

“You probably shouldn’t give them too much information” – Supporting Citizen-Government Collaboration

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Abstract. This paper discusses the challenge of supporting digitally mediated citizen-government collaboration in public service provision. With a vantage point in activity theory and the empirical data from three exploratory design cases, we derive a theoretical framework for understanding the way in which citizens share information with government. Through the proposed framework and the notion of Participatory Citizenship, we propose a set of central design challenges to supporting collaboration within this setting. We argue that civil servants and citizens have inherently different foci in the service provision process. Hence, we conclude that the focus of design should not be to support a shared motive for the overall service delivery, but to support a better common understanding of the case process in itself, i.e. the involved actors, their motives, and their mediating artifacts. Moreover, we argue that the aim of technological support for complex collaboration should not be leaner, more rational case processes, but improved citizen involvement in the configuration of service provision and the alignment of actor motives. Lastly, we exemplify how these design challenges can be met by discussing how a concrete exploratory prototype in the form of a web-based timeline addresses collaboration within a complex service provision setting.

Introduction

Technology as a mediator for collaboration in organizations has been explored thoroughly within HCI and CSCW (Schmidt and Bannon, 1992; Grudin, 1994). A natural continuation of this research has been the exploration of collaboration between stakeholders with dissimilar and sometimes contradictory incentives

The exploratory research cases have led us to a more general focus on what constitutes the collaboration across the boundaries between citizens and government, as well as the challenges of technologically supporting such collaboration.

Substantial ethnographical and sociological research has been done on the subject of social interaction in and between communities (e.g. Lave and Wenger, 1991; Bowker and Star, 1999). Furthermore, technology as a mediator for collaboration between ‘groups’ has been paid special attention within CSCW (e.g. Bannon and Schmidt, 1991; Grudin, 1994), albeit with a predominant focus on professional organizational settings, rather than our current emphasis. With this focus in mind, Kling’s (1991) argument for a stronger consideration of the problematic aspects of cooperation, such as conflict, caution, and control, seems especially pertinent. Compared to studies of workplace settings, citizen-government interaction arguably constitutes an inherently asymmetrical relationship in terms of power and the ability to define the rules for and outcome of the interaction. Consequently, an important point becomes whether the involved parties perceive the interaction in the same way, e.g. as collaborative problem solving, control, compliance with authoritative, legislative procedures, etc.

In the following we introduce activity theory as a theoretical basis for analyzing the dynamics of collaborative activities on the boundaries between citizens and public administration.

Activity Theory

Within CSCW there exists a long tradition for conceptualizing the anatomy of collaborative activity through the perspective of Activity Theory (Bertelsen and Bødker 2001, Bryant et al. 2005, Engeström et al. 1988, Kuutti 1991). We see activity theory as a strong tool for emphasizing the dynamic relationships between organizational activity and individual action from an anti-idealist and anti-individualist perspective (c.f. Star, 1996).

Human activity is carried out through actions with purpose that transforms the *object* from *materials* to outcome. This object is also the target of human expectations and reflections, i.e. the *motive* of the activity. Actions are realized through series of *operations*, each “triggered” by the conditions and structure of the action. Activity is fundamentally marked by dynamics, disturbances, or ruptures, which are often results of more profound tensions and contradictions between activities. Activities are constantly developing as a result of this instability: An activity with a separate motive will at times get subsumed into other activities thereby losing its individual motive. In other instances, clusters of actions turn into separate activities (e.g. Bødker and Grønbæk, 1995).

Human beings develop and accommodate artifacts that mediate their relations with objects (Bødker and Klokmoose, 2011). Such artifacts include *tools*,

Three Cases

In the following we briefly present the three cases exploring citizen-government collaboration. These cases regard parental leave, citizen service offices, and municipal plans. We draw upon the empirical data from these cases throughout the remainder of the paper.

All three cases involved observations, interviews, and workshops exploring the nature of current collaboration (or lack thereof) combined with a design-oriented exploration of prospective novel patterns of technologically mediated collaboration. Prototypes served as concrete alternatives to current practice, as well as ways of probing the problem area to reveal the anatomy of current and future patterns of cooperation (Bødker and Christiansen, 1997; 2004). Our research approach is grounded in the action-oriented participatory design research tradition, which is strongly influenced by Schön (1983) with respect to reflection in action, as well as micro-sociological thinking, e.g. ethnomethodology and grounded theory, well known in CSCW. All cases were carried out within the eGov+ research project in which we explore the support of novel e-Government services.

Parental Leave

This case study addressed the interaction and collaboration involved in the planning and control of parental leave in a Danish municipality. The planning involves several citizens along with a municipal office and several other stakeholders such as the parents' employers and labor unions. Through a web based timeline artifact the involved actors were supported in communicating and negotiating plans and decisions. We return to a discussion of this timeline in the end of this paper. The iterative development of the timeline prototype was based on observations in municipal offices, and interviews with parents and so-called "mothers' groups". The design process included several design iterations with both paper and software prototypes with groups of citizens and caseworkers. For a thorough discussion of the parental leave case and the design process see Borchorst et al. (2009) and Bohøj et al. (2010).

Citizen Service Offices

The citizen services case took physical citizen service offices as its focal point. Here, we collected data through interviews with citizens and caseworkers, as well as observations and the drawing of heat maps of cooperative activity in the municipal offices. Moreover, we conducted a three-hour workshop with a group of young citizens, age 20-25. With a group of students we developed a number of prototypes suggesting alternatives for citizen-government and citizen-citizen collaboration with a view to citizen empowerment. One example is a tablet device that helped citizens navigate the service provision process by interpreting and

this. The network of stakeholders involved in the collaborative work is no less complex in countless other citizen services. As expressed by one mother:

“I think that the biggest difficulty was to figure out where I should send my papers, because I do not have a proper employer. I stopped working before my parental leave and went on unemployment benefits. There were so many instances involved when I was to report all the information. It was very difficult for me to find out how to do that.” **Workshop with group of mothers, 28th of May, 2008.**

This complexity renders the concrete configuration of the involved actors’ motives and mediating artifacts very hard to unravel for citizens and caseworkers alike. Accordingly, this poses a big challenge to the support of technologically mediated collaboration within these settings.

Collaborators or Representatives?

On the one hand, the intricacies of bureaucratic institutions are often such that numerous municipal employees see and affect any given case process. On the other hand, citizens expect to receive a uniform service regardless of their personal caseworker, as is also the intent of the public administration. However, during the last decade the Danish state has, partly inspired by the thrust of New Public Management, attempted a shift of metaphorical focus towards the citizen, as opposed to the public institutions, being the center of attention. A concrete value in this shift is the idea of citizens’ right to meet “a human face” in their interactions with government. Hence, municipal employees walk a fine line between their roles as creative individuals and governmental representatives. This blurring of the motives of the involved actors on both sides of the citizen/caseworker divide severely complicates the actors’ ability to understand the nature of the collaboration. While public policy requires for caseworkers to provide a certain service level with a limited amount of resources this may conflict with their own personal definitions of good service, as became apparent in a workshop with parental leave caseworkers:

“There is a lot of psychology regarding money. [...] People like to have confirmed by a person that they are doing the right thing” **Workshop with caseworkers, 23rd of Jan. 2009.**

The above remark regarded the relation between personal counseling and sending citizens on to explore other information sources, such as online forums. The caseworker was reluctant to encourage citizens to find information from other sources before contacting the municipality, as she thought this was a renunciation of a responsibility of the municipality in a situation where the citizen can be psychologically strained and need to talk to a human being. Consequently, the caseworker preferred counseling every citizen personally, in contrast with the push for cost-effectiveness in the organization.

However, there are also other, somewhat contradictory ways of dealing with responsibility, including that of delegating responsibility to organizations that are trusted for the validity of their legal advice:

challenges collaboration and how it affects the way citizens perceive their own role when interacting with government.

Strategizing on Blurred Boundaries

Arguably, a clear understanding of goals and obligations by the parties involved is a criterion for constructive collaboration in general. Clear boundaries concerning division of work and flow of information are essential to such an understanding. As in the example of a citizen wishing to acquire EU health cards, the majority of citizen services require for citizens to provide certain personal information in order to receive the service that they are entitled to. Another example of this is found within Danish parental leave case processing. Citizens provide information regarding their employer, the nature of their work leading up to the leave period (salary, hours a week), etc. This information is then used by the caseworker to approximate leave circumstances and not least calculate the size of the entitled subsidy. However, as with EU health cards, the information is often also used as a basis for counseling the citizen on his/her options:

"A young man approaches one of the desks to change his address. He has a wife and some kids. They have moved to a new address and he provides the needed information about family members and the new address. The caseworker swiftly registers the move of the whole family and then looks up: "Actually two people already live at this address at the moment." The young man looks confused: "The ones who are moving out?" They reach to the conclusion that the people registered at the address are the ones who should have moved out. Caseworker: "You need to get in touch with them and ask them to register their move, 'course I assume you still want housing subsidy in the new place?" Young man: "I don't know..." Caseworker: "You have to fill in a new application" Young man: "I thought it would just move with us, since we move to a new flat in the same building" Caseworker: "Well it's a different size flat, isn't it?" The young man leaves with a form for housing subsidy and information about the two people he needs to get in touch with." **Observation, City Hall, 19th of Jan. 2009, 12:37 PM**

The empirical example in several ways corroborates the arguments made in the above sections: Firstly, it exemplifies the caseworkers dual role as counselors and bureaucrats in their relation to the citizen. Secondly, the quote illustrates the complexity of the actors involved in many instances of service provision. In the situation above, two other citizens might end up obstructing the young man in obtaining his housing subsidy. Thirdly, the example underlines how the dual capacity of the municipal employees often confuses citizens. For example, the young citizen might end up receiving a smaller subsidy by providing new information, as required by the caseworker. Hence, citizens may find it hard to define a clear, common objective steering the collaborative activity. In the above case, the employee is in fact oriented towards several simultaneous motives, i.e. controlling and guiding. Some of the actions necessary to reach these two motives overlap and others mesh. However, some actions are conflicting, which forces the caseworkers to continuously prioritize and adjust their actions according to where they position themselves within the continuum between being a collaborator and a

have a processing time of 3-4 months.” [...] Citizen “It’s hard to call so many places! They put you on hold forever! And it’s also difficult to figure out the online solutions.” The caseworker manages to contact the appropriate public institution directly and apparently settles the problem. Citizen: “Thank you SO much!”” **Observation, Municipal Office, 29th of Jan. 2009, 2:12PM**

Mastering the Flow of Information

A third archetypical approach is that of citizens ‘mastering the game’. They understand their own and the municipal caseworker’s role, the objects of work they refer to, and the obligations that adhere to these. They engage in collaboration in order to receive a better service and control the flow of information in such a way that they only provide the exact information needed (and in such a way) that it ensures the best possible service. Moreover, they continuously re-adjust their efforts to fit changing objects of work, available artifacts, and the involved organizational and individual actors.

In the case regarding citizen contributions to municipal plans, we encountered several citizens with intricate knowledge of municipal procedures. One grassroots organization fought to prevent the partitioning of an old camping ground now used as a recreational nature area by the local community. The partitioning of the area for the purposes of building private property would most likely affect the value of the property of several of the associations’ members, many of whom had political experience. As a consequence, the association had fought a long and hard battle with the municipality displaying, and making use of, profound insight into bureaucratic procedures and the various latent crystallizations of work practices apparently affecting the process.

At times, citizens display what can almost be perceived as puppeteering of municipal actors, as when one citizen explained how he went about getting his way regarding the aesthetic appearance of renovated old houses in his hometown:

“We had a meeting just prior to the election with the technical chairman at that time. To tell him a little bit about what was going on. [...] We have to make him aware of what they are doing and what the municipality can do. And be careful you don’t go too far. We shouldn’t tell him EXACTLY what to do, but put pressure on him in such a way that he himself thinks that it’s something they need to handle... But we don’t provide him with any final solution.”

Workshop with citizens, 18th of Jan. 2010.

The strategies presented above do not only relate to whether citizens understand the motives and artifacts affecting other actors. The approach chosen is also affected by a juxtaposition of effort and gain, i.e. what work goes into understanding the circumstances of the collaborative activities and how does this work measure compared to a prospective gain in the form of a more desirable outcome?

Effort and Gain

As argued by Grudin in his scrutiny of groupware systems, designers of CSCW systems need to carefully consider “*the disparity between who does the work and*

however, we have been able to establish a number of challenges that seem to apply to citizen-government interaction in a broader sense.

Bridging the Gaps of Collaboration in Participatory Citizenship

The presented empirical examples show that collaboration between citizens and caseworkers and, hence, the notion of Participatory Citizenship has two levels of activity. Accordingly, the actions carried out by citizens as well as caseworkers have dual purposes. One level is that of the specific case or situation that the citizen needs to deal with, be it obtaining a new passport, or receiving parental leave subsidy. Conversely, there exists a second level; learning and reflection. This level is multifarious and potentially encompasses many different activities: improving one's comprehension of the legislation and bureaucratic case processing intricacies so as to act and share information more appropriately in future situations; sharing this knowledge for altruistic purposes; using this knowledge to exercise democratic influence upon the bureaucratic and political system; etc.

A fundamental argument to this analysis is that there exists a double concern for caseworkers, as well as for citizens: providing the individual citizen/couple/family with the service that suits them best, and ensuring a uniform service level complying with legislation. The ultimate motive for citizens is the outcome, e.g. money. The bureaucratic rules and protocols are merely tools (of which the appropriation is time consuming) to achieve this goal. Contrarily, these rules and protocols (which are secondary artifacts to citizens) are the primary for caseworkers. Somewhat cynically put, the parental leave caseworker is essentially not concerned with the amount of money a given citizen receives, as long as this happens according to parental leave legislation, ensuring that the caseworker can defend his or her actions performed in this process. As such, the overall motive of the collaborative activity, and the artifacts used to achieve this, is not agreed upon by the involved actors, creating an inherent tension in citizen-government collaboration within these settings. By this token, citizen-government collaboration may go directly against the Weberian understanding of bureaucracy that is still largely prevalent in today's public institutions. That is, a clear hierarchy; concentration of power among senior officials; formal structures; limited channels of communication; confined openness to innovation; etc. As argued by Vigoda (2002), albeit in a discussion of New Public Management and the notion of citizen responsiveness, these aspects of bureaucracies seem substantially incommensurable with collaborative activities where the citizen can significantly influence the way in which services are provided, i.e. moving towards co-constructive and even co-operative collaboration.

lying organizational structures and assumptions. These assumptions do, of course, depend on the complexity of the service in question. Nevertheless, this complexity may seem significantly more manageable to an employee approaching a case grounded in the bureaucratic definition of an isolated service, than it does to a citizen trying to deal with a messy reality. For example, the need to change one's address can be the result of divorce, sudden unemployment, or a variety of other situations resulting in the need of a cluster of services as these are defined and demarcated by the bureaucratic institution.

Returning to the notion of New Public Management and the idea of serving the citizen, this perspective creates an interesting contradiction: A well known deficiency of Weber's iron cage bureaucracy are the negative connotations of the word 'bureaucrats', e.g. employees avoiding individual considerations by hiding behind bureaucratic protocols. Striving for the notion of a human face to the public institution is but one, somewhat vague, approach to addressing this challenge. However, barely any services are carried out in their entirety by single governmental employees. Hence, it is seldom feasible for caseworkers and citizens to share a clear focus, i.e. agree upon the ultimate outcome of the service provision process. Consequently, we suggest that the aim of design for public service provision should not be a common focus on the outcome of the activity as such. On the contrary, design should aim to support a more shared, transparent, and accessible understanding of the case process, i.e. the involved actors and the bureaucratic rules shaping the actions carried out by bureaucratic actors. Such a shared understanding would serve as a critical instrument for collaboration between citizens and caseworkers, by supporting a more equal configuration of the collaboration in the form of a more symmetrical alignment of actor motives within the case process. Such a focus for organizational and technological design would, arguably, be much more feasible than to demand that the focus of all actors involved should be on the overall outcome of the activity.

Addressing Challenges through Design

Within the presented case regarding parental leave, the authors were engaged in a concrete design process addressing the challenges presented in this paper. Concretely, this was approached by way of an exploratory prototype designed to support the planning and applying for parental leave (Figure 1).

The aim of the timeline was to support the handling of a particular case, while helping citizens explore the rules and share their findings and decisions with others in a similar situation. The prototype allowed for interaction and counseling between citizens and caseworkers, while also representing the rules and roles of the municipality, and other actors involved (e.g. the parents' unions). In (Borchorst et al., 2009, Bohøj et al., 2010) we proposed that this prototype could

along with the possibilities for other private and public actors (e.g. unions, the post office, etc.) enrolled in these interactions.

The Implications of Participatory Citizenship

In the beginning of this paper we defined Participatory Citizenship as the act of citizens actively engaging in and contributing to the provision of public services in order to improve these services for themselves and other citizens. Although it seems there are clear advantages to this kind of citizen empowerment and community knowledge sharing (Bryant, 2005; Marlow et al. 2006), there is a great difference between attempting to support such collaboration within respectively private and public settings. Hence, the notion of Participatory Citizenship raises a number of political, economical, technological, and normative issues.

For one, the resources for supporting an improved level of service through collaboration must still be found in the public administration budget. For private service providers improved service will likely entail more customers, with a resulting increase in profits. However, for public institutions, more customers invariably entail increased expenses. A municipality is not economically rewarded by the state for providing a service of a better quality, sometimes even the contrary. Consequently, some services only exist because all citizens do not take advantage of them. If all citizens were to do so, there would simply not be sufficient administrative resources to maintain the same level of service for all. As such, too attractive, flexible, services may distort a democratically fair distribution of resources, leaving less resourceful citizens behind.

It can, however, be argued that this is already the case. One example corroborating this claim is found in the empirical data from the parental leave case. Here, we learned that most citizens displaying abilities comparable to “mastering the flow of information” i.e. making full use of the complex, but flexible legislation, were more often than not well educated and resourceful. This begs the question of whether design within this field should also be concerned with equal distribution of resources, effectively educating citizens in democratic thoughtfulness. To the authors of this paper it does not seem viable for systems to aim at inhibiting the single citizen’s ability to improve his or her personal circumstances by imposing moral values of equal distribution of resources. Contrarily, it seems a much more fruitful approach would be to focus on the notions of bureaucratic transparency and citizen-citizen knowledge sharing as discussed in this paper; supporting citizens in helping themselves and each other, hereby also potentially lessening the administrative burden on the public administration.

Cautioned by this discussion, it seems clear that creating good design within the arena of citizen-government interaction is still an important challenge. As we have shown in this paper, actor motives within the sphere of public service provision are complex and potentially incommensurable. That which is user-friendly,

- Barney, D. (2000): *Prometheus Wired: The Hope for Democracy in the Age of Network Technology*. University of Chicago Press, Chicago.
- Bertelsen, O.W. and Bødker, S. (2001): 'Cooperation in massively distributed information spaces.' *ECSCW 2001: Proceedings of the Seventh European Conference on Computer Supported Cooperative Work*. Kluwer, Dordrecht, pp. 1-18.
- Bohøj, M., Borchorst, N.G., Bouvin, N., Bødker, S. and Zander, P.-O. (2010): 'Timeline collaboration.' *CHI 2010*, pp. 523-532, ACM Press.
- Bohøj, M., Borchorst, N.G., Bødker, S., Korn, M. and Zander, P.-O. (2011): 'Public deliberation in municipal planning: supporting action and reflection with mobile technology,' *ACM Communities and Technologies*, in press.
- Borchorst, N.G., Bødker, S. and Zander, P.-O. (2009): 'Participatory citizenship', *ECSCW 2009: Proceedings of the Seventh European Conference on Computer Supported Cooperative Work*, Kluwer, Dordrecht, pp. 1-20.
- Bowers, J. Button, G. and Sharrock, W. (1995): 'Workflow from within and without: technology and cooperative work on the print industry shopfloor.' *Proceedings of the fourth conference on European Conference on Computer-Supported Cooperative Work (ECSCW'95)*. Kluwer Dordrecht, pp. 51-66.
- Bryant, S. L., Forte, A. and Bruckman, A. (2005): 'Becoming Wikipedian: Transformation of participation in a collaborative online encyclopedia.' *Proceedings of GROUP*, ACM Press, NY, pp. 1-10.
- Bowker, G.C. and Star, S.L. (1999): *Sorting Things Out. Classification and its Consequences*, MIT Press, Cambridge MA.
- Bødker, S. and Grønbaek, K. (1995): 'Users and Designers in Mutual Activity- an analysis of cooperative activities in systems design,' in Y. Engeström and D. Middleton (Eds.). *Cognition and Communication at Work*, Cambridge University Press, Cambridge UK, pp 130-158.
- Bødker, S. and Christiansen, E. (1997): 'Scenarios as springboards in design.,' in Bowker, G., Gasser, L., Star, S.L. and Turner, W. (eds.). *Social science research, technical systems and cooperative work*. Erlbaum, Mahwah NJ, pp. 217-234.
- Bødker, S. and Christiansen, E. (2004): 'Designing for ephemerality and prototypicality.' *Proceedings of the 2004 conference on Designing interactive systems: processes, practices, methods, and techniques*, pp. 255 - 260.
- Bødker, S. and Klokmoose, C.N. (2011): 'The Human-Artifact Model,' accepted for publication in *HCI Journal*.
- Clement, A. and Wagner, I. (1995): 'Fragmented exchange: Disarticulation and the need for regionalized communication spaces.' *Proceedings of ECSCW '95*, Kluwer, Amsterdam, pp. 33-49.
- Cohen, A.L., Cash, D. and Muller, M.J. (2000): 'Designing to support adversarial collaboration.' *Proceedings of CSCW 2000*, ACM Press, New York, NY, pp. 31-39.
- Engeström, Y. (1987): *Learning by Expanding: An activity-theoretical approach to developmental research*, Orienta-Konsultit, Helsinki.
- Engeström, Y. (1990): *Learning Working and Imagining. Twelve Studies in Activity Theory*. Orienta-Konsultit, Helsinki.
- Engeström, Y., Brown, K., Christopher, L. and Gregory, J. (1997). 'Coordination, Cooperation, and Communication in the courts. 'In Cole, M., Engeström, Y., and Vasquez, O. (Eds.) *Mind, Culture, and Activity*, Cambridge University Press, Cambridge UK, pp. 369-385.

