



# Practices of demand in converging infrastructures

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# 1 Introduction

My master's thesis in the field of Science-Technology-Society Studies (STS) revolves around the deployment of fibre optics networks in Burgenland, Austria. Through this case study, I would like to gain a better understanding of how the broadband strategy shapes the deployment practices of fibre optics networks in rural areas. I am particularly interested in the question of demand in the context of network deployment as well as what happens when infrastructures such as telecommunications and energy networks become linked, which is the unconventional approach chosen by the broadband strategy.

In this interim report, I briefly sketch out what I have achieved so far, where problems arose and how these have impacted my plans for the next steps. I cannot yet discuss empirical results here because data collection and analysis are ongoing, which means that there may be additional factors which can still emerge.

## 2 Status

### 2.1 Literature review

One of the cornerstones of academic work is engaging with the work of others in order to contribute to ongoing discussions in a meaningful way. This is particularly important in interdisciplinary research, such as STS.

In August 2022, I completed a first version of the chapter including a broader discussion of how infrastructures have been researched within the social sciences. This broader discussion is necessary because although the use of telecommunications services is a frequent subject of study, telecommunications networks have received little attention. However, a rich corpus of studies exists on energy networks, which are illuminating for studying telecommunications networks. Following this discussion, I included a review of the literature available on fibre optics deployment in rural areas, which is specific to my case, as well as providing a primer on the different actors which may be engaged in such projects. I also introduced the theoretical approach I have chosen to use – the notion of practices –, how this approach has been applied in STS more generally and how it has been used in the study of infrastructures.

This chapter was well-received by my supervisor, who offered some suggestions on where to expand or which parts could perhaps fit better in a later chapter discussing the setting of the case study. In the course of the data collection phase, I came across issues which were relevant to the case, but had not yet been touched upon in the literature review in the detail necessary to allow readers to follow the empirical discussion. In the meantime, several other studies on the topic had appeared which could elaborate on some of the issues raised in previous research. As these

changes are relatively minor, we therefore decided to leave the finalisation of the literature review to when the empirical chapter was completed.

## 2.2 Data collection

Working with a qualitative research approach offers a variety of ways to approach data collection. I chose to draw on three methods in particular: document analysis, participant observation and interviews.

The document analysis I conducted was focused on the broadband strategy of Burgenland, as many of the activities observed in this case study relate directly and some relate indirectly to the broadband strategy.

Participant observation is an important tool for qualitative research, particularly in anthropology and also in STS. It entails collecting data in a setting that is not fully determined by the researcher, allowing for emergent themes to be identified and feed into the data analysis and further data collection. Unfortunately, there are no public events dedicated to the broadband strategy of Burgenland. However, the broadband strategy and the deployment activities are situated in the wider context of fibre optics deployment in rural areas and the investments required to achieve this. During my data collection, several events took place around these topics, and I was able to attend two of these events for the purposes of data collection, which allowed me to collect contextual data to inform my analysis and better situate the particular relations emerging in my case study.

Interviews are most commonly associated with the social sciences, yet they are particularly challenging in contexts which, for one reason or another, are considered sensitive. My research touches a sensitive context because not only does it focus on practices which are confidential in a business context, but the thesis itself will also be published. In addition, I work for the Austrian telecommunications regulator, and even though my research is my own academic work, has not been sponsored and is not related to RTR or TKK, it is understandable that actors in this field would be hesitant to talk to me. I have nevertheless managed to obtain an interview with one key figure in this field, which has proven highly informative, and with one of the municipalities which has experienced broadband deployment projects. It was not possible for me to speak with telecommunications providers so far to gain a better understanding of their views, but as they cannot be considered main actors within this field, this is more of a disappointment than a serious set-back.

## 2.3 Data analysis

Qualitative data is challenging to analyse because of its unstructured nature and relational complexity. In addition, the methods I have chosen each brought certain types of data into the

research, which required slightly different steps to bring this data into a format amenable to analysis.

For the document analysis, I coded the broadband strategy to facilitate qualitative analysis. In addition, I compared the way in which demand occurs in the broadband strategy to the way in which demand is discussed in a study on investment in fibre optics networks. This helped me focus on the different functions of demand in the context of deployment and how different actors relate to these aspects. I was thus able to obtain coded passages from the broadband strategy to compare to other types of data.

During participant observation, I took extensive field notes, which were then digitised and, in a further step, coded. In one case, I also had access to the presentations shown during the event. I did not analyse these presentations separately, but referred to them to contextualise the field notes if necessary.

Thus far, I have had two interviews, which were recorded, transcribed summarily (including passages which are direct quotes) and summarised. The transcription and summary were discussed with my interviewee, providing them with an opportunity to mark confidential information. The transcript was then coded.

In a next step, I began to analyse the codes and write memos. Memos are analytical pieces of writing in which relations between codes and patterns within codes are explored, and they serve as a first step to writing up the results. I have written memos for the majority of the codes I have found, but these memos will still be enriched or revised once the data collection is completed in January 2023.

One important thing to note is that while the data collected was in German, my thesis is written in English. For the interviews, the switch from German to English is made with the transcript, allowing interviewees to propose alternative translations if they believe them more appropriate. With other data, I made the switch from German to English with the memos.

## 1 Summary of changes to the planning document

No changes to the timeline have been made.