Spring 6-2-2019

# Integrated and seamless? Single Parents' Experiences of Cross-Organizational Interaction

Christian Østergaard Madsen
*IT University of Copenhagen*, chrm@itu.dk

Lars Rune Christensen
*IT University of Copenhagen*, lrc@itu.dk

# Integrated and seamless? Single Parents' Experiences of Cross-Organizational Interaction

Christian Østergaard Madsen[1] and Lars Rune Christensen[2]

[1, 2] IT University of Copenhagen, Denmark
{chrm,lrc}@itu.dk

**Abstract.** The lack of integration of public organizations and services is a recurring challenge for scholars, policymakers, and citizens. Within the e-government field, scholars have presented web-stage models, which predict that digitization will lead to a fully integrated public sector and seamless user journeys for citizens. Although these models have not delivered on their promises, scholars and policymakers still regard digitization as a means to integrate the public sector, achieve efficiency gains, and improve service quality. We argue that the web-stage models overlook barriers to integration, as they are mostly conceptual, and primarily focus on the potential of technology, rather than its actual implementation and use. Moreover, the models occur on the organizational level of analysis and ignore citizens and their actual experiences. Therefore, we present an empirical study of how citizens experience cross-organizational interaction during benefit application following a family break-up or divorce. Through observations, contextual interviews, focus group discussions and workshops we identify seven challenges citizens experience. These challenges make citizens aware that they are interacting with different organizations and break their experience of an integrated public sector. Further, the challenges cause citizens to turn from the digital channels towards traditional channels to complete their interaction. Thus, the lack of integration challenge both citizens' satisfaction and efficiency gains from public sector digitalization.

**Keywords:** Integration, Seamlessness, E-government, Cross-organizational Interaction, Actual Use

## 1 Introduction

### 1.1 Background

Organizational integration and seamless interaction represent central themes within both academic studies of public sector digitalization and national e-government strategies [1]–[4]. In 2001, Layne and Lee presented their seminal web-stage model, which predicted that the internet would lead to increasing integration of government agencies [1]. This integration would occur through one-stop service platforms, which citizens and businesses could use to interact with public agencies irrespective of the service in question. Hereby, digitization would provide seamless interaction with public authorities for citizens, who would experience the public sector as one holistic unit. Layne and

Lee's conceptual web-stage model, which describe, explain and predict this development are a rare example of native theory developed by e-government scholars [5]. The web-stage models are simultaneously the most influential and criticized models within e-government studies [6]–[8].

Within the Multichannel management (MCM) stream of e-government scholars have studied integration and seamless interaction both theoretically and empirically [2], [9]. Kernaghan present integration and seamlessness as concepts, which describe citizens' experience of an interaction with public organizations [2]. Despite this, most MCM studies focus on organizational barriers to integration or how organizations can migrate citizens from traditional to digital channels [9]. The studies that do include citizens focus on how citizens choose channels for interaction with public organizations and how this choice can be influenced [9]–[12], rather than the following interaction and how citizens experience this.

Thus, there is a gap in the e-government literature concerning citizens' experience of integration and seamlessness during inter- and cross-organizational interaction. To address this gap, we present a study of Danish single parents, who apply for economic benefits through the web-portal borger.dk following a recent break-up or divorce. We apply observations, contextual interviews, focus groups discussions, and workshops to generate insight into how citizens' experience interaction with several government organizations and the challenges they encounter, which break their perception of an integrated public sector.

The study is important in several ways. We offer empirical contributions to the e-government literature based on a detailed study of citizens' cross-organizational interaction with public authorities. Further, we offer theoretical contributions to the e-government literature by extending the analysis of the core concepts of integration and seamlessness from the organizational level into the citizen's realm.

## 1.2 Purpose and Research Question

The aim of our research is two-fold. At the empirical level, we seek to understand how citizens experience integration and seamlessness during cross- and inter-organizational interaction. We are especially interested in identifying and classifying the situations and challenges, which makes citizens aware that they are interacting with several government organizations, and where their perception of an integrated public sector breaks-down. Next, we seek to understand these experiences and challenges and contribute to the e-government literature on integration and seamlessness, by discussing these concepts from a citizen point-of-view. Our research questions are: *(1) What types of challenges are experienced by citizens during cross-organizational interaction?* and *(2) Why do citizens experience these challenges?*

This paper is structured as follows. In the next section, we present related research to highlight the gaps we seek to cover and position our paper. In section three, we present the research setting and methods for conducting our empirical studies. We present findings from the studies and discuss these in relation to previous research in section four. In the fifth and final section, we offer concluding remarks, discuss the limitations of our studies, and suggest directions for future research.

## Related research

### 1.3 Studies on public sector integration and multichannel management

This paper is positioned in the electronic government (e-government) literature. E-government scholars study how digitalization influences internal processes in government and interaction between government, citizens, and businesses. E-government studies have a strong emphasis on improving public sector efficiency [13], [14].

Layne and Lee (2001) seek to explain and predict how digitization will transform the public sector. They present a four-stage maturity model depicting increasing organizational integration, which they claim the transformation of the public sector will follow. The stages cover: (1) presence of online information, (2) facilities to exchange information, (3) vertical integration and data sharing for organizations with similar function, (4) full horizontal integration of government organizations irrespective of the service area. Layne and Lee describe the organizational, managerial, technical and legal barriers to increased integration. They focus on the technical aspects, i.e. creating a shared infrastructure and joint databases that facilitate automatic data exchange, and organizational processes, such as harmonizing underlying support processes and creating a shared information base for citizens through one-stop service portals.

Layne and Lee's study is by far the most cited paper in the e-government field[13]. Moreover, the models contribute to native theory building, which scholars have repeatedly criticized e-government studies for lacking [5], [13], [14]. However, the stage models are also widely criticized, for their lack of basis in previous research or theoretical frameworks, for not being based on empirical studies, and most importantly for being technologically deterministic, and incorrect in their prediction of e-government's impact [6]–[8]. Moreover, the models only address integration conceptually, and at the organizational level. They do not provide insight into what integration means from citizens' perspective.

MCM research studies how government organizations can overcome the challenges to vertical and horizontal integration, and migrate citizens from traditional towards digital channels [2], [9], [15]. MCM studies are theoretical, empirical and prescriptive, but still mostly occur at the organizational level of analysis.

Ebbers, Pieterson, and Noordman [15] present a strategy for how government organizations can integrate their channels and create a seamless, holistic user experience, and guide citizens towards the most efficient channel for the task at hand. Pieterson [16] labels this the 'Integrated channel positioning strategy.' However, the strategy applies to interaction within, not across organizations. Further, Pieterson argues that *'we need more knowledge on the actual needs, desires, and behaviour of citizens'* [16, p. 49].

Kernaghan divides the concept of integration into three related areas [2], [17]. Service integration entails "*bringing together and fitting together government related services so that citizens can access them in a single seamless experience based on their wants and needs"* [17, p. 120], channel integration *"entails linking service delivery channels to provide seamless cross-channel service"* [2, p. 214].

Kernaghan has analysed the main challenges to service and channel integration [2], [18]. He identifies political, structural, managerial and cultural barriers to integrated service delivery, and argue that *'horizontal governance is perhaps the most important organizational challenge to realizing citizen-centred service delivery'* [19, p. 563]. He presents organizational integration as an outcome of organizations' journey towards service and channel integration [2]. Kernaghan notes, that government organizations can enter into different forms of partnerships ranging from co-operation where they share information, to consolidation where organizations are restructured and share resources, budgets, and etc. Unlike Layne and Lee, Kernaghan argues, that consolidation, or full horizontal integration, is but one of several possible outcomes from digitization, and not only caused by the technological development, but a conscious choice made by organizations. Thereby he escapes the technological determinism, which Layne & Lee are criticised for [6], [7]. Finally, Kernaghan, cites Jane Fountain, who notes that *"(...) web based efforts at integration also reveals the "cracks" in the machinery of the bureaucratic state: the extent of fragmentation and lack of fit among programs, data measures, information, rules, and services in government"*[20, p. 202].

### 1.4 Studies on administrative literacy

The e-government field contains numerous adoption studies, covering both citizens and organizations [13], [21]. The studies of citizen adoption are often informed by theoretical frameworks such as the Technological Adoption Model [22], Diffusion of Innovations [23], and the Unified Theory of Acceptance and Use of Technology [24]. These studies contribute by explaining and predicting citizens' intention to use e-government services, but they do not study citizens' actual experiences with real services. Further, many studies either regard e-government services as generic phenomena or focus on simple services involving a single interaction with one public organization [13], [21]. In doing so, they limit citizens' skills to being able to access and operate computers and browse websites, cf. [25]–[27]. Thus, these studies ignore the importance of the task at hand, and that mandatory digitization also means mandatory self-service, an attempt to achieve efficiency gains by turning citizens into their own caseworkers.

However, empirical studies of actual use demonstrate that, while access to computers and digital literacy are necessary prerequisites, they are not the only skills citizens require to successfully use e-government services [28], [29]. Bertot & Jaeger note that citizens need 'government literacy', described as an understanding of the structure of government [30]. Grönlund, Hattakka and Ask use the term 'administrative literacy', defined as "*the ability to navigate bureaucracy, which includes having a good idea of how society's institutions work, the terminology involved and hence being better able to know where to go to find the forms, procedures, contact information etc. necessary, and indeed understand the information once found and being able to act upon it*" [31, p. 217]. We apply the concept of 'administrative literacy' in our analysis, as it presents a comprehensive perspective on citizens' requirements beyond digital access and skills. It contains useful indicators for our analysis of areas where citizens experience lacking integration (RQ1), and a way to explain, why citizens have this experience (RQ2).

To sum up, the concepts of integration and seamless interaction have been central to the e-government field since its inception. While the initial studies presenting web-stage models were severely criticized, the following studies by MCM scholars have accommodated some of this criticism. Although integration and seamlessness relate to citizens' experiences of cross-organizational interaction, there is a lack of empirical studies of these concepts from citizens' perspective. E-government scholars have repeatedly called for empirical studies of actual use, to generate more knowledge on how citizens choose channels, perceive digital user journeys and the problems encountered [2], [11], [12], [16], [32], [33]. Administrative literacy appears to be a useful concept for identifying areas of lacking integration from the citizen perspective, as it highlights several areas, citizens need to be aware of to use self-service applications. Next, we present our methods for studying these issues, and identify the challenges to cross-organizational interaction as experienced by citizens.

## Research Setting and Method

### 1.5 Research Setting: The Danish Authority Udbetaling Danmark

Denmark is frequently regarded as a leader in public sector digitization. In 2016, 88 % of the Danish population interacted with public authorities online, which is the highest share in Europe, and far above the EU-28 average of 48% [34]. In Denmark, as elsewhere, policymakers primarily regard e-government as a means to reduce costs in public sector administration [35], [36]. However, unlike other countries, the Danish government has made digital communication and digital self-service applications mandatory for both citizens and businesses [4]. This includes benefit application for single parents. Finally, seamless user journeys and improved collaboration among public authorities are recurring themes in the Danish e-government strategies [3], [35], [37].

As we want to study cross-organizational integration, we chose services surrounding the application for economic benefits following a major life event - family break-up or divorce, which involve multiple public organizations [28], [29], partially or completely located at the one-stop service portal, borger.dk. The authority Udbetaling Danmark (UDK), which administers various public benefits, has its online presence solely at borger.dk, whereas other authorities have separate individual websites in addition to being at borger.dk. Citizens identify themselves online using the national identification system NemID (EasyID). Communication occurs via a secure e-mail system, Digital Post, which became mandatory in 2014. Economic transactions are handled via Nem-Konto (Easy account), a bank account assigned for payments from the public sector, required for all citizens and companies.

We find this research context fitting for several reasons. First, it is a mature, post-adoption environment, where the infrastructure is in place, and citizens have adopted digital channels for interaction with the public sector. Second, the services are located at the web portal borger.dk, the central component in the Danish e-government strategy, and frequently marketed as a single point of entry to the public sector. Thus, according to the web-stage models, and public policies, we would expect borger.dk to have come a long way in terms of integrated and seamless interaction.

## 1.6 Method

The empirical studies took place in three stages as a sequential mixed method study [38], presented in Table 1. We applied a qualitative approach, as we sought to explore and understand cross-organizational interaction from citizens' perspective [39], [40].We began by conducting observations of actual interactions between citizens and caseworkers followed by contextual interviews. Next, we facilitated focus group discussions and future workshops with single parents who had applied for public benefits following a recent divorce or family break-up. Conducting our studies in stages, and bringing participants back, allowed us to discuss our interpretations with the participants, and explore aspects, which were where brought up by the participants in follow-up studies [38]. Eisenhart and Graebner argue that this approach, i.e. combining retrospective interviews and real-time cases, is useful for mitigating informant bias [41].

**Table 1.** Overview of empirical studies

| Stage | Method | Participants | Place and Time |
|---|---|---|---|
| 1. | Co-listening to calls and contextual interviews (50) | Callers to UDK Family Benefits division (n=50) | UDK, Hillerød, April - May 2016 |
| 2. | Focus group discussions (2) | Single parents, who have recently experienced break-up (n=7) | IT University of Copenhagen (ITU), October 2016 |
| 3. | Workshops (2) | Single parents from focus groups (n=5) | ITU, December 2016, January 2017 |

**Observations: Co-listening to calls and contextual interviews**

We began our study with observations in a call center. The first author co-listened to 50 inbound calls to the Family Benefits division of UDK, and conducted ultra-short interviews with the callers. Upon answering the telephone, the caseworker informed the callers that the author wished to listen in on the calls, and ask a few questions afterwards. The author only listen in on calls after callers gave their consent, which approximately nine out of ten callers did. Some of the callers were in a relationship, while others were single parents. The interviews lasted around two minutes each and briefly covered: The problems faced by the callers, if they had interacted through other channels, if they had contacted other authorities, and whether their overall interaction was completed or they needed to conduct additional tasks. Through these observations, we gained direct insight into the kinds of problems callers experienced, and we could ask questions to citizens while they were in an actual use context. This approach also allowed the callers to present their reasons for calling [39], [40]. In between calls, the caseworker provided additional information regarding the calls and typical areas of inquiry. The first author took notes on a template and later transferred these to a spreadsheet for further analysis. We were surprised to find that 30 out of the 50 calls involved more than one public authority. We will not use these observations for statistical generalizations. Rather, we aimed to explore and identify areas for further exploration during the following in-depth studies [38].

**Focus group discussions**

We facilitated two focus group discussions at the ITU [42], with four and three participants respectively. We used a recruitment company to find participants who had recently been divorced or gone through a family break-up. To maintain their anonymity, we have given the participants aliases in the published material. We chose focus group discussions, as it is a useful technique for getting participants to open up and share their experiences of sensitive topics [43]. We organized the discussions around three main themes: Participants' expectations of public authorities and benefit application prior to becoming single parents, participants' actual experiences of benefit applications and the various problems encountered, and finally participants' reflections and suggestions for improvement. We wanted the participants to interact with each other and have the opportunity to provide their examples and perspectives of their cross-organizational interaction and therefore applied a semi-structured approach.

**Workshops**

Finally, we facilitated two future workshops [44], with four participants from the focus group discussions and one new participant. The purpose of the workshops was twofold. First to learn more about the participant's experiences and the current state of the e-government services in relation to family break-ups, and second to learn about how the participants wanted to see future e-government services for single parents. Encouraging the workshop participants to think about possible e-government futures is worthwhile, as it provides insight into, which of the challenges of e-government participants see as central, and hence worth addressing in future scenarios. We divided the future workshops into three phases. (1) A critique phase, where the participants described the problems they had encountered. (2) A fantasy phase, where the participants imagined the best service possible, if the government had unlimited resources. (3) A realism phase, where the authors and participants discussed, which of the services could realistically be developed given public authorities' limited budgets. In this paper, we focus on presenting the results from the critique phase.

**Analytical strategy**

We transcribed the empirical data and transferred it into the qualitative data software Atlas.TI for analysis [45]. We employed an inductive approach to analyzing and interpreting the data. We first identified the challenges to the cross-organizational interaction as experienced by the participants and noted when, where and how they experienced them. Then we classified these examples and combined them into groups. While we coded the data, we wrote memos to reflect on preliminary findings and the research question and created questions for the follow-up studies [38], [45]. During this part of the analysis, we also looked for variation among the participants' statements and possible explanations for these in the participants' backgrounds and professions [41]. To answer why the participants experienced these challenges, we applied the theoretical concept of administrative literacy as a starting point [30], [31], [46].

## Findings

Next, we present our findings and answers to the research questions guiding our study. We begin by presenting three context-specific findings, which influences our participants' overall experiences.

First, none of the interactions were purely digital. Rather, they cut across electronic and traditional channels and public and private organizations. For instance, the participants used search engines to gather information on benefit eligibility, and web-banking services to check that the benefits where actually received.

All the participants used digital channels to apply for benefits. However, they supplemented their online interaction with traditional channels. Unlike previous studies from other countries however [9], [32], our participants use digital channels as their primary means of interaction, and traditional channels to solve problems that arise related to this interaction. They called the authorities in question, often repeatedly, and/or showed up at the counter before, during or after an online interaction.

Second, benefit eligibility varies among the participants. A single parent's benefit eligibility depends on several factors such as who has custody of the children, personal and household income, if they are studying, and etc. Some participants received up to five types of benefits, while others received only two. Because of this difference in benefit eligibility, the participants' experiences vary considerably. Those participants who received few services experienced less complexity and more coherent user journeys than those who received many services. For instance, one of the challenges we identified relates to two specific benefits only. We present this information in Table 2.

Third, our participants refer to being in, or having gone through, a life crisis. Some had difficulties remembering information and solving tasks related to their benefit application. They informed us that they needed emotional support and assurance that things would work out. Benefit application is only one of many tasks, which they have to solve following a divorce or break-up. They need to find a new place to live, make economic arrangements with their bank, handle the relationship with the former partner, and consider the well-being of their children. Here participants sought information from friends, relatives or third-party websites. The help mostly revolved around benefit eligibility and application procedures [29]. Some participants asked relatives to conduct the interaction for them, especially if it concerned a conflict with a former partner.

### 4.1 What types of challenges do citizens experience during digital cross-organizational interaction?

We have identified seven challenges our participants experienced while they applied for public benefits (see Table 2). Some are easily distinguishable, while others overlap. Further, some challenges were mentioned by all participants, while other challenges were only experienced by a few.

**Table 2.** The challenges to integration and seamlessness experienced by citizens

| What | How | Who | When | Where |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Lack of benefit overview | There is no official overview of all single parent benefits online | All participants | At the beginning, when searching for benefits | Online, especially at the web-portal borger.dk |
| Task responsibility and information transfer | The responsibility for applying for benefits and transferring information varies | Most participants, except a caseworker | During the application process and when inquiring about missing payments | Online, when applying, and on the telephone |
| Dependency and application order | Each benefit has eligibility requirements, and some must be applied for in sequence | Participants who applied for two specific benefits | When applying or inquiring about not being granted benefits | On the telephone or in person |
| Laws and rules | The participants cannot distinguish between laws and rules across the public authorities | Most participants, except a caseworker | During the application process | Online in texts, and in letters |
| Terminology | The public authorities use different terms to describe similar or related phenomena | All participants | During the application process | Mostly online and in written communication |
| Communication channels | The authorities have different addresses, telephone numbers and opening hours | Participants who contacted authorities | During requests for help | On the telephone and in person |
| Empathy | The participants experience that the authorities' willingness and incentives to help vary | Participants who had interacted with several authorities | During requests for help | On the telephone and in person |

*4.1.1 Lack of benefit overview*

Our participants were eligible for up to five different public benefits and two support schemes to receive money from their former partners. Four different organizations and several sub-sections thereof administered these. The challenge most frequently mentioned, and the biggest cause of concern is that there is no official, cross-organizational overview of all benefits and support schemes. We asked participants to explain the biggest problem they experienced:

*Elisabeth: I've just written where, what and who. I'm still not sure about that, where to go, who to ask, or what I'm entitled to. There's really a, do this and that, missing.*

*Sofie: I've written lack of complete overview, which is at the top of it all, and covers everything I guess.*

These sentiments are repeated throughout. The most complicated, and time-consuming task is to find the benefits one is eligible for, the authorities in charge, and how to apply for them. The web-portal borger.dk presents the benefit schemes vertically, in a traditional silo fashion, according to the administering organization. Our participants want this information presented horizontally, relevant to their situation, i.e. *what am I eligible for as a single parent?*

This discontinuity represents a well-known problem within public administration; the mismatch between how authorities present information, and how citizens would like the information to be presented [15]. As none of the authorities are responsible for combining the information, the single parents must do so themselves. Sofie, referenced above, refer to this as putting a jigsaw puzzle together. She searched for information online and on social media and then called public authorities and used borger.dk to verify this information. She kept track of the benefit schemes in a notebook, which served as her to-do-list, budget, and map and record of her interaction with the public authorities.

*Sofie: Yes but it was [inaudible] different pieces lying around. What I had heard people talking about 'Did you know some people get housing benefit if they rent an apartment?' And I knew there was something about single parent benefit over here, I knew about educational supplement was over there, I knew about support for daycare. Little jigsaw pieces lying around, I had to write down, and apply for.*

*4.1.2 Task responsibility and information transfer*

The second issue concerns who has responsibility for initiating the benefit application and for transferring information across agencies related to such applications. The Danish state automatically grants the basic family benefit to mothers when they have children. Following a divorce or family break-up, however, single parents are responsible for identifying and applying for additional benefits they have become eligible for by themselves. Our participants learned of this responsibility in different ways. Some were told by their local municipality or student organization, some by friends and family, and others learned it while they searched and applied for benefits. One participant, a professionally trained caseworker, was fully aware that the responsibility was hers from the start. Either way, the variation in benefit administration caused feelings of arbitrariness and uncertainty among some participants and made them aware that they were dealing with different agencies and different underlying laws and rules.

Another aspect concerns the transfer of information across organizations. Sometimes, citizens are responsible for submitting information to public organizations, sometimes the organizations share information through databases. We first observed this issue during observations at UDK. Of the 50 calls we co-listened to, thirty concerned tasks involving other organizations. Many of these calls concerned information transfer between organizations. Some people called to inquire about the status of their cases and why they had not received any child support. Upon calling, they learned that they had to submit a decision from the State's Administration to UDK before UDK could initiate their cases.

During the focus group discussions and the workshops, several participants informed us, that they initially assumed that the data transfer was automatic, or the organizations already had all the necessary information. They regarded the public administration a monolithic unit where information flows freely and automatically.

*4.1.2 Dependency and application order*

Having identified the benefits one is eligible for, and where and how to apply for them, the next problem concern sequencing, the order in which one has to apply for benefits. Our participants report that they have to be regarded as single parents by UDK, before they can apply for benefits as single parents from the Danish Students' Grants and Loans Scheme. They also told us, that the Danish Students' Grants and Loans Scheme does not inform of this prerequisite when they turn down applications, they only state that the application is rejected.

*Camilla: I think the hardest part has been tying those things [benefits] together. I mean, when your educational support depends on your status [as a single parent] at Udbetaling Danmark. You have to apply for this status to get something another place.*

*Elizabeth: Yes that's true. You have to be approved to get increased child benefit, to be allowed to apply for the [single] parent educational benefit. (...) If you're not approved at borger.dk, that is, if you don't get money from the municipality, but would like to have increased educational support, that's not possible.*

We also observed a reverse situation, where a participant waited to apply for benefits because she thought that certain prerequisites had to be in place first. Lise, a mother of three, had filed for separation but was not yet divorced when she participated in our study. She believed, that the legal requirements for child support, which were settled in the State's Administration also apply to the single parents' benefits, which UDK administrates. Another participant, Sofie, clears this confusion out.

*Lise: No, I'm not that far yet. I have submitted a request for separation because my lawyer advised me to do so (...). And because we don't agree on alimony, we've reached a point where we're neither married nor divorced, because we need to negotiate the terms first. I've postponed it because I want the lawyers to work it out first. (...) I can't apply for increased child support, all these things. I can't apply for anything before the separation is final. (...)*

*Sofie: You can apply for single parent benefits before the separation is final. I applied for all of this before I got separated. (...) You can be a single parent although you're still married.*

*Lise: Right, I need to go in there [borger.dk] again. I didn't read it like that at all.*

*4.1.3 Laws, rules and eligibility criteria*

Our participants encounter different laws, rules, and criteria while applying for benefits. The State's Administration is in charge of settling cases regarding custody and child support following family breakups or divorces. If the parents do not live together, the parent not living with the child has to pay child support to the other parent. If child support is not paid, the receiving parent can ask for an advance from UDK. UDK will then collect the money from the other parent. Child support is independent of whether the receiving parent is in another relationship or not. However, single parents may be eligible for additional benefits from UDK if they are not living with another adult under 'marriage like conditions'. Thus, some benefits depend on who has custody of the child and where the child lives, while others depend on whether the recipient is in another relationship. This is the cause of considerable frustration and debate among our participants. Monica mistakes joint custody, administered by the State's Administration with single parenthood administered by UDK:

Monica: *Am I a single parent if we have shared custody? Well, if the kids have their address at my place? Well (...) it is not really straightforward.*

Income also causes confusion. Many public benefits are income dependent, but the term 'income' is legally defined differently across benefit schemes and administering authorities. Moreover, it may refer to personal income, household income or the joint income of the former couple. By encountering different benefit rules and criteria, our participants became aware that they are dealing with separate authorities.

*4.1.4 Terminology*

Citizens' difficulty understanding bureaucratic language, the aptly termed 'Gobbledygook' is well-known [30], [31], [46]. Our participants expressed considerable frustration with the terminology and legal expressions they encountered. Moreover, the terminology applied by the various organizations differ from the terms our participants use, especially concerning the names of benefits. This is a general problem encountered across the public sector, which does not break the experience of seamlessness.

However, our participants encountered different terms for the same phenomena. One example concerns the various names for certain benefits, which a mother can receive from the other parent to cover her costs related to childbirth. The State's administration and UDK use different terms to describe these benefits. This creates uncertainty as to whether these organizations are describing the same benefits.

*4.1.5 Communication channels*

Our participants' interaction occurs across several communication channels sequentially or simultaneously. All participants use self-service applications at borger.dk to apply for benefits. However, when problems arise, they add a channel to their interaction and call the public authorities or family and friends for help. A web-portal offers a joint entrance for multiple organizations and may be an ideal platform to integrate public authorities. However, the illusion of a single public sector breaks down when the interaction shifts to the telephone. This challenge arises from the simple facts that public authorities have different telephone numbers and different opening hours. Moreover, our participants explain, how caseworkers cannot answer questions that are outside their organization's jurisdiction and have to refer callers elsewhere.

*Elizabeth: I called because I had free day-care and was worried because I was about to get some extra income. And I had been told that if I earned more than 17.000 DKK a month the free day-care would be gone. (...) but I called [UDK] and waited for a long time, and said 'What happens when I get this extra income, do I have to apply for free day-care again?'. And she said 'No, that's not here, you have to call someone else'. But I had a lot of questions, and she] answered one of my questions and referred me to The Danish students' Grants and Loans Scheme and borger.dk. (...) and they cannot always forward you, so they give you a telephone number to someone else.*

*4.1.6 Empathy*

Our participants encounter up to four different public authorities in relation to their benefit application. The service quality they experienced varies across these organizations. Some of the participants report that caseworkers from one organization were unfriendly and showed no interest in helping them. If participants missed a deadline or fill out an application incorrectly, they have to wait for up to three months for the next payment. In contrast, the staff at their local educational institution responsible for the Student's Grants and Loans Scheme (called SU in Danish) are described as helpful and friendly.

*Elizabeth: At the SU-office, if you're there in person, they tell you 'You also have to apply through UDK. (…)*

*Camilla: But that's different. Because the SU-office, that is a local facility at your educational facility. And they have people employed to look after the students etc. (…)*

*Elizabeth: But they have an interest in helping you. Because if you don't get help (…), then you are going to drop out, and they will get bad statistics (…)*

*Camilla: You get a close connection to the SU-office, you know them (…) If you call UDK, you just call their main telephone number.*

We regard this difference in perceived empathy and service as a challenge, which make the participants aware that they are interacting with different organizations. However, this may not only be due to organizational differences, but also the means and frequency of communication. Because the SU-staff are located at the educational institution, and our participants have frequent, personal interactions with them, they can develop a relationship. When the students meet with the staff in person, they have a chance to get additional information. The staff knows what problems typically occur, and can tell the individual student what they need to be aware of in their specific situation. Such supplementary information is more difficult to attain through a portal, where the information presented is of a general nature, and structured according to overall administrative areas.

### 1.8 Why do citizens experience these challenges?

In the previous section, we identified seven cross-organizational challenges, which our participants experienced as they applied for public benefits and other support schemes through digital self-service applications. We may find answers to why the challenges exist in the first place by conducting a study at the organizational level of analysis; studying organizational structures, interviewing policymakers, analyzing public authorities' underlying legislation etc. as Kernaghan and others have done [2], [17]–[20]. However, our purpose here is to understand why citizens experience these challenges. We seek to answer this question by analyzing our empirical data and applying the theoretical concept of administrative literacy. Two related findings stand out from the data.

First, although the participants' experiences revolve around digital self-service, they do not mention digital skills, or lack of access to information technology as an issue. Rather, as one of the participants, Sofie, mentioned, the main problem is that each participant has to create their own *individual* jigsaw puzzle, by finding and combining pieces from different organizations that applies specifically to the participants as individual benefit recipients. Second, our participants experience inconsistency across organizations as another challenge. What they find to apply in one organization does not apply for another. For instance, a specific term (income) means one thing for one organization and something else for another organization. Similarly, the participants have to carry decisions or transfer information across organizations sometimes, not always.

Thus, the overall challenge our participants face, is that they try to create horizontal integration and establish similarities, while interacting with different and individual organizations, with their own set of legal requirements, practices, and procedures. As the challenges we have identified demonstrate, this coherence does not always exist, making the task impossible. Paradoxically, the solution to the participants' problems is to be able to distinguish between the general and multiple specifics, to know when a rule, a legal requirement, or a term is general and applies to all organizations, but also when it is specific, and how it is different among the organizations.

Returning to the concept of *administrative literacy* [31, p. 217], we find that it covers three main areas. For our purposes, the fundamental part of the concept is how it recognizes that bureaucracy is not one holistic unit, but consist of several institutions:

(1) "*The ability to navigate bureaucracy*".
This part is concerned with finding one's way across multiple public organizations. It recognizes that citizens need abilities to find their way, that there is something to be navigated between. In our case, we saw that the newly single parents had to navigate between several organizations.

(2) *"Having a good idea of how society's institutions work, the terminology involved".* This aspect covers the procedures of the institutions and the ability to understand the terminology. Note that while procedures is written in plural form, 'terminology' is written in single form. Our results point to several, different terminologies, which citizens must be able to to distinguish between.

(3) *"Know[ing] where to go to find the forms, procedures, contact information etc. necessary, and indeed understand the information once found and being able to act upon it."* This last part of the concept implies that there are several organizations, and the importance of finding one's way among them. If the public sector were one coherent unit, with a joint entrance for everyone, knowing where to go would not be an issue. Finally, it recognizes that it takes abilities to understand the information, and act upon it. Thus, there is more to interacting with public authorities than merely being able to operate a computer. According to our participants finding and acting upon information is not enough. They also need to know when they have to transfer the information among the organizations, and when this task is carried out for them.

To sum up, the concept of administrative literacy covers many of the challenges our participants face. However, it could be expanded by acknowledging that public organizations have different terminologies, and that it may not be enough to fill out forms, but that citizens are also required to transfer information across organizations.

## Conclusion

We began this paper by asking "*What types of challenges are experienced by citizens during cross-organizational interaction, and why do citizens experience these challenges?".* To answer our research questions, we have presented the results of a mixed method, sequential study of single parents, who apply for benefits following a break-up or divorce.

We have identified seven challenges, which our participants experience as they apply for public benefits. In contrast to the web-stage models, we find that integration and seamlessness are not just technological phenomena. In our research setting, the infrastructure is in place and in full use. However, despite years of effort to integrate services digitally, the organizations involved in administering public benefits still operate as separate units, with individual legal frameworks, terms, operating procedures etc. Borger.dk acts as a horizontal layer across these organizations, facilitating cross-organizational interaction. In some cases, this works smoothly, in other cases challenges appear, which break the illusion of integration, and make citizens aware that they are interacting with different, unique organizations. We find that the challenges reveal themselves differently depending on participants' backgrounds and life-situations. Further, all participants do not experience all the challenges. In terms of achieving economic benefits from digitalization, we find that many of the challenges cause our participants to turn towards traditional channels. Some contact family or friends, while others contact the authorities. In the latter cases, there are economic gains from harmonizing services, terminology, rules etc. In either case, we see that the bureaucratic "cracks", which Fountain refer to, are filled, not by bits, but by people.

Finally, we found that the citizens' task of creating horizontal integration among different organizations may be an impossible task. To successfully navigate bureaucracy citizens must learn to distinguish between situations that are general, where the rules are the same across organizations, and multiple specifics. Thus, the overall goal of seamless user journeys seems paradoxical. Unless governments are willing to change the underlying legislation, terminology etc., and truly harmonize organizations, the silos will remain physically and digitally.

The study occurs in a particular setting, which must be taken into account. First, Denmark is a highly digitized country, where digital self-service is mandatory. Second, our participants are in a unique situation, which most people only go through once. Unlike other public services, what they learn here is rarely used again. For public services, which are used frequently, people can learn to ignore or overcome the challenges. Future studies could study how the frequency of interaction, and the importance of the task, influences people's perception of seamlessness and integration.

## References

[1] K. Layne and J. W. Lee, "Developing fully functional E-government: A four stage model," *Gov. Inf. Q.*, vol. 18, no. 2, pp. 122–136, Jun. 2001.

[2] K. Kernaghan, "Changing channels: Managing channel integration and

migration in public organizations," *Can. Public Adm.*, vol. 56, no. 1, pp. 121–141, Mar. 2013.

[3] The Danish Government, Local Government Denmark, and Danish Regions, "A stronger and more secure digital Denmark. Digital strategy 2016-2020," 2016.

[4] The Danish Government, Danish Regions, and Local Government Denmark, "The Digital Path to Future Welfare eGovernment Strategy 2011-2015," 2011.

[5] F. Bannister and R. Connolly, "The Great Theory Hunt: Does e-government really have a problem?," *Gov. Inf. Q.*, vol. 32, no. 1, pp. 1–24, 2015.

[6] F. DeBrí and F. Bannister, "e-Government Stage Models: A Contextual Critique," *Proceedings of the 48th Hawaii International Conference on System Sciences (HICSS-48)*. pp. 2222–2231, 2015.

[7] D. Coursey and D. F. D. Norris, "Models of e-government: Are they correct? An empirical assessment," *Public Adm. Rev.*, vol. 68, no. 3, pp. 523–536, 2008.

[8] D. F. Norris and C. Reddick, "Local E-Government in the United States: Transformation or Incremental Change?," *Public Adm. Rev.*, vol. 73, no. 1, pp. 165–175, 2013.

[9] C. Ø. Madsen and P. Kræmmergaard, "Channel Choice: A Literature Review," in *Electronic Government: Proceedings of the 14th IFIP WG 8,5 International Conference, EGOV 2015*, Thessaloniki, Greece, 2015.

[10] M. Teerling and W. Pieterson, "How to improve e-government use: An empirical examination of multichannel marketing instruments," *Inf. Polity*, vol. 16, no. 2, pp. 171–187, 2011.

[11] W. E. Ebbers, M. G. M. Jansen, W. J. Pieterson, and L. A. L. van de Wijngaert, "Facts and feelings: The role of rational and irrational factors in citizens' channel choices," *Gov. Inf. Q.*, vol. 33, no. 3, pp. 506–515, 2016.

[12] W. E. Ebbers, M. G. M. M. Jansen, and A. J. A. M. A. M. van Deursen, "Impact of the digital divide on e-government: Expanding from channel choice to channel usage," *Gov. Inf. Q.*, vol. 33, no. 4, pp. 685–692, 2016.

[13] C. Ø. Madsen, J. B. Berger, and M. Phythian, "The Development in Leading e-Government Articles 2001-2010: Definitions, Perspectives, Scope, Research Philosophies, Methods and Recommendations: An Update of Heeks and Bailur," in *Electronic Government: Proceedings of the 13th IFIP WG 8.5 International Conference, EGOV 2014*, Dublin, Ireland, 2014, vol. 8653, pp. 17–34.

[14] R. Heeks and S. Bailur, "Analyzing e-government research: Perspectives, philosophies, theories, methods, and practice," *Gov. Inf. Q.*, vol. 24, no. 2, pp. 243–265, Apr. 2007.

[15] W. E. Ebbers, W. J. Pieterson, and H. N. N. Noordman, "Electronic government: Rethinking channel management strategies," *Gov. Inf. Q.*, vol. 25, no. 2, pp. 181–201, Apr. 2008.

[16] W. Pieterson, "Citizens and Service Channels: Channel Choice and Channel Management Implications," *Int. J. Electron. Gov. Res.*, vol. 6, no. 2, pp. 37–53, Jan. 2010.

[17] K. Kernaghan, "Moving towards the virtual state: integrating services and

service channels for citizen-centred delivery," *Int. Rev. Adm. Sci.*, vol. 71, no. 1, pp. 119–131, 2005.

[18] K. Kernaghan, "Moving towards integrated public governance: improving service delivery through community engagement," *Int. Rev. Adm. Sci.*, vol. 75, no. 2, pp. 239–254, 2009.

[19] M. Flumian, a. Coe, and K. Kernaghan, "Transforming service to Canadians: the Service Canada model," *Int. Rev. Adm. Sci.*, vol. 73, no. 4, pp. 557–568, 2007.

[20] J. E. Fountain, *Building the virtual state : information technology and institutional change*. Washington, D.C.: Brookings Institution Press, 2001.

[21] S. Hofmann, M. Räckers, and J. Becker, "Identifying Factors of E-Government Acceptance – A Literature Review," in *33rd International Conference on Information Systems (ICIS 2012)*, Orlando, Florida, USA, 2012, pp. 1–10.

[22] F. D. Davis, "Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Q.*, vol. 13, no. 3, pp. 319–340, 1989.

[23] E. M. Rogers, *The Diffusion of Innovations*. Simon & Schuster International, 2003.

[24] V. Venkatesh, M. G. Morris, G. B. Davis, and F. D. Davis, "User Acceptance of Information Technology: Toward a Unified View," *MIS Q.*, vol. 27, no. 3, pp. 425–478, 2003.

[25] L. Carter and F. Bélanger, "The utilization of e-government services: citizen trust, innovation and acceptance factors *," *Inf. Syst. J.*, vol. 15, no. 1, pp. 5–25, 2005.

[26] L. Carter and V. Weerakkody, "E-government adoption: A cultural comparison," *Inf. Syst. Front.*, vol. 10, no. 4, pp. 473–482, May 2008.

[27] S. AlAwadhi and A. Morris, "The Use of the UTAUT Model in the Adoption of E-government Services in Kuwait," ... *Syst. Sci. Proc. ...*, pp. 1–11, 2008.

[28] C. Ø. Madsen and P. Kræmmergaard, "The efficiency of freedom. Single parents' domestication of mandatory e-government.," *Gov. Inf. Q.*, 2015.

[29] C. Ø. Madsen and P. Kræmmergaard, "Warm Experts in the age of Mandatory e-Government : Interaction Among Danish Single Parents Regarding Online Application for Public Benefits," *Electron. J. e-Government*, vol. 14, no. 1, pp. 87–98, 2016.

[30] J. C. Bertot and P. T. Jaeger, "The E-Government paradox: Better customer service doesn't necessarily cost less," *Gov. Inf. Q.*, vol. 25, no. 2, pp. 149–154, Apr. 2008.

[31] A. Grönlund, M. Hatakka, and A. Ask, "Inclusion in the E-Service Society – Investigating Administrative Literacy Requirements for Using E-Services," *Electronic Government: 6th International Conference (EGOV 2007)*, vol. 4656/2007. Springer Berlin/Heidelberg, pp. 216–227, 2007.

[32] C. Reddick and M. Turner, "Channel choice and public service delivery in Canada: Comparing e-government to traditional service delivery," *Gov. Inf. Q.*, vol. 29, no. 1, pp. 1–11, Jan. 2012.

[33] L. Schmidthuber and D. Hilgers, "Browse or Brush? An Exploration of Citizen-Government Interaction in the Municipal Realm," *Proceedings of the 50th*

*Hawaii International Conference on System Science (HICSS-50)*. pp. 2418–2427, 2017.

[34] Statistics Denmark, *ICT Household Survey. EU Comparisons 2016*. 2017.

[35] B. Jæger and K. Löfgren, "The history of the future: Changes in Danish e-government strategies 1994-2010," *Inf. Polity Int. J. Gov. Democr. Inf. Age*, vol. 15, no. 4, pp. 253–269, 2010.

[36] M. Hjelholt and J. Schou, "Digital lifestyles between solidarity, discipline and neoliberalism: On the historical transformations of the Danish it political field from 1994 to 2016," *TripleC*, vol. 15, no. 1, pp. 370–389, 2017.

[37] K. N. Andersen, R. Medaglia, and H. Z. Henriksen, "Frequency and Costs of Communication with Citizens in Local Government," *Proceedings of the 2nd International Conference on Electronic Government and the Information Systems Perspective (EGOVIS 2011)*, vol. 6866. pp. 15–25, 2011.

[38] J. W. Creswell, *Research Design. Qualitative, Quantitative, and Mixed Methods Approaches*, Fourth. London, UK: SAGE, 2014.

[39] N. Blaikie, *Designing Social Research*. Polity, 2012.

[40] S. Kvale, *Interview. En introduktion til det kvalitative forskningsinterview*. Hans Reitzels Forlag A/S, 1994.

[41] K. Eisenhardt and M. Graebner, "Theory building from cases: Opportunities and challenges," *Acad. Manag. Rev.*, vol. 50, no. 1, pp. 25–32, 2007.

[42] R. A. Krueger, *Focus Groups. A Practical Guide for Applied Research*. Sage Publications, 1994.

[43] E. Colucci, "'Focus groups can be fun': the use of activity-oriented questions in focus group discussions.," *Qual. Health Res.*, vol. 17, no. 10, pp. 1422–1433, 2007.

[44] K. Bødker, F. Kensing, and J. Simonsen, *Participatory IT Design. Designing for Business and workplace realities*. Cambridge, Mass.: MIT Press, 2004.

[45] S. Friese, *Qualitative data analysis with Atlas.ti*. SAGE Publications, 2012.

[46] S. Skaarup, "The Mediation of Authority," *scss.tcd.ie*, pp. 1–32, 2012.