A Citizen-Centered Analysis of What Public Services are Suitable for Digital Communication Channels

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Abstract: The benefits of digitalizing public services can only be met if citizens adopt digital services while at the same time stop using expensive traditional channels. Still, many citizens keep using traditional channels. Studies on channel choice and IT adoption have addressed what factors influence citizens' channel behavior. However, they have omitted the interplay between citizens' perceptions of public services and their channel choices, as well as how the design of digital services and citizens' experience of using self-service applications affect their channel choice. In addition, the technological optimism of digital government may have caused us to overlook the important question whether all public services are suitable for digitalization. In this ongoing research paper, we present the outline of a research project starting this summer, in which we will critically analyze – from the perspectives of citizens and public sector organizations – what public services are suitable for digital communication channels.

Keywords: digitalization, public services, citizens, participatory design

1. Background and Objectives

Increasingly, public organizations digitalize their services. By offering their services online and transferring tasks from caseworkers to citizens in self-service applications, public organization can achieve large efficiency gains. In addition, automating services can help reduce error rates by ensuring data integrity [1]. Citizens and businesses, on the other hand, get easier access to information and services outside opening hours, without having to physically visit public organizations [2].

However, these efficiency goals can only be met if citizens adopt the offered digital services while at the same time stop using the traditional offline channels such as telephone or in-person visits to the counter. The continued use of traditional channels is expensive for public organizations because it requires the involvement of caseworkers [3]. A related problem occurs when citizens fail to provide the correct information, and caseworkers must ask citizens for updated information or to restart the application entirely. In countries all over the world, digital public services are not used to the expected extent [4]. Even in countries where the uptake of digital self-service applications is high, many citizens, also those with good digital competencies, keep using traditional channels [5].

There are several reasons why citizens choose to contact public organizations via traditional channels. Research from the digital government field shows that digitalizing and transforming public services into easy-to-use self-service applications are challenging tasks. Digital solutions can be confusing and difficult to understand for citizens [4]. Reasons for turning from digital to traditional channels include citizens' need for information or for explanation concerning a public service, or the need for caseworkers to perform actions that citizens are not able or willing to do themselves [6], [7]. Citizens are not professionally trained caseworkers, and often lack the administrative competencies needed to understand the task at hand or the language involved [8]. In addition, it is important to acknowledge that citizens are no homogeneous user group. They differ, among others, in age, gender, social and cultural background [9], and digital and administrative literacy [10]. Thus, the same public service is perceived differently by different citizens.

The channel choice (CC) and multichannel management (MCM) branches of the digital government field have studied how citizens choose channels for public service encounters, and how public organizations manage service interactions across traditional and digital channels [11], [12]. Also, the IT adoption field in digital government research has analyzed citizens' willingness to use digital tools in public service encounters [13]. However, neither of these fields have performed in-depth analyses of the interplay between citizens' perceptions of public services and their channel choices. They have not yet studied the digital services themselves, with regards to citizens' channel choice and use, their need for help, or the design of digital self-service applications. Not taking the nature of the public services into account presents an important knowledge gap in the literature.

In addition, the optimism which has characterized both research and public policy on digital government since its introduction, may have caused us to overlook one important question, namely whether all public services are suitable for digitalization and self-service applications. Only few studies have taken a critical perspective on the digitalization of public services and shed light on potential negative effects [4]. This lacking perspective also becomes evident in the fact that many projects dealing with technology and digitalization are innovation and development projects while research projects are the minority [14]. However, a successful development of technological solutions requires research on the importance of technology for public services [9] from both the provider perspective, i.e. public organizations, as well as from the demand perspective, i.e. citizens.

2. Project Objectives and Contribution

The objective in this project is to critically analyze – from the perspectives of citizens and public sector organizations – what public services are suitable for digital communication channels. The research objectives are organized in four work-packages, each with their own sub-goal (see Figure 2, below). First, we identify the public services that citizens use the most and the least on digital and traditional communication channels and the services that generate the most and the least effort for public organizations. Second, this sample of services will be the basis for the further analyses. In collaboration with citizens and policy makers, we identify characteristics that are important for (a) citizens' and (b) public organization's perceptions of a public service. Third, we use this set of characteristics to analyze how different citizens perceive the selected sample of public services, and how their perception of these services relates to their channel choices and to public organization's multi-channel management strategies. Finally, we identify what services as perceived by citizens and public organizations are suitable for digital communication channels and offer guidelines for how public services may be designed and offered. Our project strongly relies on the involvement of users, especially citizens, caseworkers, and policy makers. To understand the needs of potential users of digital public services, it is necessary to involve the targeted user group [4].

Our project takes places in collaboration with public organizations across Scandinavia, which administer complicated public services in areas such as social benefits, health, and family benefits. These organizations have all encountered the problems described above. Citizens independent of their age and educational background use traditional channels for contacting them. By collaborating with these organizations, we seek a broad data basis and allow for a Scandinavian comparison. We believe such a comparison is fitting and promising because the Scandinavian countries share a similar cultural background (e.g., high levels of trust in public institutions) and are among the frontrunners in public sector digitalization. Still, they approach to public sector digitalization differently, with Denmark, for example, following a mandatory digital self-service strategy.

Our project contributes to the digital government and public administration literature by analyzing and discussing what public services are suitable for digitalization from citizens' and public organizations' point of view. We build on the existing research by studying actual use of different digital services as it happens across traditional and digital channels. We involve citizens, caseworkers, and policy makers in analyzing service suitability and their respective needs in relation to the use and provision of digital services.

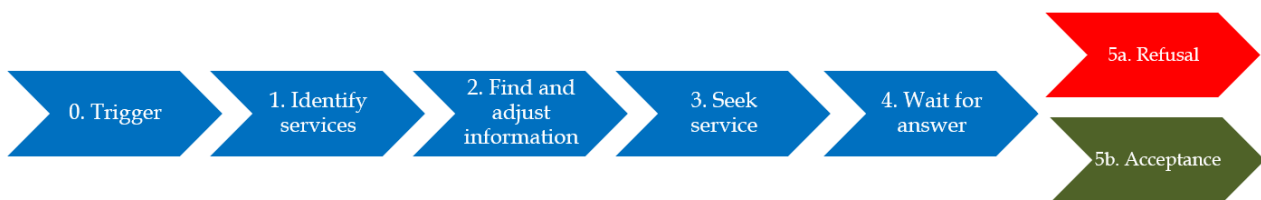## 3. Research Question, Theoretical Approach, and Method

The project objective is concretized in the overarching research question *"Why do citizens choose certain channels for public services and how does this match public organization's channel strategies?"*. This is divided into four underlying research questions, one for each work package.

- RQ1: What public services do currently generate the most and the least traffic on digital and traditional communication channels?
- RQ2: How can citizens' and public organization's perceptions of public services characteristics be understood and analyzed?

- RQ3: How do the characteristics of public services relate with citizens' channel choices and public organization's multi-channel management strategies?
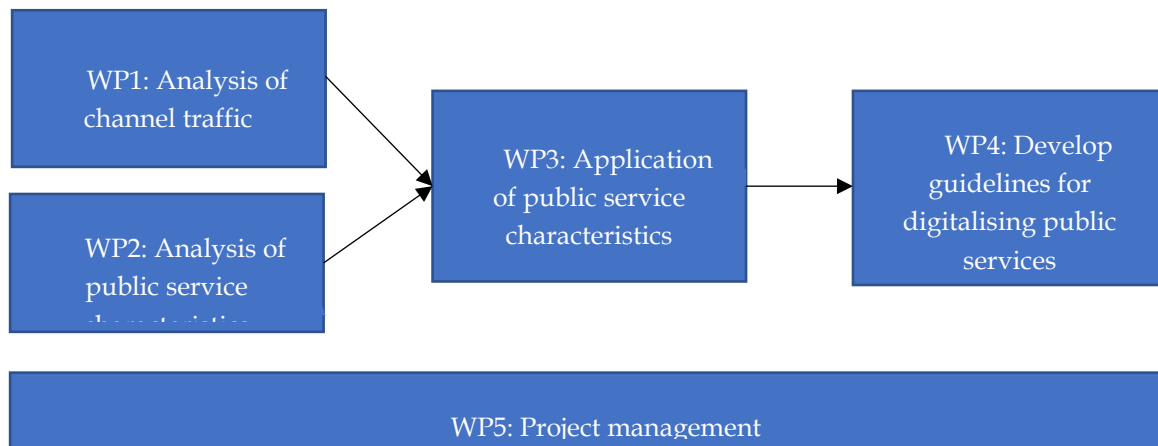- RQ4: What public services should be digitalized from citizens' and public organization's perspectives?

To address these questions, we will analyze channel traffic and citizens' perceptions of a set of public services supplied by large governmental agencies in the Scandinavian countries. We will go deep into the structure of the services chosen, analyzing the underlying processes from both a public administration view, and a citizen view. We will search for patterns that can inform what services are suitable, and not suitable, for being delivered through the digital channel, and how some services can be improved. Our theoretical approach is based on the understanding that public services are not one-dimensional as often treated by research but complex and need to be broken down into steps before they can be understood in detail [15]. Figure 2 depicts a generic step model of a public service (applying for a public benefit). The figure is based on empirical studies [6], [15] and inspired by service design and user journeys. Before a public service starts, a trigger occurs. This trigger can be an event in a citizen's life such as getting a child or losing a job. However, a public service can also be triggered by an activity on the public organization's side such as sending a letter, paying out money to a citizen [16] or by refusing an outcome of a public service (see step 5a. in Figure 2). We will use this process model as a point of departure for our analyses. Each process included in the analysis is likely to share traits with other processes that can be broken down in the steps suggested in Figure 1, but also have its own unique qualities and settings.

Figure 2: Process step model of benefit application from a citizen's perspective

We organize our methodological approach in four work packages (WP) whose relationship is depicted   in
. Throughout our project we will follow an interdisciplinary approach. We will apply and combine findings and methods from the fields of digital government, channel choice, multi-channel management, participatory and service design, and public administration. The interdisciplinary approach is further described in each of the work packages and is reflected in the composition of the project team as well as the complementary knowledge from the external advisors.

Figure 3: Relationship between work packages

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┌─────────────────────┐
│  WP1: Analysis of   │───────┐
│  channel traffic    │       │       ┌──────────────────────┐       ┌──────────────────────┐
└─────────────────────┘       └──────▶│  WP3: Application    │       │  WP4: Develop        │
                                      │  of public service   │──────▶│  guidelines for      │
┌─────────────────────┐       ┌──────▶│  characteristics     │       │  digitalising public │
│  WP2: Analysis of   │───────┘       └──────────────────────┘       │  services            │
│  public service     │                                              └──────────────────────┘
│  characteristics    │
└─────────────────────┘

┌─────────────────────────────────────────────────────────────────────────────────────────┐
│                              WP5: Project management                                      │
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3.1 Stakeholder Engagement

Our research approach strongly relies on stakeholder knowledge and experience. We will involve the main stakeholder groups citizens, caseworkers, policy makers, and service designers. While citizens will be involved in interviews and design workshops in WP 2, 3, and 4, the stakeholders from the public organization side will be involved in all four WP via interviews and design workshops. Especially when collaborating with citizens, we will pay attention to a diverse sample in terms of, amongst others, age, gender balance, and cultural background. We will get access to knowledgeable citizens via reference user groups that are involved with our collaborating public organizations in Norway, Denmark, and Sweden. They will further provide access to data such as channel traffic and internal reports as well as enable contacts with caseworkers, policy makers, and service designers.

3.2 Ethical Considerations

In qualitative research, the researcher must respect the rights of the participants as well as their needs and desires [17]. Since our research methods are in parts intrusive (e.g., co-listening to citizens' calls) and reveal sensitive information (e.g., interviews about the services they use), participation in our studies is voluntary and especially citizens have the possibility to drop out at any stage. Before data collection, participants will be informed about its purpose and need to give their consent to data collection. The privacy of the participants will be guaranteed, and data will be stored anonymously. We will ensure when conducting interviews and workshops with citizens that they represent a diverse sample in terms of e.g., age, gender, and educational background.

4. Impact

Our project has various implications for research. First, our approach and results may spark new discussions about the technological optimism which underlies many research studies on digitalisation. By asking what public services should (not) be digitalised, we contribute to a critical

discussion about the consequences and boundaries of digitalisation. Second, we contribute to the research fields of channel choice and multi-channel management. By analysing public organisations' channel traffic (WP1), we answer researchers' calls for presenting more and up-to-date data on citizens' actual interaction on different channels that has been gathered in real life scenarios [10]. Third, the development of the analytical tools for identifying public service characteristics from citizens' and public organisations' perspectives based on theoretical and empirical data (WP2) provides an impact to various research streams. The mapping of characteristics to the different stages of a public service can serve as a typology for characterising citizens' perceptions for various kinds of public services. It contributes to a deeper understanding of the public service in, e.g., the research fields of channel choice and multi-channel management as well IT adoption, where it can serve as both a template for further factors influencing IT adoption as well as a means for interpreting the results. Combining and contrasting the service perceptions of citizens and public organisations will highlight discrepancies between provider and demand side. Fourth, through the application of the analytical framework to citizens' perception of public services and their channel choices (WP3), we get detailed insights into how citizens make their channel choices throughout the different steps of a public service. By contrasting these with the characteristics identified by public organisations, we identify how citizens' channel choice relates to public organisations' channel strategies. In doing so, we contribute to theory building in the fields of channel choice and multi-channel management. Fifth, based on collaboration with citizens and service designers (WP4), our recommendations for how to integrate citizens' perceptions into service design contribute to the service design research stream. Sixth, while our research will focus on the public sector, we believe that our findings can also be useful for service provision in the private sector such as the banking and insurance industry. Seventh, our project also has methodological implications for research.

While our research approach is tailored to the cooperation with welfare organizations in Scandinavia, it is a methodological blueprint that can be applied to basically any public sector organization and that can be replicated in various contexts. Finally, by having an international project team and by cooperating with experts from different countries, our project will strengthen the international visibility of the channel choice field, which has previously mainly centered around a limited set of countries [12].

The target audience of our research project is manifold. First, it includes citizens as the main users and stakeholders as well as employees from public organizations such as policy makers, caseworkers, and service designers that will be involved in our data generation and analysis. In the academic field, our target groups are researchers from different domains such as digital government, channel choice, service design and public administration, as well as students. From a practice-oriented perspective, the relevant target audience includes strategic decisions makers and employees involved in the public sector in Scandinavia. Beyond that, our results are relevant to decision makers and service designers in public organizations in all Western countries. Finally, our target audience includes the public who is interested in our research and NFR as the funding body.

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About the Authors

Sara Hofmann (Project Lead)

Associate professor Sara Hofmann has researched the interaction between citizens and public sector organizations for many years and published several well-received papers on citizens' channel choice and public sector organization's multi-channel management. Her expertise are qualitative research methods. She has been involved in and has led several research projects in the field of digital government.

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Associate Professor Christian Østergaard Madsen is experienced in conducting research projects in collaboration with public and private stakeholders. He is an expert on channel choice and multichannel management research and has a proven track record for developing and implementing multichannel management strategies as well as mixed-method research in public organizations.

Ida Lindgren

Associate Professor Ida Lindgren is an acknowledged researcher within the field of information systems. She is an expert on digitalization in the public sector with special expertise in public e-services. She is currently conducting research on automation of public services.

Guri Verne

Senior lecturer Guri Verne has a long track record of research projects about technology and service development from a user perspective. Her PhD thesis from 2015 was about automation of public services from the citizens' perspective. Her research is published in leading conferences within the fields of Computer Supported Cooperative Work, Participatory Design, and e-Government.