living Lab, as a network or should it have an open innovation platform?

Marije: I think it's a combination of facilitating the network and facilitate the long term focus and agenda. And that that one is bottom up. So it's I think it's not if you really if you want to. I don't have, like, a huge experience in living lab creation or something, but I can imagine that if you, as an organizer, decide on what to do. But if you as an organiser decide what to do - there's less ownership. I think ownership is very important. Ownership and intrinsic motivation.

Rob: Maybe we can come back to your experience of open innovation. You mentioned this. Could you describe the festival cup and the innovation, the process that went behind this innovation? Were you collaborating with students? Did you have a network of scientists that were involved?

Marije: Well, that's that's the first thing that I only I'm in this position for a year and the cup already developed earlier or right now. Actually, I made a documentary about this, specifically that process about them. But it's too long, to watch, too.

Rob: You know, again, if you could send it over, would be really interesting to at least with.

Marije: I don't know if it's too long - maybe it is just I can share it with you. It's been a lot. We are still looking how to publish it because it's now, of course, corona time. So we have to think about it a bit. It's a little bit of a dry documentary because it's not about a very fancy topic or something. But it is about that process. And then actually that process is like a real collaboration between all these different stakeholders. So you have someone who came with the idea, a social designer, sustainable designer. Who wants to do this. Then she found a producer who wanted to make the cup and also he wants to be the owner of the cup. And then you have these research institutes that help to evaluate which kind of resource should be used to develop the plastic because it's a special type of plastic - PHA. And at this moment, PHA is imported from China. So they were evaluating what would be alternative options. And one of the options is to use waste streams because you have all these different stakeholders that collaborate, but they don't always know each other. Because, for example, the plastic itself, we don't know the stakeholders behind it because they are from Asia. They make the plastic. So it's but it would be interesting to have local stakeholders. So, for example, therefore, I referred to Cosun that is a plastic producer in the Netherlands. But they are still in the recent development phase because, of course, the production of materials is, especially if you do it in a Western country. I think it's a very expensive endeavour.

Rob: That's sort of interesting. And more on this then - just to see so what other networks can you think of in Friesland, apart from maybe Cosun that could be useful for this Living Lab?

Marije: Maybe maybe it would be interesting, too...the project leader or the initiator of the Biocup - she's called Eilleen Blackmoor. I believe she has quite a big network of designers

and people who make things because maybe you. Of course, it depends on the question of the entrepreneurs, which way they want to go. Although I can imagine you have specific targets you want.

Rob: Well, the original target is this reduction in single use plastics.

Marije: Oh, it's a Limm - the organization that makes these cups also this. And they produce and they can use it like 200 times or maybe even more. And when you don't use it, when you use it - it dissolves in water. So it's interesting. So maybe it's interesting, but it's called limm recycling. And I can give you contact with Timo - the manager. You know, he's from that organization. And they also work together with universities and governments, local governments, because they have these single use cups and they take it back and then they give it as credit and they crush it into little pieces and then recycle it.

Rob: Is that done locally?

That's done locally and could be, in Friesland, this could be very interesting for you, to be connected to the entrepreneurs.

Rob: That's really interesting, if you could pass on - any of these contacts are greatly appreciated.

Marije: It would be interesting, but I don't. I don't. I only called them once. I think it would be interesting to speak to the research and development lady of Cosum. But they are there - that's more about a resource, so there should be like something in between. But maybe she knows people who already make company or products.

Rob: Yes. And from what I've heard so far is I think the entrepreneurs involved will still be interested in the process. It's not like we need to give them an end product. But to be involved in the open innovation process is still beneficial for them if they see something at the end of it. So.

Rob: And then maybe I had a couple more ideas.

Rob: One was using in a similar fashion to how you have innovation at festivals - using tourists to give input as part of the Living Lab. Is that something that can work?

Definitely. Yeah. Yeah. You can, for example, at festivals day, they organized like they can, for example, construct something where people can leave notes or ideas or maybe - do you know if you speak about plastic free, you, of course, have these initiatives that people can collect plastics from the beaches. I think it's good to have some communication on what you're doing and also what purposes you want to. And then have the. It's very and also, yeah, it's it's very good because, for example. Yes, you should you should definitely do that. That's. That's a very good idea to make a group. For example, if you use alternatives to single use plastics, for example, the biocup I was talking about. It has a different feel and different materials. So for some people, it might be not very appealing because you can't you can't

trade. But then if they have the story, they are engaged and people feel more connected. So we would do this for a good purpose. So that's. And of course, all the visitors you don't know - there's a lot of multidisciplinary, multidisciplinary - there are probably, there are so many people visiting. So they'll have their own perspective on certain topics. So it's really good to collect that information in the very low key way.

Rob: It's really encouraging.

Marije: Yeah, well, I did have that in mind and then I didn't say it.

Rob: I mean, it was just something that someone else brought up and thought is a good idea, and you seem to be an expert in that kind of area. I'm really glad to have it ticked off by you.

Marije: I actually, I had it in my mind when I decided I was thinking, OK, what should I do? What can I suggest here? It's a great idea.

Rob: That's perfect. Thank you for taking the time to be involved in my project.

End of interview. (Marije interview, Pos. 1-47)

Peter Joore

Notes from first section

Peter stated he's from NHL Stenden, University of Applied Sciences. He did his Phd at Delft university and his focus has previously been practical side of the design and innovation process. This background at universities of applied sciences differs to that of rug in that the rug is a research university. He states that 'designers' are often seen by researchers as being too focused on the product they're developing, thereby not affecting change more broadly. Researchers, who look at the process behind change are then criticized for not offering practical ways to realise change 'on the ground'. He enjoys his position as someone who sits in between a designer and researcher as

Research has been done on Micro, Meso, Macro level of niche innovations. Peter's work looked at developing this further into the four systems levels in the MDM.

He talked about his Phd and the development of the MDM. The MDM has a chicken and egg problem - related to the designer and the 'politician'. Where do changes come from? Do they start with the designer on a niche level of experiments or do they start with the 'politician' who gives insights into how we can affect and change the process behind innovation? He states that designers are criticized for the small changes ie product development at the niche level that may not have such a great influence on the overall product-system, or societal system (which is ultimately what we want to influence). Then the politicians are criticized for having little influence over concrete changes in products - and are then also seen to be ineffectual (possible repetition from above). This idea of change was related to the original car - the Ford model T. As the product-service systems around the original product adapt to suit this new product, the variety and number of new cars subsequently increased - a product niche that influenced change higher up the systems hierarchy, and then disseminated back down this hierarchy to encourage and support new products (in this case new cars).

I asked whether the MDM is a practical tool, but he stated that it's more of a reflection tool to analyze the process - on what level of the hierarchy does the problem you're looking at exist and how can a designer influence the process? The MDM will help the designer to visualize where the problem lies and what systems are needed to innovate the change.

Transcribed interview section

Rob: How should I conceptualize this Living Lab - should it be a tool to affect change higher up the systems hierarchy?

Well sometimes there's policy developments that offer opportunities for companies that you didn't know. On the other hand, sometimes there's technological developments that the policy people don't know. And one example is the LED lights where sometimes you need small niche players to prove something is possible before the big players are willing to step in. So it's not bottom up or top down with it, but at the same time and that is why I think the living lab concept is interesting, because you can be pretty focused, can meet each other and then create chaos and hopefully some interesting results. So you should have been the one to create chaos if corona would not have hindered you.

You know, there's enough chaos was there as it is. And then so maybe one more question. How should the living lab presented to the stakeholders? Is it through this learning and problem-solving idea? Are they interested? Do you think, from your experience are stakeholders interested in the idea

of learning and problem-solving, or do they need more motivation such as a reward that they know will come out of this?

One of the interesting lessons from the Samsø island project is that they really found a way to involve the local community and this was like the core of their success. And the well-known example is the use of windmills. Everybody opposes this because they said they're ugly, they make noise. People don't want them. But what they did on Samsø is that they made the citizens, they enabled them to participate in the windmills and earn money.

And certainly the perspective changed because now the windmill was not an ugly thing that made noise. But if the wheels were turning, they made money. So they suddenly saw something completely different and they were very enthusiastic and just getting the community involved in a project - at least in Denmark, it also has to do with the culture of Denmark. To be honest, because they are a very participatory country. But to get them involved and to make it their own instead of just pushing it upon them is essential. So I think that would also be the case for Terschelling. If you say we are living lab and we will tell you what to do and you may join us, they will not be very enthusiastic. Actually, one of the core successes of the Samsø project is there was a local citizen that pulled the car and took the initiative. And he knew what worried the people that were living there, what kept them awake. And he just didn't come to push something from outside. So you cannot start a living lab and say, here's a living lab, please come to us. You really have to get into the veins of the system and get to know the people to make it to success.

Okay, so an idea of ownership in a way. Well we're running out of time.

If you have something concrete to comment on, then feel free to contact me when you want. When should your thesis be finished?

Actually in two weeks. So I've got a very short amount of time to do this. You are the you are the final interviewee. So I just need to transcribe and then analyze. I'll add a lot of the information you sent me especially on Samsø. So I think that's key.

Ceschin as well - it's a good way to look at the process of a transition where you kind of start small and have a big ambition, but it's like - they call it the broadening, deepening, scaling up. Deepening is to get more into details in a certain sort of experience broadening is to move to other fields and scaling up is to say, OK, we do it on Terschelling, let's do it in hundreds of different places. Well, send me your concept thesis.

Thanks and end of interview. (Peter Joore interview, Pos. 1-17)

Martin Groters

Rob: Good. Thanks for joining, Martin. My first question is just can you briefly outline your area of expertise and your role at NHL.

Martin: Yeah, I'm a lecturer and researcher at NHL Stenden. And I teach in the master's program on sociology, leisure and sociology. And my research area is what you said already in festivals. And I did some studies on the social impacts of festivals. So what is in it for the locals. And I just finished a study on living labs on the success and field practice of living labs in the Netherlands and we investigated 26 different labs who joined our research. So we sent them questionnaires and we wrote an article about it. So that has just finished. We are now finishing our article and let's see what we can do with it. And besides that, I'm working in the professorship of (innocer devees) which Akke was also involved in and for about four years now. And yeah. And my main same focus, they are all living labs. But also on coeener roles. So the role of people who organize these different labs and learning networks. Okay. That's more or less my job at the moment.

Rob: Well, that's very interesting. Thank you. So you have some knowledge on festivals, obviously. What is your what is your sort of experience of festivals or living labs at festivals? Have you had experience? Do you see festivals as living labs themselves?

Martin: Yeah, of course, because it's a kind of mini society, a festival, so you can test a lot of things. I don't know if you know - the festival was close to where I live. Welcome to the village. And so they used that festival also for testing new things. So I've seen that and I've never tested something myself. Last year, we wanted to develop something to make the festival visitors more aware of the social impacts they have on the local area. Most of the residents and with students who do the master program in just and a leisure tourism and event management, I invented some kind of game they could do with the visitors at that festival. So to make them become more aware of the positive impacts they have, but also on the negative impacts on the residents. And many times they forget about it, about traffic jams and noise and sound pollution, all these things which are happening also because of that festival. And a lot of people I know also in the village where I live they get annoyed by all those festivals which are organized close to where I live. There's a big recreation area the (inaudible) - maybe you know about it. And they organized three or four festivals there each year. Psy fi festival and big trance house music festival, where people from all over the world are coming. But yeah, a lot of people are not happy with that because they close the area, for example, on December for six weeks. So local people who want to go for recreation there and swimming, etc. It's not possible because the municipality more or less uses it for these festivals. So there's a lot of tension going on.

Rob: Um, if we would relate that to Terschelling and Oerol festival, this brings in how many visitors? Thirty five thousand or something.

Martin: Yeah, it brings in a lot of people, but that I think the Oerol festival is a bit different because it exists already a long time and people, the residents on Terschelling feel also very much involved in that festival. And that's first of all, more or less part of them. And they take a lot of measures to , to make sure that there are not so many negative impacts of the festivals. And an island it's also different because the inhabitants of an island and you see the same at Ameland, and at Schiermonnikoog, the other Dutch island. They know that they need the money from the tourists, the festival. So that's kind of a different attitude towards these festivals. But I know that there was a kind of - they wanted to organize a kind of house festival. Also, two years ago and back then, there was a lot of resistance from a lot of locals because they thought, OK, now it's enough, why should we organize more?

Rob: OK. So maybe considering the Corona times, how do you think festivals will change in the future? And what role will living labs play? Will living labs play a role in future festivals? Especially concerning sustainability?

Martin: Maybe this is a nice opportunity also for a living lab - the festival scene. If you can test certain things for the post corona era - but they don't organize festivals at the moment. Yeah, I think so - there are always opportunities for using festivals for living labs, because it's such a nice space to test and do this with innovations that I think that will continue also after the corona crisis. But you never know how long it will take before we get the normal idea of festivals back again. Yeah. So that might take a long, long time. Yeah. You don't know how deep the crisis of the thing will be. Maybe next year we are having all those festivals again and continue like business as usual and people will just go on with things they did. Yeah, we're not we're not sure about it, but I think festivals are good for innovations and testing, testing new developments and creative solutions. Yeah.

Rob: And so what what experience can you give an example of maybe an innovation you've tested at a festival?

Martin: Like I said, I never tested it myself. But what I see as, for example, the festival, here, had things with food for example. You have very sustainable options - insects for example, which you fry. You can eat them in Thailand also, they're very healthy - a lot of protein also. So you don't have to use meat any anymore for your hamburgers. You can make hamburgers, worms, all of that. So I saw them testing these. And I think these possibilities. Yes, they are, they are. Yes, they are. You can test a lot of food at festivals cause also there's a certain guy like people who are coming down, which maybe are more open minded. There are other things - cups you can eat, you know, all these things from your own sustainable ideas. Or plates, you buy something on a plate and....

Rob: Exactly. And I believe that the welcome to the village festival. I spoke to Marije Boonstra. And she talked about this biodegradable plastic cup here that they were testing, which sounds really interesting. And I've looked into that. It's really, really, really, really interesting. Maybe more broadly, how do you think tourism is going to change, especially on to Terschelling in the future?

Martin I don't know. Have seen maybe someone talked to you about those four scenarios because so while one looks at how the crisis will develop - will it be a deep crisis or not. And and the other thing is, how are people changing? Will the state of mind of people also change? So will people become more sustainable or will they just go on like we always do, with the rat race and individualism? So and then they have those four scenarios. Yeah. Yeah. All right. I believe that just within a couple of months when things start getting normal again, we just go on like business as usual. I am afraid that nothing much will change. So people forget very quickly.

Rob: Yeah. Yeah, it's the worry.

Martin: You ask a lot of things by the way about Terschelling. You're doing your research on Terschelling?

Rob: Yeah. It will be on the island of Terschelling with potentially the Waddon municipality.

Martin: Do you develop a living lab on the island?

Rob: That was the original aim. But since the corona, I was going to originally interview the businesses that wanted to be involved in this but quite a few dropped out. So for me, it became

making framework that's really attractive for these businesses to say actually this is going to be beneficial for us. And yeah, my research is done on what you will experts think of a living lab and to show them

Martin: And in which field is this?

Rob: So originally single use plastic, OK, reducing single use plastic amongst the businesses.

Rob: But again, that might change if due to corona, maybe there are more pressing sustainability issues that we need to focus on, such as sustainable transport or a focus on next year long festival setting the living lab up through this. This is something I spoke to a Marije with them worried about. So it's still very open ended, but trying to narrow it down and this is part of focusing, of course

Martin: You see what people do at Ameland also, I think, make it a whole sustainable island.

Rob: I haven't. No.

Martin: Yeah, to the east of Terschelling. And they made a kind of - they are a totally circular island - so a very sustainable island. They use....at Ameland - at the festival also they used also with reusing all these things. For example with tea bags and they make compost out of it with which they can grow tea again.

Rob: Okay. So potentially I can think about networking with them.

Martin: I think so, yeah. Because I think yeah. I think that's very good because all these islands are working on these issues. And that's really what a living lab is about. It's about building this, this network up for learning.

Martin: Yeah. Because what we do in our electorate - we talk a lot I think a lot about learning networks also. And one of the conclusions out of the research I just did, I was, of those 27 Living Labs is that those who do have a knowledge agenda...so which is also a kind of learning network, they are more successful than the other living labs. So the ones that don't think about learning from each other, learning together, but also make an agenda together. What do we want to learn in the future? And that's going to be so for the whole island but the stakeholders, so all the participants in living lab, they have their own learning questions learning and learning goals also. So you have to see if you can connect them. So everybody benefits from that network.

Rob: That's really interesting. So maybe we'll look at this. Um, was that one of the main outcomes you have from your study was having a collective agenda?

Martin: Yeah, that's one of the main outcomes indeed. And we also checked because we wanted to do the study.....ninety five percent of their living labs, there was educational institutes involved in it. Also a very interesting outcome was that the more students and teachers are, the more actively they are involved, the more successful the living lab. So I think it's also good if you can see if you can connect education, which can be NHL Stenden. And I think we have studies - bachelor studies also in the field of plastics, which you can try to involve them also in your living lab. And of course, you involve the business. But it's also important to involve the residents, so try to really to involve a whole triple helix or the quadruple helix in your Living Lab. Yeah, that's important - see if you can find all these stakeholders who are going to have a role in it.

Rob: Great. The other suggestion I had was to involve tourists somehow. Is this an idea?

Rob: Yeah, I think so. Yeah. So. Because that's one of our conclusions also. When do you involve the end users? And because many times the end user will be the tourists. So I think it's cool to involve them. Already in the early stages.

Rob: And did you look at how tourists were involved in other living labs?

Martin: No, we didn't talk to tourists. Of course we didn't really asked for it. I think it can be an important stakeholder group, especially at Terschelling, because they will. Yeah, they are. They are like the residents for a long period during the year. You can compare them maybe with residents. So I think it's good to see them as a fifth stakeholder group within your own. And I think it's really good to fold them. I discussed it a couple of times because we have the tourism alliance Friesland and they have those living labs in Friesland. And one of them is in (inaudible) which is also very much a touristic area and there we discussed also how we can involve tourists and use them or invite them as one of the stakeholders also.

Rob: And yeah, I wanted to ask about the idea of ownership, within the living lab context, I was discussing with someone who noted that maybe we could have project owners within the living lab, like this stakeholder owns this project. Is this important?

Martin: I think ownership is important for the success of a living lab. Yeah, so you make somebody responsible for the project itself. So I think it's a good thing to do that if you have a certain project that you connect some people to it, but you must. Another very important aspect is that you have an open kind of open access living lab so that information and outcomes are available for everybody. And that's also one of the factors seem to be closely related to the success of a living lab, that you make it kind of open access thing. Everybody can have a look at the information. Yeah, it's also the outcomes should be available for everybody. So, yeah, I think that also to have some ownership, I think that's what else you might have the chance that nobody is really going to take responsibility for that.

Rob: Yeah, that's true. So a mix of direction and ownership.

Martin: Yeah. Do you have an idea? So what kind of project you want to be set up in the living lab?

Rob: Still, I think the problem I've come across is getting plastic free in terms of single use plastic is difficult now because so many of the businesses are upping their use of single use plastics due to the fact that in takeaways, so this aim that I had even just six weeks ago, this has been kind of taken down. And so for me, I think it's about going to the stakeholders, producing a document that they're able to send back to us and tell us what they want. Ideally, for me, it would still be about single use plastics. But again, I think this idea of ownership, they have to decide maybe what sustainability issues are the most important.

Martin: The question is, what do you mean with single use plastics?

Rob: So maybe let's do it in front of the counter. So in a in a fries box. Yeah, they're using plastics that they throw away immediately. They do want to see how you can reuse these. Yes. Well, you yeah, originally it was sort of an upstream idea. We can try and provide them with different materials that they use instead of plastics. But now I'm thinking it's maybe more downstream when we think about recycling and reusing these plastics. Yeah, collection points where they can, where people can

throw their plastic away. Yeah. And then a business such as the Jut Fabriek can collect these plastics and turn them into a new product. Now, this might be the new direction it has to take.

Martin: They do it with the cups - beer cups at the DGTL festival in Amsterdam. Did they know they make skateboards or something? All kinds of different things which the next year people can buy.

Rob: Okay. That's what's really interesting.

Martin: And they are really innovative and have very good ideas about sustainability and reusing all these cups and stuff. So one of these organizers gives lectures and stuff

Rob: And so from your knowledge of maybe let's look at NHL quickly, how can NHL be involved with, um, let's say, the downstream recycling plastic? There's the circular design lab. What other networks may be can be involved in the hard science part of this?

Martin: Yeah, we have, I think, a professorship which is connected to the reuse of all these plastics materials. I don't know exactly, but you can maybe find it at our website. I know, I know that it especially I mean, in Anjum, they have a building university also used to and they are very much involved in circular plastics - all these things, yeah. The best they could. All these. Oh, yeah. So I think NHL Stenden, especially for students where I think all interesting student projects which you can see there if your living lab. I think if you if you can connect education in your living lab, I would always suggest that and give that as recommendations, that there should be an educational partner also, you know, with students have good ideas and think out of the box. Which is also interesting that they can give some continuity in the projects and within your Lab.

Rob: So sort of each year students have different projects related to the design of, let's say, the upcycling of single use plastics. (Martin Groeters interview, Pos. 46)

Martin: Yeah, yeah. Well, something we do in our electorate, we make it multidisciplinary. So you can use this from a more technical studies and you can also invite tourism students. Well, within each project. So make it multidisciplinary. And what we do also is make it multilevel. So we work together with NVOs and then don't know if you know what this was, but NVO, HVO education. And it's also good for the learning process, but also for the innovations and the solutions. First, you have all people from different disciplines looking at it, which is most of the time that's really interesting. So I would recommend if they can connect to NVO, HVO studies. I think it's broader also not in focus on just plastics. But I think sustainability is a much broader sense. Yeah, like what I said with Ameland. They have these festivals and things and are really ahead with these projects and kinds of things. Well, these things are possibilities.

Rob: Well, it seems like they need to connect them and get them on board or at least some idea. Yeah. Yeah. Yeah. The other thing is, you know, you just mentioned multi multilevel design, do you have any experience of looking at multilevel design within a living lab setting? Can I apply the idea of multi-level design to the process itself. Is this a useful tool?

Martin: Yeah. Yeah. Peter Joore I've heard of it but I don't know this model. Okay but I think its okay.

Rob: I think I can use it. You know, I'm just I'm sort of just having a look at this. Yeah, okay. I don't want to keep you too long, Martin. You've been extremely useful. I'm sure you're quite busy.

Martin: Yeah. Well, just good luck with the thesis and you can also send me an e-mail with other questions.

Rob: Thanks, goodbye.

Speaker 1: END OF INTERVIEW (Martin Groters interview, Pos. 1-52)