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Giving help or information? A human advisor and a chatbot answers requests from citizens

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Abstract. Building on CSCW research on knowledge and expertise sharing, this exploratory paper presents examples of how a human call advisor answers citizens where the call advisor takes an active role in helping the caller make their request more precise and contrasts with how a chatbot answers citizens requests. Previous research about expertise sharing is expanded to also involve expertise sharing with citizens. This paper makes a case for including research of expertise sharing between representatives of the public administration and the citizens in CSCW research. Reinvigorating empiric and conceptual research on differences between expertise and knowledge will be important to understand the challenges of providing a chatbot first for answering questions from the citizens.

Introduction

To an increasing degree, work is transferred to people in their homes in their various roles as citizens (Verne and Bratteteig, 2016), home care workers (Bratteteig and Wagner, 2013), or home office workers (Ciolfi et al., 2020). For several years public services have been closing their offices where citizens previously could meet in person to ask questions and receive guidance over the counter. As members of a modern welfare state, citizens are now expected to navigate and handle their affairs in several public domains by themselves. Previously the citizens could meet face to face with “the street-level bureaucrats”, representatives of the public sector who listened, answered questions and sometimes gave advice in how a citizen could proceed in a case. The street-level bureaucrats interpreted the laws and politics of the government in actual situations (Lipsky, 2010). Now many public services instead provide a call centre service where citizens can talk with a call advisor over the phone (Verne, 2015; Verne and Bratteteig, 2016). The call advisors share their expertise within the domain and apply it to the callers’ life situation and circumstances (Bratteteig and Verne, 2012; Verne, 2015; Verne and Bratteteig, 2016).

In 2010, the Tax Administration Call Centre in Norway received 2 740 045 calls where 2 179 278 were answered (of a population of 4 858 199, but also some non-norwegians call). Knowing the relevant rules and how they apply to you is necessary to manage your rights and duties as a citizen. The citizens do not know precisely what information is needed and why (Borchorst et al., 2012). However, management considers call centres to be an expensive, staffed service and the last few years chatbots have been presented as the first point of contact for public administrations (Verne et al., 2022).

A major research stream within CSCW has for a long time been concerned about sharing of knowledge and expertise, mostly in a commercial setting and within company boundaries. The research literature distinguishes between knowledge and expertise, where knowledge concerns factual information and expertise is seen as knowledge applied to an actual situation and circumstances and communicated between people (Ackerman et al., 2013). In the first generation of research on knowledge sharing, knowledge is seen as residing in a memory store or repository of an organisation while in the second generation expertise is seen as socially constructed and distributed (Ackerman et al., 2013; Ackerman and Halverson, 1998, 2004). The notion “expertise sharing” emphasizes the close intertwinement of work and knowledge, as well as the situated, contextual and social nature of knowledge (Ackerman et al., 2013).

In this exploratory paper, I contrast how the human call advisor answers the callers with how the chatbot answers users. The paper shows that the call advisor shares expertise with the caller while the chatbot shares knowledge which the users will have to apply to their own life situation and circumstances with little

help. In the discussion, I problematize that the citizens often must handle their affairs without help from competent representatives from the domain in question when chatbots increasingly are being put to the front of public organizations' contact with the citizens.

Call centres

Call centres are studied within CSCW where the active role of the call takers is described from several perspectives. Muller (1999) showed that the directory services operators' expertise and knowledge about their work added value to their customers' queries. Making the operators' contribution visible led the management to abandon a plan for full automation of these services. The nature of the operators' work can be described by the seemingly contradictory notions of both improvisation and choreography, indicating that the operators' work routines are a craft-like performance (Whalen et al., 2002). Flexible communication and emotional work are important for the operators to generate a good interaction with the customers (Maass and Rommes, 2007). In making a general classification scheme for the calls "fit" into the local arrangements, the operators carry out invisible work (Martin et al., 2007).

In emergency calls, local geographical and temporal knowledge of the operators is valuable and what is important in the call is emergent (Martin et al., 2007) as well as the topic of the call (Normark and Randall, 2005). Reading the emotional state of the callers to an emergency call centre was important as a high need for help was expressed by the callers as fearful and negative emotions (Svensson, 2012). The capability to delineate symptoms from non-symptoms in an emergency call depends on the operator's communicative competence as well as organizationally provided routines (Svensson, *ibid*).

Operators in a call centre for supporting independent living of elderly with care needs were involved in a dialog of "watching" and "checking" the equipment for supervising seniors at home. The operators asked the seniors to test their alarm system, and the operators called back to check if everything was ok, which in turn led to a continuous dialog. This activity was outside the protocol of the operator (Farshchian et al., 2017).

These studies are mostly about commercial or medical domains, and there is little research on call centres in a governmental domain where the callers' democratic rights and duties as citizens are at stake. In 2010-2012, I carried out fieldwork in the Tax Information Call Centre focusing on what the callers found difficult with doing taxes (Verne, 2015). Another public administration, The Norwegian Labour and Welfare Administration, introduced a chatbot as the first point of contact with the public in 2019 and I have studied the logs from citizens' chat sessions focusing on how the chatbot answers the users' request.

Chatbots

A chatbot is a computer system which a user can text or ‘chat’ with over the Internet in real time (Følstad and Brandtzæg, 2017). They are often used in customer service for commercial or productivity reasons to get answers instead of making a phone call or reading through much text. Brandzaeg and Følstad (2018) went on and studied why users choose to use a chatbot and find that they help users to obtain timely assistance or information in addition to being used for social and entertainment reasons. However, chatbots are also known to give inadequate answers and for some, humans fill in responses behind the scenes so that the chatbot’s actual performance is camouflaged (Grudin and Jacques, 2019). Many chatbots are designed for a commercial context with a focus on profit and customer satisfaction (Adam et al., 2021). As to the information provided by chatbots, there are hardly any studies within education research of how a chatbot meets the information needs of the learners (Wollny et al., 2021).

Chatbots today are usually made with some Artificial Intelligence component, usually Machine Learning, to analyze the users’ input. The responses from Anna, the chatbot in this paper, is made by experienced welfare advisors who know what people want to know from the welfare administration. Anna is a pseudonym for the chatbot in this study who is presented with a female name. This chatbot is designed as a repository of knowledge where the questions are matched to a predefined set of answers (Caldarini et al., 2022).

Verne et al. (2022) shows that the welfare chatbot sometimes gives an answer that are “disguised as correct”: the response is well formed and correct but important information for a satisfactory answer to the question is missing. The citizen will need to have previous domain knowledge to find that something is missing and ask for more information.

Knowledge and expertise sharing

The CSCW view on knowledge and expertise sharing is that knowledge and expertise are different concepts. Knowledge is seen as “facts” or decontextualized information, while expertise is seen as applied knowledge which is situated and contextualised. Expertise is shared in social ways (Ackerman et al., 2013; Ackerman and Halverson, 1998, 2004). An earlier strand of CSCW research aimed to share knowledge in large repositories to make it independent of the knowing human (Ackerman et al., 2013).

For knowledge to be available in a repository for reuse, it must be decontextualized to be relevant in other contexts than the original. When knowledge is applied in another use situation, it must be recontextualised to be meaningful and helpful in the new situation (Ackerman et al., 2013; Ackerman

and Halverson, 2003, 1998). Knowledge stored as data resides in several smaller or larger repositories such as people's individual memory, scraps of paper and large organizational internal databases (Ackerman and Halverson, 1998).

Several critique points were raised to this repository view of knowledge sharing: Decontextualization is difficult as it is not obvious in advance what will be important knowledge to be stored for future use. Decontextualization is "difficult to achieve, and even harder to achieve for complex problems" (ibid, p. 539). In addition, important for recontextualization is to know the author and her expertise. Also, maintenance of knowledge in the repository for long term use will be difficult. Finally, repository systems promote an objectified view of knowledge, where Ackerman and Halverson (1998) "found it more useful to analyze information as a duality of process and object" (p. 540).

Methodology

In 2010-2012 I carried out ethnographic fieldwork (Blomberg and Karasti, 2013; Crang and Cook, 2007) in the Tax Information Call Centre by listening-in to 474 calls from citizens to the call advisors as well as interviewing 14 employees in various positions in the tax administration and one person in a Tax NGO. During listening-in, I was sitting together with the call advisor and could hear both the caller and the call advisor, and watch what the call advisor did to answer the request. I could see the computer screen and how they looked up various information from the internal tax databases, e.g. the National Population Register, taxation registers, and letters to and from the caller.

The calls were analysed inductively focusing on the issue of the call. I could immediately see that the call advisors acted differently for different calls depending on how they understood the request: for some calls they asked for the person identification number and looked up information in tax databases, for other calls they merely explained the rules - perhaps after asking for more precise information about the caller's life situation and circumstances. Detailed methodology is given in Verne (2015).

In 2019, we received several thousand logs from chat sessions between a citizen and the welfare chatbot. Logs were read looking for sessions where the chatbot did not seem to give a very good response. First, we selected logs where the citizen explicitly expressed dissatisfaction, next we selected logs where the session did not seem to give a relevant and satisfactory response from the chatbot. Using Suchman's (2007) framework for human-computer interaction we analysed the logs to see how the chatbot used information from the user to respond to the request. In Verne et al. (2022) some of these are given a detailed analysis of how the responses matched the questions.

Sharing expertise with the citizens

Tax in Norway is widely automated (Wroldsen, 2008) and many citizens do their taxes by checking figures already prefilled from the Tax Administration. They get little experience and learn little about the tax domain (Verne, 2015). The tax call centre provides first-level response to all calls to the tax authorities, and this call centre differs from the call centres described in the CSCW literature in several ways as it is neither a commercial nor an emergency call centre; doing taxes rarely generates acute situations.

In the following I give two examples of calls from citizens to the tax call centre. The examples concern issues that relate to the citizen and his or her life situation, which is often the first thing the advisor needs to find out before answering the request. Verne (2015) suggests describing those as questions about “the shape-sorting box”, as the citizens will need to know how elements of their own life fits into the categories of tax rules and regulations. Also, of importance is how these are defined and practiced by the tax administration. The shape-sorting box illustrates the challenges of identifying and interpreting events or circumstances from one’s own life and match them with the available set of categories (Bowker and Star, 1999; Suchman, 1994a, 1994b).

Many callers merely describe their situation or a problematic tax issue that has led them to make this phone call, without formulating a question. Sometimes an advisor asks clarifying questions before reinterpreting the original question to one they can answer in a precise way relevant to the caller’s situation.

Depending on the question, there is variety in how the call advisors answers the requests. Many questions can be answered in a simple way by explaining the rules of the topic which the call advisor usually knows by heart. Often the advisor looks up the caller’s tax data in the databases of the tax administration to understand the tax situation, which is often underspecified or misleading as told by the caller and give relevant explanations and advice.

The callers’ requests are often formulated as statements or claims more than a question. For example, a caller describes her situation (e.g., “I have not received an answer to my complaint”) which leads the call advisor to look up in the internal tax system if she can find any indication of an explanation there. Often the call advisors help a caller by disentangling a problematic tax issue (Bratteteig and Verne, 2012) and point to steps the caller can take to proceed with their case.

A prominent feature of the tax call centre as a workplace (Luff et al., 2000) is that communicating with the callers takes more of the call advisors’ workday than communicating with their co-workers. During their call duty they rarely interact with their colleagues; they can answer most requests without looking up digital or paper-based information. However, they often look up data about the caller in the internal databases.

In the following, I present two calls where the call advisor actively helps the callers to understand and proceed with their own tax issue. (NAV is the welfare administration that also handles pension).

Example 1. *The caller opens by explaining that she has recently received her first pension payment. She had expected that no taxes would be deducted, but the welfare agency has withheld 30% of her payment. Nils explains that this has happened because she has not updated the basic information for her tax card. The caller seems surprised and says “They told me nothing about this at NAV”. Nils will post her a form so that she can update her tax card information. The caller explains that she will need an exemption card, and Nils explains how to fill in the form. The caller explains that she received her first pension payment on Friday. Nils fills in the entries in the form with the caller’s pension and already paid taxes and closes the call by saying “You just sign there and return the form to the address listed”. After the call he comments to me “People think that everything happens automatically. But it doesn’t”. (20111121-10)*

Many callers expect that their taxation may change when they retire, but they do not know how. This caller was not aware that she herself had to manually update her personal information in the Tax Administration’s databases for the correct amount of tax to be withheld from her income when she retired. The advisor helped by situating and contextualising her tax knowledge by applying the rules to the caller’s life situation, explained steps the caller could take to update her figures and helped her in practice to report the changes.

In many phone calls, the callers described a life situation that would make it extra challenging for them to handle his or her tax issues. Some had recently lost a husband or wife, and in addition to the emotional strain had little knowledge about doing the taxes since this had been handled by the deceased. One man was in hospital, seriously ill and confused, but still tried to handle the value assessment of his house on the phone. Many were recently divorced and had become single parents with a more pressed economic situation. Others had lost their work; some had work that brought them far away from home. One man was calling from a fishing vessel far out in the sea; another man was homeless and living on welfare benefits. The call advisor helped them in handling their tax affairs in a challenging life situation.

In some situations, the call advisor helped when citizens needed tax information in contact with other institutions, as in the next example.

Example 2. *The caller requests a tax certificate (“ligningsattest”) to ask her bank for a loan. Advisor Nils says, “That says nothing, are you sure that is what you want?” The caller reads out loud a text from the bank that explains what she will use it for, and Nils understands that she needs a copy of the full Tax return form. He prints it out, puts it in an envelope and sends it to her address recorded in the population register. (20111010-3)*

Nils knows that many callers mix up the need to provide the tax certificate with the need to provide the full tax return form as documentation in different situations. He contextualizes the request with a clarifying question about what the caller needs to document so that he can give what the caller needs when he asks for something else. The tax certificate is not sufficient in situations where the citizen is required to document details of personal fortune or debts. The advisors know and can explain the difference.

Citizens often receive conflicting or confusing information from e.g. friends or the media. Misunderstanding and errors in their tax affairs may have serious consequences for them. Advisor Jan Tore said that the Tax Administration is “an agency with enormous possibilities for sanctioning you if you make a mistake, and I think this prevents people from finding out things on their own”.

“Shape-sorting” issues are often about terminology and what a term or tax concept will mean in practice for a citizen. The call advisor knows which points need to be clarified and asks questions for the citizens to be more precise on issues of importance for the application and relevance of the tax rules and regulations. Many call for a confirmation to what they have found out themselves.

The call advisors gave both factual information about the laws that applied in particular situations and recontextualized and situated the laws to the actual life situation and circumstances as the citizen explained. Quite often the caller was not able to describe their tax situation, at least to the level of precision the advisor needed for a good answer, and in such cases the adviser looked up the various databases of the tax administration to see how the citizen was represented there. Through blending what the citizen explains with what the advisor can see in the databases, the call advisor learns about the caller’s tax situation and recontextualise the rules based on what they find there about the caller’s life and tax situation. The advisors adapt what they say to the impression they get of the caller’s knowledge about tax and perhaps also to how they express their understanding about e.g., economy, numbers or percentage calculations.

Presenting information to the citizens

All answers from the welfare chatbot Anna are made by experienced welfare advisors who know what kinds of questions the citizens often ask. All answers are in this respect correct. However, the matching of the citizens’ questions to answers is done by Machine Learning. This analysis matches the user input sentences with the stored questions and selects the answer to give from the best fit between question and answer. In Verne et al. (2022) some of these chat sessions are given a detailed analysis of how the responses matched the questions.

This machine learning analysis plays an important role as it sometimes happens that a “correct” answer is given to the wrong question, i.e., a different question than the citizen asked. The chat sessions show how the citizens’ requests

provide very little contextual information, probably because the chatbot's introductory text asks for short questions. In the chat session there is no human advisor present that can ask the citizen for clarifying questions. The following examples from the chatbot also concerns the shape sorting box where the welfare rules and regulation need to be matched with the citizen's life situation.

Example 3.

The citizen	The chatbot	Comments and explanations
	My name is Anna and I am a chatbot. I am best adapted to answering short questions. Remember to include what type of benefit you are asking about. How can I help you?	The chatbot's opening phrase. Anna is a female pseudonym for the welfare chatbot.
Going to have a child, what do I have to apply for?	Sorry, but I do not understand what you are asking. I will understand you better if you write short questions and include which benefit it is about. Can you try to ask the question in a different way? <ul style="list-style-type: none"> • Need more help (button) • No (button) 	
How do I get money when I am expecting a child?	The day on which the payment is transferred depends on the benefit in question. You can see the payments from WA on Your payments on WA's website, but they will not be displayed until they have been credited to your account. <ul style="list-style-type: none"> • Overview payout dates (button) • Overview payout (button) • Not received money (button) 	The chatbot answers with information about payment dates, which is not what this citizen asks about.

This citizen asks an open question about which benefits she may be eligible for in her situation but does neither get a good answer nor receive help to formulate a better request. However, the citizen seems to understand that the answer is irrelevant and quits the chat session, perhaps to make a phone call for a better response.

In the next example, the chatbot has not given a sufficient response, but we cannot tell if the citizen is aware of that. The chat session is long, and only the first three requests from the citizen are shown here.

Example 4.

The citizen	The chatbot	Comments and explanations
	My name is Anna and I am a chatbot. I am best adapted to answering short questions. Remember to include what type of benefit you are asking	The chatbot's opening phrase. Anna is a pseudonym for the

	about. How can I help you?	chatbot, which has a female name.
can a young disabled person married to a foreign single mother receive child benefit and child supplement	<p>If you are a single mother or father, you may be entitled to extended child benefit if you are living alone with children. The extended child benefit is a child benefit for one more child than what you actually are living together with. You have to apply for an extended child benefit, it will not be automatically granted.</p> <ul style="list-style-type: none"> • Who is entitled to extended child benefit? (button) • <list of other options regarding extended benefits> 	The chatbot explains the rules for being a single mother and does not ask back to find out if this mother is single or married.
Who is entitled to extended child benefit?	<p>If you are a single mother or father you can receive extended benefit if you are living alone with the child and:</p> <ul style="list-style-type: none"> • you are separated, divorced or widowed • <continues to list criteria for extended benefit> <p>If you do not have common children with the person you have been living together with, we do only need documentation that you are not living together. It could be:</p> <ul style="list-style-type: none"> • Declaration of breakup • Separation permit • When does the right to extended child benefit cease? (button) • Apply for extended child benefit (button) • Shared child benefit (button) 	The chatbot gives general information about extended benefits for a single mother or father and the requirements for being a single parent.
...	..	
can a foreign single mother receive child benefit and child supplement	<p>If you are a single mother or father, you may be entitled to extended child benefit if you are living alone with children. The extended child benefit is a child benefit for one more child than what you actually are living together with. You have to apply for an extended child benefit, it will not be automatically granted.</p> <ul style="list-style-type: none"> • Who is entitled to extended child benefit? (button) • <list of other options> • Payment (button) 	The chatbot gives general information about benefits for a single mother or father.
(The citizen continues to ask for extended benefits for single mothers)		Four more requests are not included here.

This citizen asks several detailed questions about benefits for a single mother without the chatbot “asking” if the mother in question indeed is single. The citizen seems to focus on the mother being foreign without the chatbot responding

explicitly about that. It does give information about who counts as a single mother but does not focus directly on this particular piece of information in its responses – an issue which will be important for finding out if the single mother mentioned will be eligible at all. This citizen can well believe that s/he will be entitled to extended child benefits without that being the case. This stands in contrast to the call advisor in Example 2 who immediately asks the caller what he will use the tax certificate for and finds out that what the caller needs in this situation is not what he asks for. In Verne et al. (2022) these examples are studied in detail where how the chatbot helps the citizens to formulate better requests is described.

Discussion and open issues

The examples presented above show that a human call advisor shares expertise with the caller about tax rules and regulations applied to the caller's life situation and circumstances - in contrast with the chatbot which presents information to the citizen about the rules on a topic extracted from the user's request. The knowledge repositories of the 1990-ies were developed and used in a workplace internal setting (Ackerman et al., 2013; Ackerman and Halverson, 1998), but the welfare chatbot "shares" knowledge with the general public. Workplace internal users can ask colleagues for help in how to recontextualize what they find in the repository. They will learn to use it and thereby become familiar with the knowledge repository over time. However, the citizens will probably not develop a similarly familiarity with a public chatbot that they use occasionally.

Taxation and welfare categories such as "pensioneer" or "single mother" imply a "spatial, temporal, or spatio-temporal segmentation of the world" (Bowker and Star, 1999). There is work involved in trying to fit into such categories, and at the juncture where people's experience meets category systems, work is often invisible or repressed (Star and Strauss, 1999). For a democracy it is important that citizens receive guidance and help from those who know the rules or categories to apply these to the citizens' life situation and circumstances.

The laws and regulations are written in a general and absolute way and are decontextualized from the law makers' side. The human call advisor helps the citizens to recontextualize and situate the laws and regulations to their life situation and circumstances. The chatbot gives general information which needs to be recontextualised and situated by the citizen – without help from those who know the rules and how they have been interpreted in similar situations previously. The chatbot imitates recontextualizing and situating by presenting buttons indicating alternatives to choose among. We can see that the user does not always find out if and how they fit as in the example about the married single mother.

The welfare chatbot does not operate in a commercial setting. If a commercial chatbot gives erroneous or misleading responses, the company employing it may

for example lose a sale or a customer. If the welfare chatbot gives a misleading response, the error will be experienced by the citizen who will not know and may not learn about benefits for which they are eligible. This difference is important.

Employing a chatbot for giving information to the citizens about welfare benefits set more at stake than for a commercial or social chatbot (Verne et al., 2022). Current-day expectations to chatbots seem to be analogues to the expectations to knowledge repositories in the 1980-ies and early 1990-ies (Ackerman et al., 2013): that if enough data was collected and made retrievable, we will be less dependent on human knowledge. However, an open question is whether the relatively new machine learning technology is different in substantial ways: will the chatbot give good enough responses if the question-answer repository becomes very large and the machine learning gives good matches between new requests and already existing questions in this database? Will machine learning look like the chatbot situates and recontextualises stored knowledge? Will Ackerman's (2013) critique to knowledge repositories no longer apply? Will an objectified understanding of knowledge dominate, and the processual view of knowledge as socially constructed lose terrain? Will there be nobody to talk with?

Chatbots are in rapid development. At the current point in time, it is difficult to see how well they will develop. Will a chatbot for information about citizen's rights and duties be precise enough to include some of the ways a human call advisor helps a caller? Perhaps the chatbot at best can function as an advanced check list for the citizen to help themselves? When conversation repair is necessary in voice chat, a chat robot only indicates a source of the trouble, while a human operator provides a possible solution (Avgustis et al., 2021). A way for the citizens to double check the chatbot's answers will be to show (possibly by clicking a button) the matching question-answer pair and see if this question is what was meant (Verne et al., 2022).

Humans also make mistakes and do not always give good and helpful responses. In the tax call centre, I experienced that some call advisors were more helpful than others. During my fieldwork there, some call advisors gave correct but not helpful responses to a request (Verne, 2015). When it comes to details about complicated taxation laws, they may give incorrect answers. Senior personnel are sometimes listening in to the calls as an approach to quality assurance. Does it make any difference if the chatbot errs and does not give helpful response if human advisors also do?

Many have high hopes that a chatbot will be good enough to give good answers within a limited domain. Chatbots for entertainment on the one hand and for information about civic rights and duties are on the opposite ends of a scale of importance of the answer being correct and relevant to the question. Answers from a social chatbot have a wider range of fault tolerance in that nothing serious will happen if its answer is irrelevant or misleading.

Conclusions

In this exploratory paper, I have given two examples from citizens' conversations with a (human) call advisor in the tax call centre and two examples of citizens' chat sessions with the chatbot of the welfare administration. The examples show that the call advisor provides unasked-for help to the caller by asking for more information to understand the caller's life situation, as well as adapting their responses to how they understand the callers' knowledge about e.g. tax rules, online self-services and tax calculations. In contrast, the chatbot provides text where the rules and checklists are listed. The citizen has to apply them to their own life situation on their own. The advisor shares expertise with the citizens and the chatbot shares knowledge. This difference can be important when the topic is civic rights and duties.

Large amounts of data can simulate the fine distinctions of real-world knowledge and understanding but will always be dependent on and limited by the extent and variety of the stored data. A chatbot will not be able to take new situations and surprising aspects into account, as it is based on data that already is in its repository.

As chatbots implementing knowledge repositories increasingly are used to answer questions from citizens, it will be important to reinvigorate the CSCW discussion about knowledge and information. As the chatbots become better at providing answers, research is needed to investigate occurrences of answers that are misleading or wrong in context and the mechanisms that produce them. It is in this respect better that a chatbot gives an irrelevant answer that the citizen can recognize as such than giving an unsatisfactory answer that is "disguised as correct". This is problematic as citizens will need to have previous knowledge in addition to what the chatbot tells them to find out. Cover-up strategies that conceal that the chatbot could not provide a good and relevant answer can mislead people to believe they can answer more than it can. Empiric and conceptual research on differences between expertise and knowledge will be important to understand the challenges of providing a chatbot first for answering questions from the citizens.

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