Translating Telephone Calls To Spreadsheets: Generating Knowledge on Citizen Multichannel Behavior in Collaboration With Caseworkers

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Abstract: Public organizations increasingly seek to digitalize their services, and migrate citizens from traditional communication channels towards digital self-service channels. In Denmark, digital communication and self-service channels are mandatory for public organizations, citizens and businesses. Denmark has the highest share of citizens who use digital channels to interact with public authorities in the EU. However, the use of traditional channels remains high, and occurs among adopters and non-adopters of digital channels alike. Within the multichannel management stream of e-government research, there is a methodological gap in how knowledge can be generated on citizen multichannel behavior, and why citizens continue to use traditional channels. Practitioners need this knowledge to improve administrative efficiency and citizens' satisfaction with digital services. Therefore, this paper presents a study of how scholars, practitioners, and caseworkers collaborated to generate data on citizen multichannel behavior. The study occurred in the public authority Udbetaling Danmark, where caseworkers periodically use an IT system to log incoming calls. First, a draft version of a classification scheme was created from co-listening to calls and contextual interviews with citizens. To ensure engagement and a common understanding of the classification categories, the scheme was co-developed with caseworkers in three iterations. Observations, joint discussions and interviews were used to uncover problems related to caseworkers' understanding of the scheme, and identify technical and practical problems related to its use. With the new classification scheme, the share of logged calls increased from 10 - 50 percent to 90 - 95 percent. Moreover, the collaboration led to a closer understanding of citizens' problems among the involved actors and a willingness for future collaboration to improve the services. This paper contributes to the multichannel management field of e-government and to practitioners by presenting a method for how knowledge can be generated on citizen multichannel behavior in collaboration with caseworkers.

Keywords: multichannel management, citizen multichannel behavior, action research, collaboration, caseworkers, Udbetaling Danmark

1. Introduction

To reduce the cost of public administration and improve citizen satisfaction, policymakers seek to increase citizens' and businesses' use of digital self-service channels (Chadwick and May, 2003; Welch, Hinnant and Moon, 2004; The Danish Government, Local Government Denmark and Danish Regions, 2016). While the use of digital channels is increasing, citizens have not stopped using traditional channels (Pieterson, 2010; Statistics Denmark, 2016). Therefore, multichannel management (MCM) and channel choice (CC) scholars call for more knowledge on the specific problems, which cause inquiries through traditional channels (Pieterson, 2010; Reddick and Anthopoulos, 2014; Ebbers *et al.*, 2016). If these problems can be identified, many inquiries can either be pre-empted and removed altogether or migrated online (Kumar and Telang, 2012; Madsen and Kræmmergaard, 2016). Caseworkers are key to generating this knowledge as they have direct contact with citizens and businesses. However, MCM studies have found that top-down initiatives from management – such as instructing caseworkers to classify calls – may fail if these initiatives do not fit caseworkers' needs and work practices (Bharosa *et al.*, 2010). Further, Nygren, Axelsson & Melin found that actors at different organizational levels have different interpretations of what multichannel services entail, and therefore recommend that these actors "*jointly confront and discuss their understanding of e-government and work practice.*" (Nygren, Axelsson and Melin, 2014, p. 126). However, Nygren et al. (2014) do not offer any guidelines or specific practitioner recommendations for how such a confrontation can be conducted.

1.1 Background

This paper presents a study from the Danish public authority Udbetaling Danmark (UDK) undertaken in October 2017. The Danish government has made e-government self-service applications and digital communication mandatory for public organizations, citizens and businesses (The Danish Government, Danish Regions, & Local Government Denmark, 2011; 2016). While Danish citizens have the highest adoption rate of e-government services in the EU, the share of citizens who use traditional channels to interact with public

authorities is also increasing (Statistics Denmark, 2016). Caseworkers at UDK are periodically required to classify incoming calls. UDK management use this data to identify and eliminate the cause of calls. While quantitative data sources exist on channel traffic at an aggregated level (number of website visits, incoming calls and letters), these sources do not offer insight into the specific topics of the interaction. Thus, the data generated by caseworkers is vital to increase UDK's administrative efficiency and to improve citizens' satisfaction with UDK's services. In spite of its importance, UDK caseworkers have historically only classified between 10 and 50 percent of the calls.

Inspired by Action Research (McKay and Marshall, 2001; Mathiassen, Chiasson and Germonprez, 2009), the author conducted an intervention with management and caseworkers in a joint-effort to improve the data quality and caseworkers' classification rate. A new classification scheme was iteratively co-developed, while technical and practical issues related to logging calls were identified and solved. The caseworkers used the new scheme for two months and classified 11,500 calls. The share of classified calls rose to over 90 percent.

1.2 Purpose and research question

This paper addresses a methodological gap in the MCM literature in e-government by presenting a method for how management and caseworkers can collaborate to produce knowledge on citizen multichannel behavior. The study is presented as an Action Research '*problem solving methodology investigation*' (Mathiassen, Chiasson and Germonprez, 2009) contributing to MCM literature and to practitioners. The focus is solely on the collaboration and co-design surrounding the development and implementation of the classification scheme. The data generated by the caseworkers, and the subsequent improvement of UDK's services will be presented in future papers. The research question guiding this paper is: *How can knowledge on citizen multichannel behavior be generated through practitioner collaboration?*

This study is important in several ways. Policymakers continuously look towards digitalization as a means to increase public sector efficiency and improve citizen satisfaction (Margetts, 2010). Within MCM, such efficiency gains cannot come from increased adoption of digital channels alone. There must also be a reduction in the use of traditional channels, which is rarely the case (Madsen and Kræmmergaard, 2015). This paper contributes to MCM literature by presenting a method, which scholars and policymakers can use to generate knowledge on multichannel behavior. Moreover, it presents empirical knowledge on MCM practices and demonstrates how co-development and collaboration can contribute to harmonizing MCM perspectives across different organizational levels by bridging MCM initiatives to existing caseworker practices.

The next section presents related MCM literature to position the paper and highlight the gaps, which the paper seeks to cover. Section three presents the research setting where the study occurred and the research problem, while section four presents the methods applied to solving the problem. The results of the study are presented and discussed in section five. The final section contains concluding remarks, discusses limitations, and offers suggestions for future studies.

2. Literature review: Multichannel Management in e-government

This study is positioned within the MCM field of e-government, which studies public organizations' management of multiple channels (Ebbers, Pieterson and Noordman, 2008; Kernaghan, 2013). MCM scholars typically examine government-to-citizen/business interaction from the organizational side (Madsen & Kræmmergaard, 2015). MCM studies revolve around multichannel strategies (Ebbers, Pieterson and Noordman, 2008; Pieterson, 2010), inter- and intra-organizational collaboration and integration (Roy, 2009; Kernaghan, 2013), instruments and practices for implementing multichannel strategies (Teerling and Pieterson, 2011; van de Wijngaert, Pieterson and Teerling, 2011), and caseworkers' role in MCM (Bharosa *et al.*, 2010; Nygren, Axelsson and Melin, 2014). The MCM field is closely related to studies of citizens' CC. Most CC studies are conducted using quantitative methods, eg. regression analysis on survey data of hypothetical government-to-citizen encounters (Madsen and Kræmmergaard, 2015). While this method is useful for analyzing how specific factors influences CC, it does not provide insight into specific encounters, or provide answers for citizens continued calls to public authorities following the adoption of digital channels. Therefore, both CC and MCM scholars have called for qualitative studies of multichannel behavior, to identify the problems which cause citizens to turn from digital to traditional channels (Pieterson, 2010; Reddick and Anthopoulos, 2014; Ebbers *et al.,* 2016).

Although most MCM studies occur at the organizational level of analysis, a few studies take place at the group level and focus on caseworkers' and their importance for multichannel strategies. Bharosa, Janssen, Klievink & van Veenstra (2010) collaborated with caseworkers in a Dutch governmental agency to learn from their experiences and to ensure their commitment to improving service delivery. They developed a role-playing game, which they combined with brainstorming sessions to mobilize and synthesize the caseworkers' tacit knowledge into a set of service delivery principles. Moreover, they found that the caseworkers became *'active ambassadors for the principles within their respective departments'* as they had contributed to developing these principles (2010, p. 83). The authors argue, that this method is preferable to a traditional top-down method where management dictates what to do, which tends to be more customer than employee oriented, does not generate insights based on the actual use context, and risks not being adopted by the caseworkers. In contrast, when caseworkers participate in the process, the results will be more fitting to the specific context, and there is a higher likelihood of the project succeeding.

Nygren, Axelsson & Melin studied how electronic multichannel services were perceived at the strategic and the practical level in a Swedish State Agency (2014). Drawing on Orlikowski's notion of *interpretative flexibility* (Orlikowski, 1992), they found that top management, middle management and caseworkers perceive channels and multichannel strategies differently. Top management divide channels according to its underlying technology, and focus on cost efficiency, automation, and the migration from traditional to electronic channels. Middle management are concerned with meeting the office's goals, and regard the different channels as means towards administering their employees work division towards this end. The caseworkers are concerned with solving citizens' problem, and get positive feedback from them. Caseworkers prefer direct contact with citizens through the telephone, as opposed to indirect contact through e-mail. Thus, caseworkers distinguish channels based on the interaction forms these afford with citizens. By focusing on the agency employees' work perspectives and practices, Nygren et al.'s study offers novel and important contributions to the MCM field. They argue, that a MCM strategy should not only consider citizens' needs, but also internal aspects such as the competencies and needs of the caseworkers who are conducting the strategy in practice.

To sum up, scholars have repeatedly called for knowledge on citizen multichannel behavior and the problems, causing citizens to turn to traditional channels. Methods are needed for generating such knowledge, and for ensuring the findings can be generalized. MCM scholars also call for empirical studies and observations of inter- and intra-organizational collaboration (Kernaghan, 2013) and practitioners' involvement (Bharosa *et al.*, 2010; Nygren, Axelsson and Melin, 2014). This paper builds upon Bharosa et al.' and Nygren et al.'s studies, which show that caseworkers have different perspectives on MCM than management, and argues for creating a shared understanding between these groups. Having positioned the paper in relation to the MCM field in e-government and presented the gaps, which it seeks to cover, the next section presents the research setting.

3.   Research setting: The public authority Udbetaling Danmark

Udbetaling Danmark (UDK) is a Danish public authority, which administers various universal and means tested economic benefits including maternity and paternity leave benefits (Udbetaling Danmark, 2012). In 2012, the ministry for Finance established UDK to reduce the costs of public administration through mandatory digitalization, centralization, and by public procurement of UDK's IT systems. The Danish Pensions' fund ATP administers and provides technical support for UDK. At the time of the study, the author was employed at the IT University of Copenhagen, in a post doctorate co-financed by ATP's Digitalization division.

The study occurred at UDK's section in the city of Vordingborg, located 130 kilometers from ATP Headquarters. The Vordingborg section is one of three, which handles maternity and paternity leave. It employs 48 caseworkers, divided in two subsections. Caseworkers administer maternity and paternity benefits and answer telephone calls and written communication from citizens, businesses, doctors etc. The caseworkers are periodically required to classify completed calls according to topic using a point and click system on their computer screens (see Figure 1). They must pick a single topic in up to three categories before they can proceed to answer the next call. Historically, the use of this system has been quite poor with only 10 - 50 percent of calls being classified according to specific topics. The remaining calls are labeled as 'unknown'. The next section presents the methods applied to investigate and solve this problem.
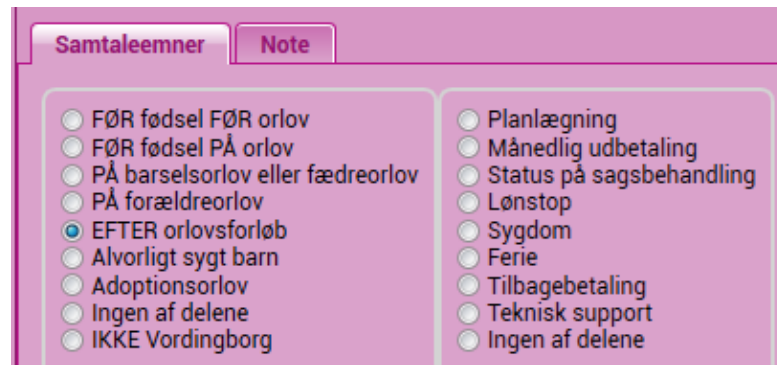
Figure 1: Screenshot of the call classification scheme, as it appears on caseworkers' screens

4. Method

This section presents the methods applied for analyzing and solving the research problem. The study is presented as Action Research (AR) using a framework by McKay & Marshall (2001) and Mathiassen's terminology for composing AR papers (Mathiassen, Chiasson and Germonprez, 2009).

4.1 Action Research

McKay and Marshall present AR as "an approach to research (…) committed to the production of new knowledge through the seeking of solutions or improvements to "real-life" practical problems" (2001, p. 47). This distinguishes AR from traditional research, as the researcher not only seeks to study a phenomenon as "an impartial spectator" (2001, p. 47), but actively seeks to change the object under investigation. A collaboration with practitioners is 'essential to the success of the AR process' (2001, p. 47), as each part brings their own expertise to solving the problem. The researcher brings theoretical and methodological knowledge, while the practitioners bring knowledge of the context where the problem occurs. McKay and Marshall note that AR projects have dual imperatives, and should contribute both to a research agenda and to practical problem solving (2001). Mathiassen has analyzed the composition of AR papers to help AR researchers present their work to the academic community (2009). He applies similar compositional elements as McKay and Marshall in describing AR papers' various contributions. Following Mathiassen, this paper is envisioned as a 'development problem solving methodology investigation', which "emphasize contribution to organizational problem-solving (M_{PS}) within a particular domain of IS practice (…), with an emphasis on developing new or revised problem-solving methods." (Mathiassen, Chiasson and Germonprez, 2009, p. 12). In this study, the problem, is caseworkers' low use of the call classification system needed to generate in-depth knowledge on multichannel behavior.

AR is often applied by critical researchers seeking to emancipate employees from a suppressive system; e.g. Berger's study of how mandatory digital post harms Danish municipal caseworkers (Berger, 2015). However, McKay and Marshall's presentation of AR is closer to social constructivism than critical realism.

> "``Facts'' in a social context are viewed as being given existence by as well as interpreted within some socially constructed framework of understanding (Avison, 1993). Hence, any scientific or systematic investigation of a social context cannot be regarded as value-free (Elden and Chisholm, 1993), nor can it be divorced from the situational and historical context in which it is given meaning" (McKay and Marshall, 2001, p. 47).

This version of AR is in line with the author's own research philosophical position, and appears fitting to Bharosa et al.' (2010) and Nygren et al.'s (2014) findings of how MCM initiatives are perceived differently in public organizations as well. Following their findings, the author sought insight into two areas: (1) the caseworkers' everyday work practices and their use of the call classification system, (2) the telephone calls themselves. Both of these areas revolve around gaining an understanding of a phenomenon from participants' point-of-view. Therefore, the author applied a qualitative approach and conducted empirical studies in the actual call center among the caseworkers, the specific context where the classification system was used (Blaikie, 2012).

4.2 Empirical studies and intervention

In February 2017, management at UDK Vordingborg contacted ATP for help to reduce telephone calls. In March, the author spent three days at UDK Vordingborg co-listening to 50 calls, interviewing callers, making observations and discussing findings with caseworkers. These qualitative studies yielded in-depth insights into specific calls and an understanding of why people were calling. However, management wanted to quantify the findings to generate knowledge for prioritizing and target MCM initiatives. The call classification system could yield a dataset covering the entire population of calls rather than a small sample hereof. Inspired by previous MCM studies and AR (McKay and Marshall, 2001; Bharosa *et al.*, 2010; van de Wijngaert, Pieterson and Teerling, 2011), the author suggested co-developing a new classification scheme with the caseworkers. Ideally, this would improve caseworkers' understanding of the classification scheme, and create engagement to the process of classifying calls. Figure 2 presents an overview of the entire research project, inspired by Bharosa et al. (2010) and McKay and Marshall (2001).
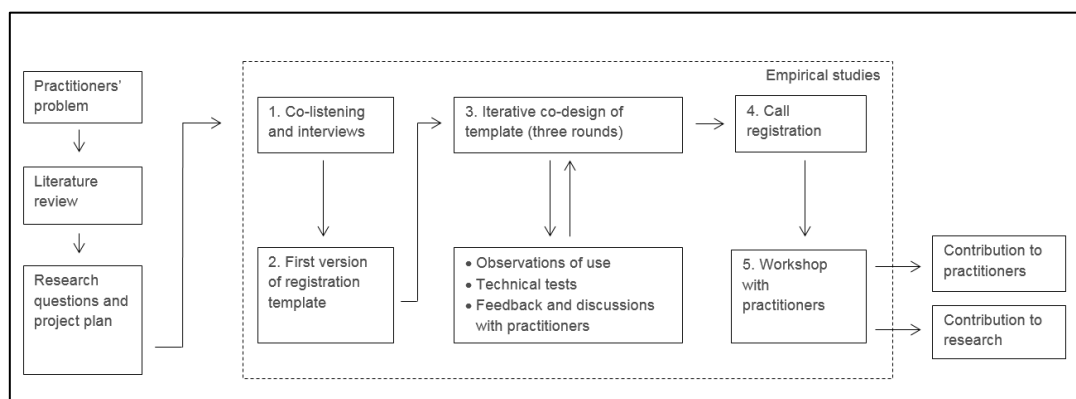

Figure 2: Overview of the research project

The intervention and iterative developed of the classification scheme occurred in UDK Vordingborg over three days in October 2017. The author wrote field notes to document the events (Blaikie, 2012). Based on the initial research in March, the author and a senior advisor from ATP developed a first draft of the classification scheme. The scheme has two categories. The first category covers where in the maternity / paternity leave process the caller is, i.e. before or after childbirth, which type of leave the caller is currently on etc. The second category covers the main reason for the telephone call. Due to the technical setup-up, only two categories are possible, and caseworkers must pick exactly one answer in each category. The final version of the template is included in Appendix A.

After an initial joint presentation for both teams, the intervention followed a specific process the next three days (see Appendix B for a detailed description). In the morning, the author and senior advisor presented the latest version of the classification scheme on paper templates for each section. They encouraged caseworkers to ask questions, and offer suggestions for adding categories or examples to the template and change wording to terms they used among themselves. During the day, the author and senior advisor co-listened to calls and observed the caseworkers as they classified calls. At the end of each day, feedback was received from four caseworkers during separate meetings. The new classification categories were sent to the technical support team at ATP Headquarters who updated the IT system. Further, the paper template was updated with changes clearly marked in red. Table 1 presents an overview of the changes made during the intervention.

Table 1: The development of the classification scheme

Template version	Categories in level 1	Categories in level 2
Version 1	• Six categories • 11 examples	• Eight categories • 19 examples
Changes from Version 1 to Version 2	• Added three new categories and five examples • Changed the name of two categories • Removed one example and added one example in two categories • Changed the wording in two examples	• Removed one category and two examples • Added a new category and four examples • Changed the name of two categories • Removed 3 examples and added 10 examples and in 6 categories • Changed the wording in eight examples
Version 2	• Nine categories • 16 examples	• Eight categories • 28 examples
Changes from Version 2 to Version 3	• Removed one example and changed the wording in one example in one category	• Added one category and two examples • Changed the name of one category • Removed one example and changed the wording in one category
Version 3	• Nine categories • 15 examples	• Nine categories • 29 examples

During the intervention, technical and practical problems concerning caseworkers' practices for logging calls were also discovered and solved. On the second day, a technical problem was encountered. When the new categories appeared on the caseworkers' screens, the ordering of items was different than planned. According to the plan, the ordering in the first level should be temporal following a typical maternity leave process. On the technical support staff's screen, the ordering appeared alphabetically. On the caseworkers' screen, the ordering followed neither of these logics. Finally, the technical support staff discovered that the ordering of the categories on the caseworkers' screens were listed according to the order in which the categories had been updated, with the newest categories appearing first. The technical support staff were located at ATP Headquarters 130 kilometers away, and could not tell what the classification system looked like on the caseworkers' screens. If the author and advisor had not been present in the use context this error would not have been discovered.

After the intervention, the caseworkers used the improved classification scheme for eight weeks and classified over 10.500 incoming calls. The classification rates were 90 percent at level 1 and 95 percent at level 2. Previous classification rates ranged from 10 to 50 percent. The author and advisor returned to the call center for additional observations and to interview management and two caseworkers about their experiences of the intervention. Management and caseworkers stated, that the system worked fine, did not take up a lot of time, and that they did not find it difficult to classify calls. During observations, all parties were in agreement with the classification of calls.

When the classification was completed, the author and advisor returned and presented the data along with management and the head of UDK Vordingborg, to thank the caseworkers for their cooperation and show them the results of their work. Both caseworkers and management expressed their interest to participate in additional collaborations. The co-designed classification scheme was used as a facilitating framework at a joint workshop in December 2017. As mentioned in the introduction, the generated data and subsequent improvement of UDK services, will be presented in future papers.

5.   Findings and discussion

This section presents and discusses the main findings and lessons learned from the intervention in relation to previous MCM studies by Bharosa et al. (2010) and Nygren et al. (2014). The main methodological experiences from the intervention are:

1.   The necessity of being in context to identify problems and their solutions

The most important finding from the project is the necessity of being on site for an extended period, physically co-located with caseworkers to succeed in identifying and solving the problems needed to make organizational changes. By spending time in Vordingborg, the author and advisor gained insight into the everyday work practices of the caseworkers. Through observations, discussions and co-listening to calls, they witnessed the call classification system and interaction with citizens from the caseworkers' point-of-view.

Being present in the call center also led to the discovery of technical and organizational issues, which were not observable from ATP Headquarters. The example of how the categories appeared in different order at ATP headquarters and on the caseworkers' screens in Vordingborg supports the claims made by Nygren et al (2014) that management and caseworkers perceive the world differently. However, it also expands upon their findings by suggesting that technology, not just physical distance, can create and reinforce such different perspectives. By being physically co-located and collaborate to solve a common problem, these perspectives were brought closer together. In time, and with additional collaboration it may be possible to fully fuse the different perspectives. Physical co-location afford face-to-face communication, which is superior to generating understanding among interlocutors compared to the telephone, or worse, e-mail. The irony of having to resort to traditional communication to improve the use of digital self-service channels was not lost on the participants.

2. The necessity of creating ownership and engagement among all stakeholders

The caseworkers quickly began to explain and discuss categories with. Being able to influence the template, and having their own suggestions added, created ownership to the process among caseworkers. This is in line with the findings of Bharosa et al. (2010) on the importance of including caseworkers in MCM projects. The caseworkers who participated in the afternoon sessions became champions of the project.

Caseworker 1: I think we have been really involved in the process, and I think you have been good at informing us throughout.

Caseworker 2: You have been good at involving us.

Caseworker 1: Yes, and made changes when we've offered suggestions and you could see it made sense. Especially since you were also co-listening to calls, and could see, 'Yes, that makes sense. This (points to paper sheet with the classification and examples) should be there [in one category] but here [in another category]'. I liked it when we got the third version, and it was adapted [to our situation], and it fit the calls, and that's the one we used going forward.

3. The necessity of face-to-face interaction with caseworkers

Previously, middle management at Vordingborg would receive information about new classification schemes by e-mail or at meetings with other UDK sections. They would then either forward these e-mails to caseworkers or inform them of the new categories at daily meetings. This information was not accompanied by explanatory texts or examples, and the categories appeared without any explanatory text on caseworkers' computer screens. This explains the caseworkers' frequent use the 'none of the above' option.

Caseworker 1: Previously we've been informed that now there are new categories we have to fill out. I think that this time…

Caseworker 2: (Interrupts) It hasn't been like this, it's been a lot better this time (laughs) (…)

Caseworker 1: We have the explanations next to the categories, and we know where to classify calls. It hasn't been like that before.

Interviewer: When you say you were informed previously, how did that happen?

Caseworker 1: We got an e-mail saying that in this period, this and that is being measured and we need to fill out the categories. (…) There are different things within each category. Previously you just got [the main categories], and you might not find what you were looking for, so we wrote a lot of notes instead. We didn't feel like the categories fit. This really fits!

Physically co-presence allowed discussion of each category and their possible interpretations. According to UDK management the continued presence of the author and ATP senior advisor in Vordingborg also demonstrated commitment to the collaboration, which was inspirational to management and caseworkers.

4. The necessity of physical artifacts which fits the caseworkers' work setting

Finally, the caseworkers explained, that the printed version of the classification scheme (Appendix A) was valuable as it contained examples for each category. Most caseworkers kept these printed forms on their desks, where they could easily access them. The specific names of the categories, and examples of the areas these covered, were changed to caseworkers' wording and suggestions. This created a sense of ownership and familiarity with the classification scheme, which aided the classification process. It also follows Nygren et al.'s (2014) suggestion of connecting the e-government service to the work practice.

Interviewer: Did you talk about this among yourselves? If you got a call and did not know where to place it?

Caseworker 1: No, I think people just chose 'none of the above'. It makes more sense now because, we have this note [the printed sheet with explanations] and we have talked about it, and we can read what it says. I did not have any doubt, after a call, I did not have any doubt that this goes there and that goes here. (…)

Caseworker2: This [the printed sheet] has been pure gold. Really good.

Interviewer: A physical…

Caseworker 2: To have a physical [note] because sometimes you're in doubt…

Caseworker 1: You just have these on the screen [the names of the categories, not the examples]

Caseworker 2: Especially when you get to level 2 [the call topics] and you're thinking, what did 'technical support' mean again? And then this was really good.

Caseworker 1: Everyone, as in <u>everyone</u>, has the note on their desk. And that's really good.

This is another example of how being in context creates awareness needed to overcome technical limitations. The system did not show examples for the category, making it difficult for the caseworkers to choose the right category. A simple sheet of paper, which they could have on their desks, solved this challenge.

5.1 Discussion

The purpose of this study is to improve the use of a system used to generate knowledge of multichannel behavior. Specifically, to increase the volume of data created on incoming calls, and the validity of this data. In line with (Nygren, Axelsson and Melin, 2014), this study finds that management and caseworkers had different awareness and perceptions of the organization's strategies, and the specific instruments used for this strategy – the classification scheme. These different perspectives were reinforced by physical distance, technical limitations, and e-mail, the communication channel used to inform caseworkers of the classification scheme. Once these problems had been identified, however, simple tools, such as a printed note and face-to-face communication, was enough to overcome them. Ultimately, this study finds that it is possible to create a shared understanding among stakeholders, or at least a closer perspective, through collaboration, and co-design of it-artifacts and the processes surrounding their use.

The call classification part of a larger MCM process, as illustrated in Figure 3. Each step in this process involves different actors, and information in different modalities. To move between these steps, the involved actors must interpret the information and transform it from one modality to another. First, the citizen must interpret the benefit system, presented in text form in letters and on websites (step 1). If they have problems understanding the system, they can talk to a caseworker (step 2). However, this requires the citizen to transform their difficulty of understanding of the system (a cognitive process) into questions, which they can ask caseworkers (verbal interaction). Afterwards, the caseworker must interpret what the conversation concerned by checking two boxes on their computer screen (step 3). This transforms and reduces the verbal interaction, typically lasting around three minutes, into quantitative data, accessible through a spreadsheet. Analysts and management interpret this data at an aggregated level (step 4), where it may be transformed into specific MCM recommendations. Some of these recommendations end up as changes to the UDK benefit system; as instructions for caseworkers, voice messages on the telephone system, information on websites, or perhaps as changes to the laws concerning maternity and paternity benefits (step 5). This study focuses on a

single step of this process (step 3), however, it may be possible to create a joint understanding among the various actors involved in the following steps as well. This is a relevant subject for future studies.
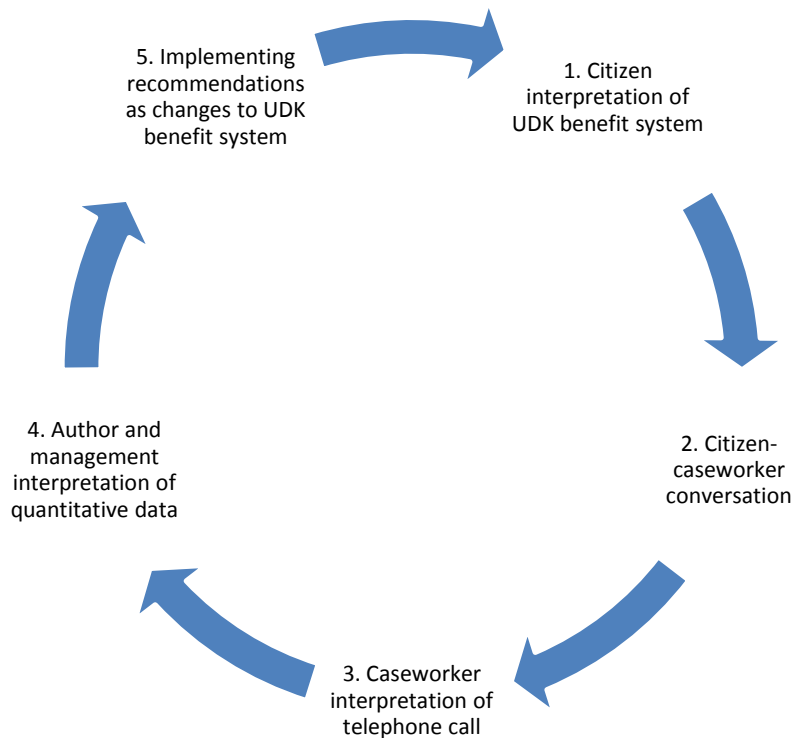

Figure 3: The interpretation – translation loop in a multichannel management process

6. Conclusion

This paper initially posed the research question: How can knowledge on citizen multichannel behavior be generated through practitioner collaboration?

To answer this question, the author presented a study of the co-creation of a classification scheme, which caseworkers use to classify incoming telephone calls. All parties contributed actively to the collaboration, which took place in the actual call center where the caseworkers answer and register calls. In line with previous studies, the study finds that there were initially different perspectives on the organizations' channel strategy, and uncertainty regarding how the calls should be coded, i.e. what each classification category entailed. However, in collaboration with the end users of the system (the caseworkers) a classification scheme was created, which both fit caseworkers' perception of calls and their internal terminology, and generated results, which are usable by scholars and management. By spending time in the actual work setting, the author witnessed how the system appeared from the caseworkers' point-of-view. This created awareness of problems not visible from our organization's headquarters. During follow-up interviews the caseworkers and their management said, that they appreciated to be part of the project, and that they approve of the revised classification scheme. The observations, and large increase in the use of the system confirm this.

An important limitation of this study is that the success of the project is measured by the improved call classification rates, and management and caseworkers' statements. Follow-up observations showed agreement between the author, the ATP consultant and the caseworkers on how to classify calls, but the entire data material consisting of 10,500 coded calls is too big to validate. Some caseworkers may merely pick a category at random, or interpret and classify calls differently than others would have. It is also possible, that they present the project in a positive light because they know management and other were highly involved in the project.

There are several possible explanations to the increase in classified calls: (1) The intervention itself, along with the increased focus by all parties on classifying calls, (2) the co-creation process, where caseworkers

participated in creating their own system, (3) the improved classification scheme, along with the explanatory printed guide and the verbal discussions concerning the explanation of each category. Likely, all of these factors have contributed to the observed change. However, resources are often scarce in public organizations, which may not be able to conduct a full intervention. Therefore, future studies could examine the impact of each area in isolation, for instance by presenting a fully developed classification scheme to caseworkers – in person - and comparing classification rates to this study. Moreover, telephone calls are not citizen's only channel of inquiry. Future studies add different categories to the template, such as if the caller has interacted with the organization through other channels, or with other external organizations or parties. In this way more knowledge can be generated on this important topic, and how to improve digital services for citizens.

Acknowledgements

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Appendix A: The final call classification scheme

Call topics – VERSION 3, final. For weeks 41 - 44

LEVEL 1: The citizen's situation

Category text	Description and examples
BEFORE childbirth / BEFORE leave	• The child has not been born yet, and leave has not started yet • Not if mother is 'ill under leave'
BEFORE childbirth / ON leave	• The child has not been born yet • 4 weeks before birth (pregnancy leave) • Sick while pregnant
ON maternity or paternity leave	• Maternity leave • Paternity leave
ON parental leave	• Parental leave – mother, father or both
AFTER leave	• Have been on leave (but not anymore) • 'Leftover' leave
'Child seriously ill'	Everything concerning 'child seriously ill' [ENDS HERE]
Adoption leave	Everything concerning adoption leave [ENDS HERE]
None of the above	• E.g. wrong number • E.g. calls from other parties than citizens • Other things, which does not fit above [ENDS HERE]
NOT Vordingborg	ONLY OTHER CENTERS [ENDS HERE]

Principles for registering calls

If a conversation regards more than one topic:

1. Choose the topic, the customer initially asked about (the triggering cause of the call).
2. If that is not possible, choose the topic, which took the most time of the conversation.
3. Only use 'None of the above' if the call did not concern <u>any</u> of the topics.

LEVEL 2: The citizen's request

Category text	Description and examples
Planning	• Perception of rules, options, process and economy • Division between mother and father and extension of leave • Status regarding how much leave is left • Instructions on partly returning to work • Planning transition between forms of leave NOT 'SALARY STOP'
Monthly payments	• Specific payments • Deductions and 'on account' payments • How much do you pay out this month? • How much will I get? • Why this amount? / disagrees with amount / calculation
Status on casework	• Questions regarding processing time / answers / decisions • Did you receive my application/ information or hospitalization • Disagrees with information / new information for casework • Documentation related to status
Salary stop	• Transition from pay to maternity / paternity leave • Coming pay stop is set in motion • Documentation in relation to salary stop
Illness	• The pregnant is ill • Doctor's note and other forms of documentation
Vacation	• Vacation rules / what do I need to do? • Citizen is on vacation / alters information about vacation • Vacation card to be signed • Documentation regarding payment
Refund	• Citizen calls, because she has to refund received money • Request for giro form / payment information • Questions regarding amount / calculation behind amount
Technical support	• How do I submit information / application? • Questions on digital post / e-Boks
None of the above	Only, if the conversation has not concerned any topics above. Also complaints, father trying to get mother's leave, public access

Appendix B: Timeline for the intervention and empirical studies

Time	Actions	Actors
February	• UDK Vordingborg contacts ATP for help	UDK Vordingborg
March	• The first author conducts qualitative studies at UDK Vordingborg: Co-listening to 50 calls, interviews with callers, discussions of calls with caseworkers and management	First author, Caseworkers and management at UDK Vordingborg
May - September	• Physical and virtual meetings about results and possible actions to reduce calls • Development of preliminary version of call classification scheme	First author, senior advisor and business analysts at ATP, Management at UDK Vordingborg and UDK Frederikshavn
October Week 40 (3 days)	Intervention Wednesday • Joint presentation of project and first version of classification scheme • Co-listening to calls and observations • Meetings and feedback from select caseworkers • Edits to classification scheme (Version 2) • Additional phone queues added. Thursday • Analysis of Wednesday's data • Presentation of Version 2 and feedback session with caseworkers section 1 • Version 2 goes live • Presentation of Version 2 and feedback session with caseworkers section 1 • Co-listening to calls and observations • Technical edits to classification scheme • Meetings and feedback from select caseworkers • Edits to classification scheme (Version 3) Friday • Analysis of Thursday's data • Presentation of version 3. Feedback and group exercises with caseworkers section 1 • Feedback from select caseworkers • Presentation of version 3. Feedback and group exercises with caseworkers section 2	First author, senior advisor at ATP Digitalization, Management at UDK Vordingborg UDK Caseworkers ATP technical support
October Week 41 - 44	• Classification of calls • Co-listening and observations • Group interviews and feedback from caseworkers and management	First author, ATP senior advisor, UDK management and caseworkers Vordingborg