AI in Public Service: Stakeholder framing of implementing Robotized Process Automation in Financial Aid in Swedish Municipalities.

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Abstract:

Artificial Intelligence has become a hot topic as improvements in available technologies previously considered science fiction, like image recognition, language processing, and self-driving vehicles, are becoming financially viable. Further, several studies point to how automation of processes will increase efficiency in a variety of white-collar sectors. The public sector is no exception, and the future is already here. Consider, for example, the application of Robotized Process Automation, a form of narrow AI, in financial aid through the so-called "Trelleborg model." This paper studies the experiences of early adopters of this form of process automation. Interviewing Politicians, Private Sector Consultants, Senior bureaucrats, Street-level bureaucrats, while building on technological frames theory, this study explores stakeholders' perception of RPA implementation on financial aid in 3 Swedish Municipalities. A diverse set of experiences is essential to include, as co-ordination is a common challenge to implementation. At the same time, different groups can add additional pieces to the puzzle on implementing AI in the public sector. Stakeholders identify some critical elements to successful implementation, including framing the change as a means to substitute routine tasks and spending more time on client interaction, finding ways to bridge gaps in communication between different groups of knowledge workers, and identifying realistic defined goals with implementation.

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1. Introduction

Our time is often portrayed as one of outstanding technological advancements and digitization. This development is spearheaded by the digital economy's tremendous growth in general and a few prolific firms in particular. Building on availability of- and ability to process- large data flows while refining software and machines' ability to process information and execute tasks independently. Big-data and artificial intelligence (AI) issues have come to the forefront as private entrepreneurs scramble to develop self-driving cars, language processing, and image-recognition tools. Further various forms of automated practices are being implemented to substitute routine-based tasks. Some authors go as far as to proclaim our time as a fourth industrial revolution or "second machine age" as this development fundamentally remodels the labor market and productivity (McAfee&Brynjolfsson, 2014).

In general, AI discussions tend to take on far-flung speculation about the distant future where AI develops beyond the limitations of human cognition. While this is an exciting topic for discussion, fact of the matter is that such artificial intelligence is still to develop. At the same time, several less inspiring yet practical forms of AI have found applications in our present day and age. Consider, for example, how language processing and content recommendation online affect our everyday lives (Reaktor, 2020).

The private sector has led this development, but these technologies are likely applicable to the public sector as well. They are offering the potential to massively increase productivity through substitution of routine tasks, potentially freeing up time for new, more qualified tasks (Wirtz et al. 2019:599, 606). Such a development could be beneficial but does not come without challenges as roughly half of the current workforce is at risk of being replaced by automated processes. That is not to say that all jobs will be lost as new jobs arise, and can increase demand in the economy indirectly through increases in incomes tied to increasing efficiency (Maniaka, 2018; Frey & Hawksworth, 2018 :22). Accordingly, the argument is not one of doom-and-gloom, but rather about how the technology can be honed to create beneficial outcomes.

In this vein, if AI and when automated processes are implemented in the public sector, how are they used? How can they benefit operations? And how are they received?

1.1. Implementation of AI in the public sector

The concept of artificial intelligence is far from new and has been discussed since at least 1956, but its practical application has grown over time (Moor, 2006). The concept of Artificial Intelligence is debated, as different definitions involve different expectations of independent problem-solving and complexity of tasks to handle. This philosophical divide could be categorized in multiple ways. Yet, a useful way of thinking about different types of AI is in terms of its level of independent "thinking," which can be divided into three main categories:

1. Artificial Narrow Intelligence (ANI) refers to software that can solve a specific problem by following a pre-programmed sequence.
2. Artificial General Intelligence (AGI) refers to software that can "learn" on its own and apply its experiences on new problems.
3. Artificial Super Intelligence (ASI) refers to software that can learn on its own and develop beyond human cognitive limitations.

Another way to conceptualize it would be to speak of "strong" and "weak" AI. (Wirtz et al. 2019:599).

Interestingly enough, discussions of AI often drift toward the potential of ASI and its implications. Something that is unfortunate as ANI and AGI dominate the current application. Consider, for example, the much-hyped occasions when IBMs Watson beat the human world champion of chess. While awe-inspiring feats, a game like chess, offers set parameters where the software can outdo its human counterpart through crunching massive training sets. More complex tasks in more complex environments remain a taller task for AI (Reaktor, 2020). That is not to say that AI is without application that can contribute in many settings, not least in the public sector.

A literature review of AI in the public sector paints a picture of increasing research on the use of artificial intelligence in the public sector, although starting from low levels. Gomes de Sousa et al. (2019:4-5) mentions its primary use in fields like general public services, economic affairs, environmental protection, and public safety and housing. Other studies give examples of applications of functions like language processing in applications at immigration services, categorization of applicants in unemployment services, personalizing digital interactions with authorities, AI application that assist in medical diagnosis, and predictions of

social factors like sense of community based on government data (Kuziemski & Misuraca, 2020; Piscopo et al. 2017; Sun&Medagila 2019).

Yet others discuss the potential for future general applications like knowledge management software, process automation, virtual agents, predictive analytics, recommendation systems, and speech analysis, among others (Wirtz el al. 2018:600).

In essence, the future is already here. Applications of AI, especially of the weaker varieties, are already being used to substitute routine- based tasks. This mundane but efficient form of AI is an interesting topic for research, not least as it pertains to bureaucratic tasks in the public sector. These tasks are often carried out following defined legal frameworks, striving to achieve efficiency and equal treatment of citizens. In this, one could even argue that certain bureaucratic processes are similar to applications of algorithms.

1.2 The Case: Automating the processing of applications for financial aid in Sweden.

1.2.1. Robotized Process Automation

One potential example of rule-based "weak" or "narrow" AI being applied in the public sector is Robotized Process Automation (RPA). RPA refers to technology that can only follow a programmed sequence or algorithm. These characteristics make it very different from more complex forms of AI like machine learning or neural networks that recognize patterns based on input data. In contrast, the RPA is merely pre-programmed to execute a defined task. Like industrial robots, RPA is suitable for routine and repetitive tasks, working relentlessly around the clock with great precision. While well suited for repetitive tasks, RPA processes lack creative traits like managing exceptions, considering contextual circumstances, and similar characteristics associated with human thinking. Accordingly, RPA requires a set environment and clean data to function as it struggles to handle irregularities (Svensson, 2019:11; Uskenbayeva, 2019:9-10).

1.2.2. Financial Aid in Swedish Municipalities

'Financial Aid' can be described as the final outpost of social security in the Swedish welfare system. Many general social securities are tied to former employment, excluding those who have not established themselves in the labor market. This gap is filled by municipalities, who supply financial aid for those of its citizens unable to participate in the labor market, some

activity aiming to enter the labor market, or education. This final safety net is as a means of last resort for those otherwise not covered by the general social security. However, this responsibility is meant as a bridge in times of need for the user, with the explicit goal that recipients should be guided towards providing for themselves again, preferably through re-entry into the labor market (Socialstyrelsen, 2013: 11,18). However, this is not always the outcome as a portion of the applicants, for a variety of reasons, struggle to re-enter into the labor market, sometimes for several years (SKR, 2020a).

As stipulated by the fourth chapter of the Social Services Act, financial aid should ensure a decent living standard for those otherwise unable to supply for themselves. The money paid out is calculated based on factors like civil status, whether the applicant has children etc., which impacts reasonable amounts needed for food, housing, and necessities. Further, the application process for financial aid historically involved a lot of paper work as the applicant needed to submit a series of statements from other public institutions, like the tax office and agency for the distribution student loans. To ensure that the applicant had no other income at the time of application while simultaneously checking their civil status. Large portions of this work fell on the administrators, the street-level bureaucrats tasked with checking these statements, often communicating over the phone with the other authorities, waiting in line with everyone else. In essence, the municipal bureaucracy, usually the office for social services, must receive, process, and approve all applications manually. Depending on the municipality's size and the local labor market's state, this could mean manual administration of thousands of applications every month.

This practice has developed over time as the Swedish Association of Local Authorities and Regions, in collaboration with the Swedish Social Insurance Agency, has developed a platform for accessing data from multiple agencies in the same place, called SSBTEK. This service caters to the application for financial aid. At the time of writing, databases are connected from Swedish Social Insurance Agency, the Swedish federation of unemployment insurance funds, the employment service, Swedish Board of Student Finance, the pension authority, the Swedish Transport Agency, the tax authority, and the Swedish Migration Agency. All of which can supply information about the applicant's residence, other incomes, and potential capital holdings like cars (SKR, 2020b)

While being labor intensive, this kind of work is somewhat repetitive in nature. Every applicants' circumstances are unique, but access to aid is granted based on universal legal norms, applications should be processed and judged in a similar fashion. One could almost talk of a set of standards for judgment similar to the pre-set rules fundamental to computer

coding. The application is received, information needs to be retrieved from the agencies mentioned above, and the size of financial aid is calculated based on standardized local norms.

1.2.3. The "Trelleborg Model"

The fact that the processing of these applications were routine tasks and susceptible to automation was not lost on the staff in Trelleborg's municipality. In a reconfiguration of activities in the mid-2010s, Trelleborg implemented RPA software to process routine financial aid applications as part of a more comprehensive change of organizing the work with financial aid.

The "Trelleborg model" has garnered much attention since its inception, perhaps primarily due to its automation component. That being said, it should be pointed out that the introduction has only been one part of a more general change in practice in the south-Swedish municipality, including a shift of focus in regards to financial aid from social- to more of labor market- perspective (Rakar, 2018:6,12). The introduction of RPA is however, is the primary point of interest to this paper. The principal development of the model stemmed from the ambition to cut times needed to make the administrative decision on applications, resulting first in developing an e-service, and later the robotization of the processing and calculation of financial aid. In essence, RPA substitute for parts of what used to be an entirely manual process, automatically retrieving information from the relevant databases, instead of the social worker having to do so manually (Rakar, 2018:12).

A word of caution on the term "Trelleborg Model" is in order. While this mode of operation is undoubtedly a trail-blazer in the area, one cannot speak of a coherent model. Most municipalities have adopted elements of the model, like the application of RPA. Still, many take great pride in pointing to their local adaptations, more so than copying the model in its entirety. The municipalities included in this study have in common that they have adopted RPA in the process of administering applications for financial aid, yet utilize it in slightly different ways. For example, some municipalities in this study have attempted to automate the entire process from application to suggested decision[1]. Others have automated single elements of their process, like the norm-based calculations of previous applicants[2]. Further, some are

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[1] See interview with Consultant 1B
[2] See interview with Consultant 1A

actively shying away from allowing the RPA to decide whether someone gets financial aid, while others are seriously considering that idea.

1.2.4. Previous Research on RPA and financial aid.

While a novel topic of study in the Swedish context, the introduction of RPA in regards to application for financial aid has garnered interest, some of it from the research community. While much attention has been directed at legal issues to automated decision making, there has also been an interest in the application of RPA from a stakeholder perspective. A prime example of the latter is a marquee study by Lupita Svensson (2019) that explores the effects of automation of financial aid administration. In so doing, she interviewed politicians, project leaders, and administrators in Swedish municipalities for their take on this development (Svensson, 2019:32-7). Svensson's study explores the impact of implementing the "Trelleborg-model" while covering other aspects of public sector digitization like introduction of an e-service. Three topics are central to the research: the design and description of automation, change in resource use, and implications for professional roles and competencies. The study has a quantitative component overviewing the prevalence of digital solutions in social services, and a qualitative part with interviews of identifies stakeholders at different levels of the organization (Svensson, 2019: 7-8). Take-aways from the study include that automation is described as means to increase efficiency while raising questions about what to do with the time saved. Further, that automation has implications for equal treatment as current practices are translated into the robots algorithm. It also shows how competencies in an automated organization need to tilt more towards IT and new tasks that replace the routine processing of applications.

Another contribution related to this particular topic can be found in Fredrik Rakars (2018) paper evaluating the project to spread the "Trelleborg model." Rakar covers the co-sponsored efforts to spread knowledge and experience based on the Trelleborg municipality initiative (2018:2). The primary focus was on the workshops themselves, with limited possibility to cover the actual spill-over effects into the participating municipalities' everyday activities (dito: 4). Over the course of the project, several municipalities left the project for various reasons. One motivation mentioned by the author could be the potential local political backlash tied to automation (dito:20). Frictions seems to emerge from other stakeholders as well. A recent study surveying the opinions of professionals in the Swedish social services found that many are sceptical of the idea that automation would free up time by substituting

routine tasks, and result in more equal judgment across applications (Scaramuzzino, 2019). In a similar vein, parts of the literature point to how digitization and the implementation of ICTs redefine professional roles in social work, emphasizing documentation and information management over the work's social dimension. This change is often described as a threat, particularly by older and more established professionals in the field, who sometimes find strategies to circumvent it (De Witte, Declerq & Hermans. 2016; Scaramuzzino, 2019)

1.3. Research Gap & Research Question

While some research has already been done on this rather novel topic, several interesting questions for enquiry remains regarding the implementation of RPA in processing applications for financial aid. Consider, for example, that previous research has identified the most relevant actors within the municipal sector as informants to studies about the process. Yet, the private sector consultant's perspective that design and help implement the software are mostly absent in the literature. Their perspective is also needed to get a more comprehensive overview of the implementation of RPA in the public sector. This paper aims to start covering this research gap by including these actors in the sample.

Further, this new use of automated processes offers several points of potential contention ranging from work-substitution to changes in professional roles, ethical considerations on non-human decision making, and individual decision making. Are these sources of conflicting understanding of the process? Instead of dealing with the material aspects of implementing new technology, this study will focus on its ideational aspects. For the implementation of new technology into a social context to function, it needs to be accepted within the social structure. There is a diverse set of actors involved in a project to implement new technology in public sector activities like processing applications for financial aid. Many actors must align their efforts and experiences in the process, all of whom can contribute to a better outcome by their respective expertise.

Svensson's (2019) research contains an element of qualitative interviews with stakeholders to the introduction of RPA like politicians, project leaders, and administrators of financial aid, offering a good starting point for research on ideational aspects of RPA implementation. At the same time more niched research into this aspect could benefit from including other groups of stakeholders, like private sector consultants, while systematizing analysis of stakeholder perceptions. This latter point could be achieved by operationalizing technological frame theory, with informants categorized in groups of informants to get an overview of where

framing aligns and where conflicts seem to emerge (Young et al. 2016:504-5). For example, is the implementation of RPA in financial aid subject to political contention in the municipalities where the process has been automated? This could be explored empirically by including politicians from both the governing majority and the opposition in the participating municipalities. Further, there might be other differences in the perceptions of the various actors involved in the process. How do they perceive the implementation in terms of benefits, challenges, and outcomes? Again, a key factor is what actors are included and excluded. For reference, the sample is available under section 3.3.1.

Finally, automation of the administration of financial aid in Sweden is a case of narrow AI in public sector activities. A prime empirical example of the potential to substitute a series of routine tasks by technological means. Accordingly, lessons from this application of the Trelleborg model in other municipalities can likely benefit other public sector actors, both in terms of experiences of benefits and potential pitfalls to avoid. Accordingly, this paper aims to highlight the stakeholders' perceptions of this process while allowing others to learn from their experiences. Hopefully, this study can add to our cumulative knowledge on how to implement RPA in public sector activities by describing the experiences of those who have already been through the process.

With these considerations of previous research, and perceived gaps, in mind, this paper aims to explore the following research question:

How do stakeholders perceive the implementation of RPAs in the processing of applications for financial aid?

With a secondary sub-question about what can be learned from the experiences of early adopters:

What do stakeholders identify as lessons from their experience for future use of RPA in the public sector?

2. Theory

The introduction of new technology, including a new way of working along with it, requires an organization to undergo some degree of change. Throughout the organization, stakeholders are tasked with adopting new routines and co-ordinating their efforts to utilize the technology. This process of changing practices and translating decisions into project or program operations can be referred to as the process of implementation. When trying to assess the ´success´ of implementation, it can be defined as a matter of judging whether it achieved its intentions (Wolman, 1981:434). Applications of the "Trelleborg model" vary across cases. Still, a general idea seems to persist that RPA can substitute human labor on specific routine tasks in financial aid administration, increasing efficiency in the process. This idea is potentially transplantable to other parts of the public sector, making it an interesting case to study.

The implementation process can be described and analyzed in many ways, for example, by focusing on material aspects of technology and resource distribution or the cognitive and social side of implementation within a social structure. In the latter case, from whose perspective the process of change is described matters significantly since different stakeholders experience it from other points of view.

This research will focus on ideational aspects, accounting for multiple stakeholders' perspectives, including a more in-depth and diverse account of how various stakeholders frame the implementation process and what can be learned from this diverse set of experiences. The practical implications of ideational aspects on implementation success are discussed academically by Wolman who identifies a series of determinants of government program outcomes, pointing to the increased difficulty of implementation in programs that involve more stakeholders instead of, say, a simple cash-transfer. This obstacle to co-ordinated implementation is attributed to variations in "perception of reality" among stakeholders, which can stem from differences in educational backgrounds, creating barriers to co-ordinating efforts (1981:435, 453).

This chapter will outline the operationalization of technological frames as an analytical tool to discuss stakeholder perceptions on the implementation of RPA in regards to financial aid. I am conceptualizing three parameters of particular interest to understanding stakeholder framings and interaction between these frames; frame alignment, incongruency between frames, and footing of frames.

2.1 Framing theory in change management

The literature on management and change management in particular, has become en vogue as the world around us is described as increasingly uncertain due to the rapid pace of change. An entire stream of literature can offer advice on managing this element of change, often from the perspective of the person in a managerial position tasked with leading change (t´Hart, 2014:8,167). While this type of literature can offer interesting insights, it fails to analyze the phenomenon of organizational change as a group activity. Anyone with the slightest experience in managing change will attest to the necessity of coordination between individuals in the organization to achieve the preferred shift. And while diversity of opinions and perspectives is often beneficial, complete failures to reconcile ideas regarding adjustment to changes like introducing new technology tend to create sub-optimal outcomes (Leonardi, 2011:347).

So, if we are to understand how the implementation of a new technology fares, we also need to understand the social dimension of change in an organization. Specifically analyzing how different actors involved experience and make sense of the process. A popular analytical tool to conceptualize this variety in experiences and perspectives on a common issue is the idea of *framing* and *frame theory*. A common point of reference in this literature is the seminal work by Goffman, who conceptualized the theory as the underlying ideas that we build on when we make sense of a given situation (1974:8-10). In essence, framing refers to the process by which we use a lens to reduce the otherwise overwhelming complexity of the world around us to a comprehensible frame building on our preconceptions and experiences (Kaplan & Tripsas, 2008:791). When the number of involved stakeholders, and potential different ways to frame the situation at hand rises, so does the level of social complexity in reconciling the framing of what the new situation means to the organization. As the expression puts it: is everyone on the same page?

This theoretical focus on frames, perception, and co-construction of reality supposedly places this paper in the realm of social construction and interpretation. Constructivist approaches emphasize that our actions are shaped by how we interpret and organize our experiences (Parsons, 2010:80). In this vein, framing quite literally emphasize how reality is framed in regards to a particular situation. One could easily argue that a study of stakeholder perception assumes an interpretivist epistemological position, focusing on understanding the perceived experience, rather than explaining a causal relationship (Furlong & Marsh, 2010:191). At the

same time, interest in the ideational aspects of implementation has highly practical implications since understanding the stakeholder's framing is key to improving the implementation of technology like RPA. The idea is not to arrive at an anti-foundational ontological standpoint and argue the constructed nature of reality, but rather to understand the diversity of perspectives that can co-exist on the same project. When applied to cases of organizational change, I would like to argue that framing theory, including this paper, assumes a positivist ontology but interpretivist epistemology. All stakeholders and observers would likely agree that there is an objectively observable project under way[3], the issue is more of how this same project can be perceived in different ways. These differences in turn, can shape outcomes in the material world in the form of quality of implementation (Wolman, 1981:453). Accordingly, I would like to emphasize the highly practical value of understanding the multitude of frames, and interaction between stakeholders' frames, in regards to the process of technology implementation. In this, research on framing of organizational change offers an interesting nexus between constructivist and non-constructivist approaches to social sciences.

The application of framing in change management literature is quite extensive, as shown in the overview of the topic by Cornelisen & Werner (2014). One of the author's contributions to the field is categorizing studies into three major categories depending on the scope of frames, with studies taking place at the micro, meso, and macro levels. Micro is referring to the individual level where we all live by inference in a sense, relying on frames of thought for making sense of situations that we encounter. This analytical level focuses mainly on what frames of thought the individual access, more so than the socially negotiated nature of collective frames (Cornelisen &Werner, 2014:17). This can be contrasted to meso-level analysis were frames are described as product of a bottom-up socializing process were interaction among stakeholders shape the enduring common frame (dito: 18). As the name implies, the macro level refers to more over-arching, sometimes society-wide, framings that influence our institutional thinking (dito:30).

Organizational change in general, and framing of technological change in particular, is often placed on the meso-level as the social dimension of negotiation of common frames is emphasized. However, as this study aims to describe and analyze the operational frames among stakeholders to implementation of RPA in the public sector, it operates in the nexus between the micro and meso levels. Asking a set of informants about their personal

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[3] Yes, one could argue that institutional setting it occurs in is indeed a social construction too.

experiences of the implementation at a given point in time would indicate a focus on describing the individual experience and micro level analysis. At the same time, what is of interest to this paper is the on-going negotiation of how technological change is framed within the organization. In essence, my interest is in the individual experiences and perspectives that make up the organizational context and how these interact with the framings of other stakeholders involved in the project. This is done with a specific interest in the technological dimension of change management in mind.

2.2 Technological frames

The concept of framing is also explicitly applied to the introduction of new technologies in the literature. Technology, and its application into organizations, has a social dimension as it requires coordination when the stakeholders will employ the technology in the organization and its practices (Barrett et al. 2013:203; Orlikowski, 1993:32). When new technology is introduced in a social context, multiple actors are involved, and various versions of the *how* and *why* of reform are likely to exist (Young et al. 2016:497). Simply put, technology is not portrayed as a neutral object in this strand of the literature. Rather it is seen as part of a wider social context within an organization, and its implementation is shaped by how the actors involved frame the technology and its application. Once these frames settle in, they tend to become self-reinforcing as they frame the way the stakeholders think about the technology and its use (Orlikowski et al. 1993:9; Kaplan & Tripsas, 2008:800). Such a development, a mental lock-in of sorts, can be beneficial if the organization succeeds in aligning their technological frames, resulting in coordination and efficiency[4]. If incongruences remain, the reinforcement risks amplify differences in framing between different professionals or branches of the project group or organization.

Research on technological frames has been carried out across a multitude of analytical levels and topics, including societal debates over open-source code (Barrett et al. 2013), sales force automation projects in the private sector (Young et al. 2016), development of car-crash simulation technology (Leonardi, 2011), the introduction of mobile devices in a company (Mazmanian, 2013), the introduction of AI in health care (Sun&Medaglia, 2019), and use of big data in the public sector (Guendez et al. 2020). When operationalizing the concept of technological frames, a common practice in the literature is to aim for potential sources of

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[4] At the same time, some heterogeneity level is likely needed to avoid group think and inability to develop processes.

incongruence and inconsistency between and within the different frames of involved actors. Incongruence refers to when the frames of different actors do not align, creating a problem with implementation as involved actors cannot find common ground

regarding *how* and *why* of the technology. On the other hand, inconsistency refers to internal conflict within a single actors´, or groups framing of the technology (Young et al. 2016:498). The primary focus here will be on incongruency between different stakeholders as a means to focus the collaborative dimension of implementation, and diversity in technological framing. As one can imagine, this type of research has practical implications as it exposes difficulties in aligning technological frames and utilizing technology within the organization. Severe incongruence between actors' framings is bound to hamper the new technology's viability and efficiency in practice (Leonardi, 2011:347). Accordingly, understanding where such incongruencies occur are essential to understanding implementation of new technology. If we focus on the why aspect for a minute, a popular explanation for incongruence in the literature on technological frames is that it tend to emerge between different categories of skilled workers involved with the implementation (Orlikowski et al, 1993; Young et al. 2016:515; Mazmanian, 2013:1236). This tendency is ascribed to the difference in perspective due to what level or area of the organization one is employed and differences in educational backgrounds. Such differences can result in incongruent ways to approach the implementation process, influencing views on the perceived issues and what's needed to solve them (Orlikowski, 1993:4,25; Leonardi, 2011:358-9). While this might not be the only explanation to the emergence of incongruencies it is an idea worth further inquiry in regards to the introduction of RPA in the public sector. This process involves multiple political actors, private sector technology consultants, and bureaucrats on multiple levels of the organization. The rationale is that by understanding where stakeholders understand and fail to understand each other, we can learn more about the implementation process and improve it.

This focus on where incongruencies in framing emerge is often a focal point for research. Again, understanding and presenting the difference between different frames is often the presented "result" or "finding" in research using technological frames as their theoretical framework, see for example Barrett et al. (2013:211), Young et al. (2016:504), Mazmanian (2013:1244), and Sun & Medaglia (2019:374). While this focus on incongruencies at a given time is important to understanding the implementation process, some authors identify a pitfall if this becomes the study's sole focus. For example, Davidson (2006:30) criticizes some applications of technological frames for becoming too centered on identifying incongruences at a given point in time when more emphasis should be placed on framing as an on-going

interpretive process. Cornelisen & Werner re-iterated this point, suggesting that technological frames should be studied more as a process, beyond simply naming the current frames (2014:24,49). The emphasis here is on describing the framing of technology as a dynamic and on-going process. Technological frames are not static but formed and re-formed in interactions between the stakeholders (Kaplan & Tripsas, 2008:801-2).

While that is an insightful take-away, it's still essential to describe the technological frames present among the stakeholders before analyzing the interactions between them. Understanding the plurality of frames that are either diverse or overlapping gives us better insight into what can be learned from the study's informants. Further, analyzing the process of developing frames in depth would require follow-up interviews over an extended period, which was not feasible for a research project only spanning a few months. That being said, the aim is still to account for framing as a process by presenting the technological frames of stakeholders, looking back at the process after the implementation phase, and analyzing the interactions between them.

2.3 Interaction between technological frames

As a version of framing theory, technological frames offer an analytical tool to dissect how stakeholders perceive the implementation of RPA in processing financial aid. Frames can be seen as the lenses through which the stakeholders organize the experience of the introduction of RPA in the process. An important aspect here is where to look for an indication of these technological frames. A fundamental idea in research on framing, and constructivist approaches in general, is that the language we use indicates how we think about an issue (Barret et al.2013:205). Regarding the issue at hand, stakeholders need to be identified and allowed to communicate their perceptions and experience of implementing RPA, as an indication of how they frame these experiences.

Of central importance is how the stakeholders organize these experiences regarding key questions like why RPA is introduced, how it worked, what the challenges to implementation was, how co-operation on implementation worked, what this change means to their organization, and what they learned in the process. These questions are the foundation of the interview guide, available in Appendix 1, and were chosen to reflect the research question´s aims. That being the two-fold ambition of describing how stakeholder frame their experience of implementation, and what others can learn from these experiences. In a sense, the most important operationalization of the theory is arguably the design of the interview guide, as it

is supposed to ask questions that allow stakeholders to elaborate on their perspective- and framing of the process.

While the aim to analyze the material in terms of technological frames is descriptive, it still holds practical value to our cumulative knowledge of how the implementation of RPA in the public sector plays out. In terms of the application of the theory behind technological frames, the ambition is not strictly to seek out incongruencies or name individual frames, but rather to discuss the identified framings of stakeholders, be they aligning, incongruent, or different but resulting in similar conclusions. Accordingly, the theory behind technological frames will be employed in regards to the case of implementing RPA in the public sector in two ways. First, by means of methodological design, using interviews to allow the stakeholders to develop their perceptions and framings in their own words, identifying how informants frame the how and why of RPA in financial aid. This operationalization will be done through an interview-guide, available in Appendix 1. The guide is designed to allow the informants to elaborate on why their municipality implemented RPA, the benefits and challenges of implementation they perceive, what this change means for their organization, how they perceived collaboration with other stakeholders, and what they learned about the process.

Secondly, by analysing the material through the lens of three identified interactions between technological frames in implementation of new technology: frame alignment, incongruency of frames, and footing of frames. These are meant to guide the analysis of stakeholder framings by putting special attention to where they understand each other, fail to understand each other, and find agreement despite different framings.

2.3.1 Frame alignment

If we are to take Davidsons critique to heart and describe framing as a process, focus should be put on interaction between the present frames, not just naming them and identifying differences. Instead, this interaction can lead frames in a series of directions. While a central point to the argument about framing as a process is that there is no one specific end-point, but rather on-going negation, one could talk about a few different directions the framing process can take within an organization the course of implementation. Let´s begin with the alignment of frames.

Often described as the ideal state, stakeholders will voice their understandings and developing experiences of the technology, with a common framing emerging based on mutual learning. However, this is not always the case. For example, the process can become politicized, with

certain actors actively trying to impose a particular framing (Kaplan & Tripsas, 2008:793). In parts of the management literature written from a manger's point of view, this is sometimes encouraged to ensure successful implementation (Young et al. 2016:512). In this scenario, we could discuss a common frame emerging, either by bottom-up interactions or top-down promotion of a particular frame. This distinction of the origin of dominant frames is not of central importance to this project. Instead, the focus is on whether common frames seem to emerge across groups of stakeholders. Such development would appear to be indicative of frame alignment. Tangibly speaking, this dimension will be operationalized in the analysis of the material by answering this question: Building on the idea of aligning frames, what similarities are emerging in the framing by different stakeholders in the municipalities?

2.3.2 Incongruent frames

Another direction interaction between frames can take is that incongruencies emerge or remain, causing inefficiencies in the implementation and application of technology (Leonardi, 2011:347). In this scenario, diversity of opinion and perspective, caused by issues in communication or irreconcilable differences, persist over time as different stakeholders fail to find common ground in their framings. Differences in educational backgrounds or level of involvement with the everyday activities of operations can lead to a different diagnosis of why technology is implemented and what issues are attached to it (Kaplan & Tripsas, 2008:791). Such differences are often sought out in the literature on technological frames. It is an important dimension to our understanding of the process, while carrying practical importance to the "success" of implementation. A word of caution is in order as not all differences in framing are necessarily bad. Some level of diversity of opinion is probably healthy to include more perspectives on how implementation can be improved to fit the organization's needs and purposes.
Nevertheless, these differences can hamper the process if fundamental factors like the *why* and *how* are not aligned. The classic example is perhaps the dynamic between managers in decision making positions and people "on the floor". The former needs to account for the reality of the latter for the implementation of new ideas to work, while at the same time understanding the purpose of the new idea can help the latter get on board with it. This dimension will be operationalized in the analysis of the material through the following question: Building on the concept of incongruence, what differences in framing are present, and has been present in the implementation phase among stakeholders in the municipalities?

2.3.3. Footing of frames

Finally, an interesting angle discussed in the literature, more in bypassing, as an interaction between frames in the framing process is the concept of "footing" (Cornelisen & Werner, 2014:46). This idea refers to an outcome were multiple framings of the issue can co-exist simultaneously, as long as there is some common negotiated basis that direct action. For context, one example of such footing can be seen in a study of police officers involved in an innocent civilian's accidental shooting. While their assessment of *why* the civilian needed to be stopped differed among them, there was a common ground in *that it was necessary* (Cornelisen & Werner, 2014:46). While a deeply unfortunate example, it offers an interesting tool for analysis of technological framing. Potential discrepancies in framing and analysis of the technology among actors can co-exist, but with a common stance of the necessity to implement it. For example, this interaction of a common *how*, but an incongruent *why* will operationalized in analysis of the material through the following question: Building on the concept of footing, what framings are present where common ground exist despite stakeholders perceiving the issue differently?

3. Method

3.1. Research design

To answer the research question, a method was needed that could help highlight the informants' perspectives. Focusing on the informants framing of implementation, the first step was to identify suitable subjects for study. Since only a few municipalities in Sweden have adopted RPA into their financial aid practices, the potential population was limited. The choice fell on three municipalities spread across Sweden, all of whom had adopted RPA in their process, where informants were available at different levels of the organization to give a more comprehensive view of the potential operational frames and experiences regarding the implementation.

As the point of emphasis is the perspectives and the framings of key actors in the process, interviews were chosen as the method for data retrieval. This method allowed the informants a platform to present their experiences and perspectives in their own words (Halperin&Heath, 2017:286). The design of the interviews will be addressed more in-depth under section 3.2. The informants were chosen strategically to allow for a wide range of perspectives on the process. Politicians from both the majority and opposition, bureaucrats on different levels, and private sector tech consultants were all interviewed to include as many stakeholders as possible. The selection of informants will be discussed more in-depth in section 3.3.1. This inclusion of different stakeholders offers a comparative element of sorts, highlighting how lessons and perspectives can differ and how multiple operational frames can be present in the same project. Reconciliation of these frames would be an interesting angle for future research. However, due to this project's constraints, the ambition is primarily descriptive, trying to present the diversity of frames present among the informants and how they interact.

A case study like this carries a series of methodological limitations in terms of external validity, as the results of the study are not necessarily indicative of experiences elsewhere (Halperin&Heath, 2017:147). Perhaps this is especially true as the municipalities selected were among those that did implement RPA, skewing findings, and raising questions about their reliability in regards to other cases outside this sample (Halperin&Heath, 2017:147). It is not hard to imagine the possibility that early adopters might share some characteristics that differentiate them from the majority of municipalities that have not adopted RPA to this point.

However, this skew is not necessarily an issue as the study and research questions were design to take aim at the perspectives and operational frames of the informants, ensuring that the internal validity of the research is strong (Halperin&Heath, 2017:147). Similarly, the findings reflect their lessons learned along the way. These might have utility to municipalities that follow their lead, despite the skewed nature of the sample.

In summary, a small number of key informants were chosen in different roles, spread across the three municipalities in the study. Through an interview-based method, their perspectives and framings of the process were retrieved and analyzed. Given the research questions, this approach is likely to produce results with strong internal validity but questionable in terms of providing more generalizable findings. That being said, these informants' experience likely still offers some insights valuable to other public institutions interested in implementing similar RPA technologies.

3.2. Interviews as method

To get a better sense of how stakeholders perceived the implementation of RPAs, semi-structured interviews were chosen as the primary method of investigation.

Interviews are appropriate for this type of research since they are a means to discover the subjective experiences of the person interviewed (Dalen, 2007: 11; Arksey & Knight, 1999:7). Further, this method complements the theoretical focus on the framing of relevant stakeholders in the process. This type of research has been applied before in regard to the implementation of new technologies in welfare services. For example, Sun & Medaglia (2019:370-1) who interviewed stakeholders in the implementation of IBMs Watson in cancer treatments in Chinese health care. While that was a different type of technology, it offers an interesting blueprint on how one can identify key stakeholders and extract their perception of challenges in implementation through qualitative methods.

In similar fashion, this thesis's focal point is the *perceptions* of key stakeholders in the implementation process, which needs to be reflected in the questions asked to the interview subjects. Accordingly, a key element to the method is finding ways to frame questions that cater to the subject's ability to elaborate freely on the issue, as opposed to being locked in by questions influenced by my preconceptions and biases (Dalen, 2007:13). The method used could be labeled as semi-structured. An interview template established some structure and ensured the phrasing of the main questions while giving the flexibility to ask follow up questions and explore the more in-depth topics raised by the informants. The questions were

phrased in such a way as to avoid ambiguous language, close-ended questions, and double-barreled questions (Arksey & Knight, 1999:94; Alvesson, 2011:16).Further, the questions were sequenced to avoid locking in a certain type of answer (dito). For example, a general question was asked about how the interviewee felt about the implementation of RPA, before follow up questions about potential benefits and challenges.

The interview guide was constructed to allow for a comfortable, introductory, warm-up question about the interview subject to build rapport early in the interview, and a final question about other important topics not covered in the interview to wind down (Halperin & Heath, 2017:293). For reference, the interview guide is available in Appendix 1.

Generally speaking, the use of a template made for an interesting trade-off from a methodological perspective. One the one hand having a series of questions to fall back on ensured that the questions were more consistently directed at the topic of interest, while maintaining phrasing and sequencing of questions that catered to exploring the interviewees' perceptions as opposed to my preconceptions (Dalen, 2007:13). On the other hand, scripting certain questions beforehand will inevitably influence the interview's direction to some extent. However, the interview guide likely increased validity by directing the questions on topics of interest to the paper, while more similarly asked questions make for more comparable material in-between categories of informants (Halperin&Heath, 2017: 159). This was important to the study as making comparisons between different frames across the body of informants was a key aspect.

Further, the interviews had to be executed in a certain way to follow the purpose of the study. According to Arksey & Knight (1999:39) one of the most important things to keep in mind when conducting an interview is establishing trust with the interviewee. This can be helped by making the situation resemble a conversation more than an interrogation, and the interviewer must be ready to throw out the interview guide if it becomes and an obstacle to a discussion that achieves the purpose of the study. Another critical aspect is the active listening and encouraging body-language of the interviewer, creating an environment where the informant is encouraged to elaborate on their thoughts and feelings about the topic (Halperin & Heath, 2017:293; Arksey & Knight, 1999: 102, 293). This aspect was likely helped substantially by the fact that the interviews were recorded. Not having to worry about taking fervent notes to transcribe the interview probably helped in being able to be more present and responsive to the interviewees' answers. At the same time, many of the interviews were carried out through online face-to-face meetings, as the covid-19 pandemic made travel and in person meetings infeasible, offering an interesting challenge in replicating the interview situation on this type

of platform. Overall building rapport over digital calls worked well. While obviously harder to build report a comfort level was established well enough for most interviews. Further, the digital context made the process around scheduling interviews easier, likely lowering the threshold, allowing more informants to find the time to participate.

3.3. Material

This study's material was made up of 15 informants from 3 Swedish municipalities that have adopted RPA in its financial aid process. These were chosen out of the small number of municipalities that have followed Trelleborg in implementing RPA in financial aid, estimated to be 5,5%[5] of Swedish Municipalities (Svensson, 2019:45). There is no coherent register for exactly which these 16 municipalities are, so the 3 chose for the study were simply those I could find where multiple stakeholders agreed to participate.

3.3.1. Sample

Given that so few Swedish municipalities have implemented this type of RPA and the ambition to understand stakeholders' perspectives, the question of sampling is of central importance. When selecting informants for a study, one should always be mindful of the potential skew this produces in the material (Dalen, 2007:57). This is a relevant point to raise regarding this project as the sample is made up by municipalities that have indeed implemented RPA in regards to application for financial aid. Through my research, I found 3 municipalities from different parts of Sweden, of different sizes, where I could find informants from different parts of the organisation, and their private consultants. A project like implementing new technology and accompanying organizational change is a process with multiple stakeholders. Representing as many stakeholders and potential frames as possible is important for our understanding of the process and improvement of future processes.
 Through exploratory analysis of the first municipality that I got in contact with I identified 4 broader categories, sorted into 6 typologies of stakeholders of relevance as informants to my research questions. These are presented in Table 1. and are made up of the following actors:

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[5] 16 out of 290.

3.3.1.1. Politicians

Refers to the elected officials that have the final executive say and responsibility for decisions made in the local public sector. To answer the question about different frames, focusing on potential political differences, representatives from both the governing majority, and opposition were chosen. Specifically, the chairman and second vice chair of the relevant committee[6]. Interestingly enough, the sample offered both center-right, and center-left run municipalities.[7]

3.3.1.2. Senior Bureaucrats

This category is made up of informants in more senior positions within their municipalities. For example, several informants were unit executives for the division for financial aid or the equivalent. Other titles included quality strategist and designated administration representative on the RPA project. They all had in common that they had been involved with the RPA project, and held a more senior position. While the organization of financial aid fell under different political committees in the samples, these actors' overall function was eerily similar across the cases.

3.3.1.3. Street-level bureaucrats

The category refers to the bureaucrats most directly impacted by the changes in their work, those responsible for interactions with applicants, processing applications, and making decisions on the individual applications for financial aid. This category is divided into two categories: some municipalities traditionally have social secretaries conducting the interaction and processing of initial applications' eligibility. In some municipalities in the sample, the former function was redefined as more of a coaching role, with the labour market in mind. In contrast, financial secretaries made calculations and payments. Sadly, fewer than planned informants in this category could participate in the study, often referring to heavy work-loads during the pandemic. The reader should observe the scarce number of participants in this category.

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[6] In these cases the committee for social work (Municipality A & B), or committee for labour market issues (Municipality C)

[7] Center-right Majority in Municipalities A & C, Center-left majority in Municipality B

3.3.1.4. Private Sector Consultants
This category comprises informants who participated in on the projects on behalf of the private consultancies that offered technological expertise on the RPA software. Participants in the study were made up of more senior consultants with co-ordinating responsibilities, not only software developers working hands-on with implementation.

Informant:	Municipality:	Municipality A	Muncipality B	Municipality C
Politicians	Majority	X (Centre-Right)	X (Centre Left)	X (Centre Right)
	Opposition	X	X	X
Senior Bureaucrats		X	X	X
		X		X
Street-level	Social secretary/ labour market coach	X		
Bureaucrats	Financial Secretary	X		
Private Sector Consultants	Tech Consultant	X	X	

Table 1. Informants by category. "x" indicates conducted interview.

These cases and informants were chosen as they offer revelatory insights into the diversity of frames among stakeholders in municipalities that have implemented RPA in their processing of applications for financial aid (Halperin & Heath, 2017:154). Politicians who make the final decision to proceed, senior bureaucrats who lead the processes of implementation, the street-level bureaucrats that are most affected in their everyday work, and the private consultants that contributes to the technological component.

3.4 Digital Appendix

Quantitative methods like interview studies, are often critiqued in that they are hard to replicate. This method has an inherently interpretive element, where the researcher filters the information presented (Arksey & Knight, 1999:15; Halperin & Heath, 2017:149). This issue is mitigated by the application of a systematic method and transcribing the interviews to improve academic transparency in regards to the findings. However, even under those conditions the reader will not get a fully transparent view of the material, and more subtle meanings can be lost in the transcription. Further, transcription is a time-consuming endeavor, often needing taking several hours per interview. All in all, it appears that transcribing is more work for a questionable end-product. The best solution would seemingly be to make the first-hand material from the interviews available to peer-reviewers and future studies.

At the same time, modern digital platforms allow us to store material and make it available to others easily. Open-source resources are a growing trend and a benefit to our cumulative knowledge and increase the transparency of, for example, academic research. Accordingly, this study's interview material is available to the readers of the paper through a digital appendix[8]. The idea being that anyone interested could access the original material. The publication of the material depends on the informants' informed consent (Halperin & Heath, 2017:162). All the informants were informed before the interview what the purpose of the study was, that it was being recorded, that they did not have to answer any of the questions. Further, they could end the interview at any time, and were told they could see a draft of the paper before its publication (Dalen, 2007:42; Arksey & Knight, 1999:102). They were also asked both at the time of the interview and later over email with time to reflect, if they gave their consent to the storage and management of the material in the digital appendix. Inclusion in the appendix depended on the informant's consent. They were also assured that the material can be revoked at any time if they request that. While the interviews were labelled anonymously, for example: "Politician 1, Municipality B", their voices could not be manipulated, potentially working as an identifier.

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[8] See Appendix 2, and section 3.4.

4. Results & Analysis

As mentioned, the ambition of this paper is to describe the technological framings of stakeholders to the implementation. Analysis of the interview will be presented below, categorized by theme in the interview guide, and informant group. The themes are presented together in Appendix 3 for an overview. The themes analyzed include perceived explanation for implementation (4.1), perceived benefits (4.2), perceived challenges (4.3), implications for organization (4.4), collaboration between actors (4.5), and take-aways from experience (4.6). The quotes used below are examples of frequent themes among informants. They are translated from Swedish, as the interviews were carried out in Swedish.

4.1. Explanation for implementation

	Politicians	Senior Bureaucrats	Street level bureaucrats	Private Sector Consultants
Explanation	Curiosity, and drive to improve. Necessity to increase efficiency.	Curiosity, and drive to improve. Especially by leaders in the organization.	Drive to improve, especially by leaders in the organization.	Curiosity and drive to improve, emphasis on local champion. Necessity to increase efficiency.

Table 2. Stakeholder explanation for implementation.

Informants in the senior bureaucrat category identified the reason behind implementation as generally motivated by the drive to improve practices in the organization, often lead by leaders within the organization. All informants spoke in similar terms of curiosity from within their own ranks as being the leasing reason for pursuing implementation of RPA, moreso than an externally forced need. As all the projects in the study were initiated at bureaucrat level a

framing was evident among these informants of the interlink between the drive to improve and the importance of individual leadership. In just about every case there is reference to this one co-worker who took initiative early in the process.

"We are curios. We got inspired by Trelleborg. We, just like them, like to be at the forefront and try new things. (…) Some things work, others don´t, but we learn either way I think". – Senior Bureaucrat 2, Municipality C. 15.40.

"I think we had a manager who ´drove´ this a lot, especially early in the process (…) then we also had an entire steering group of our administration who were brave and said ´ yes, let´s go´. And that's generally how it is, you need someone to pioneer and do the heavy lifting early" – Senior Bureaucrat 1A. 38.20.

In terms of the street level bureaucrats their framing of why the project had been undertaken and been translated into a new way of working was similar in the identification of key individuals leading the change, while less emphasis was put on the culture of curiosity that many of the senior bureaucrats spoke of. This difference however was more a matter of nuance as the drive to improve was also mentioned, just not as prolific.[9]

"I think we got lucky in getting (person x) as our boss, who really believed in this a ton. (…) and made us believe in it too" – Street level bureaucrat 2A. 33.30min.

Politicians on the other hand were more prone to frame the reason behind implementation in terms the curiosity to improve on a more abstract organizational level, moreso than emphasizing individual leadership.

"It hasn´t been galloping developments in cost that drove this development, rather it just showed up as an area for potential development" – Politician 2B.

Further the politicians in the study tended to frame the reason behind implementation not only in terms of an inner drive of the organization to develop practices, but also the external pressure to do so. Most politicians identified the necessity to increase the efficiency of the welfare system, framing it with ageing-, and growing, populations as the long-term backdrop.

"I imagine that it (use of RPA) can mean that municipal personnel doesn´t have to grow just because the population grows. For us, we will grow quite a bit, and have decided that we do not want to expand our city hall"- Politician 1C 10.40min

"I think that it (use of RPA) will mean, all things considered, that we´ll need fewer people employed to do the same job (…) but given the welfare challenge we are facing now that doesn´t mean that people will be left unemployed, they´ll be working with different things" – Politician 1A 7.13min.

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[9] Street-level bureaucrat 1A. 21.30min

In terms of framing of reason behind implementing RPA in the public sector, the private sector consultants in the study identified a combination of all of the above. Asked why municipalities take the step to implement necessity to increase efficiency, while also identifying local ambition to develop, often with emphasis on one or a few key individuals that understood both the technical component, and the operation it was supposed to be integrated into.

"There is a growing number of people that needs financial aid, and that creates a need to increase efficiency. Especially since it means that social workers struggle to keep up with working pro-actively" – Consultant 1A. 28.00min

"There was a… what I like to call a local ´champion´, someone with competence and a drive, and this combination of certain technical know-how, and know-how on the daily operations of the financial aid" – Consultant 1B 27.20min.

4.1.1. Discussion of frame interactions

Overall, an incongruence between technological frames can be identified as to the *why* of implementing RPA in the public sector. Informants emphasized inner motivations to develop practices or as a product of external pressure to increase efficiency. Some groups of informants, led by politicians and private consultants sometimes framed the issue using both arguments to frame the situation. It is important to note that individual informants sometimes emphasized different dimensions even within a group of informants, an example of frame inconsistency. While in practice these framings do not need to be mutually exclusive, since need is believed to be the mother of invention, there is a defined difference in framing as to why it happens.

Another incongruence that can be identified between categories is how much emphasis is placed on individual leadership as opposed to organizational culture as the driver of change in regards to the implementation of RPA.

Due to the above-mentioned incongruencies, it is hard to talk about a clear alignment of technological frames regarding stakeholder explanations of why the implementation of RPA was undertaken. At the same time, most informants arrive at the common conclusion that the project was beneficial generally speaking, which arguably means that there appears to be a footing of frames. According to the informants, there is no one dominant explanation of why

the project was undertaken, but these differences do not appear to have hindered implementation in any meaningful way.

4.2 Perceived benefits

Benefits	More time for qualitative tasks as RPA replaces routine tasks.	More time for qualitative tasks as RPA replaces routine tasks.	More time for qualitative tasks as RPA replaces routine tasks.	More time for qualitative tasks as RPA replaces routine tasks.
	Standardization, results in more equal judgements.	Standardization results in more equal judgments.	Big gain in *digitization*, moreso than introduction of *RPA*?	

Table 3. Stakeholder framing of benefits

In terms of perceived benefits to implementing RPA two themes emerged as dominant in the interviews: More time for qualitative tasks once routine tasks were automated, and the effects of standardized administration resulting in more equal decisions. This was especially true for politicians, senior bureaucrats, and private consultants.

Starting with the language used to frame the development of freeing up time for the staff, this was portrayed both in terms of benefits to the client, and the purpose of organization. These are portrayed as interlinked as the individual and the municipality both benefit from individual self-sufficiency. This purpose of helping the individual applicant more is achieved through realignment of tasks from routine administrative tasks to more direct face-to-face interaction with the applicant[10].

"what we realized is that the we need to take the resources we used to put into calculations, and use those to meet the clients applying for financial aid, and help them move on into self-sufficiency" – Senior Bureaucrat 2A. 3.20.

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[10] See also Consultant 1A, 10.58min, and Politician 2A 1.02min.

"It's a lot smoother, a lot simpler, you have time for more. It's a lot faster than flipping papers all day (…) you see the person, what it is that prevents you (the client) from moving on" – Street level bureaucrat 2A. 5.40min, 13.20min.

Further this realignment of tasks was also framed in terms of benefits to the individual staff member, referring to better use of educational background, that would overwise be wasted in the more routine tasks. This type of benefit is framed both in terms of enjoyment, as well as use of talent[11].

"The benefit (to RPA) is that it frees up time to do the actual social work. (…) We eliminate some of the boring, administrative tasks. If I use my own experience as a social worker as a starting point, it's not very fun to do norm-based calculations months on end". – Senior Bureaucrat 1B. 10.15.

"Honestly it's a waste of talent, (…) Having university educated personnel calculating fundamental math… Instead, we can focus on the work that matters (…) supporting the clients who are struggling in their unemployment". – Senior Bureaucrat 1A. 43.45.

This framing resonated with the street level bureaucrats as well in that they pointed to a reduction in paperwork. Accordingly, this group of informants had similar views, yet framed them more in terms of what particular tasks had been taken off their table. At the same time their framing was more nuanced in pointing out other new tasks that arose with the new way of working, with one informant pointing to the introduction of an e-application as perhaps being the more important benefit than the introduction of RPA.

"Sometimes I feel that we still struggle to keep up with administration, even with the robot since we need to check what the robot is doing. It happens too often that calculations are off. So digital application is great, the robot though (…) sometimes it helps tremendously, but sometimes it leaves you wondering what it did". – Street level bureaucrat 1A. 15.10min.

A lot of this likely comes back to childhood diseases for the robot, and the process to adapting work to the new process, but it is interesting to see how framing of this benefit is more nuanced the closer you get to the everyday activities of administrating financial aid. It should also be pointed out that different informants among street level bureaucrats experience this differently as some are asked to work along the robot, and other tilt more towards physical meetings with the client, in which case the benefits seem to be more clear cut.[12]

The second cornerstone to framing of benefits to implementing RPA had to do with the effects of fully standardizing decision-making according to the pre-set rules of the automated

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[11] See also Senior Bureaucrat 2C 29.50min.
[12] See for example Street level bureaucrat 2A 5.45min and 13.20min.

process. This is stated as a benefit as it ensures equal treatment of the applicants, independent of factors like what administrator you encounter, and what the personal chemistry is with said administrator. In this its often described as the perfectly rule based administrator freed from human error and biases and discrimination. This benefit was recognized by many of the Senior bureaucrats and Politicians in particular.

"I would say the administrative process becomes more ´legally secure´ given that it (the robot) makes decisions strictly based on what you stated in the application, it doesn´t have human emotions. (…) Everybody gets equal treatment" -Senior Bureaucrat 1C. 4.00.

"I have the feeling that this is more ´legally secure´. Decisions will not be as arbitrary, a machine can obviously get things wrong (…) but it's easier for a human to do a calculation error, than for a computer" – Politician 1A 4.15min.

This view can be differentiated to that of Street level bureaucrats as they identify this as a potential challenge instead. The technology is strictly rule based, something that is not always translatable into a complex reality that make up the circumstances of a human life and her eligibility to financial aid.

"Sometimes we ask ourselves: ´how the heck are we supposed to make this robot flexible enough to what we do´? (…) I feel like translating this flexible thinking to the robot has been the biggest challenge." – Street level bureaucrat 1A. 17.15min

This sentiment was shared by some informants in the senior bureaucrat category, who while often identifying the benefits of standardization also realized the trade-off it would mean for the process further down in the organization. This trade-off between equal and inflexible treatment was also recognized by a minority of the politicians. [13]

4.2.1   Discussion of frame interactions

In terms of the analytical categories, framing of RPA as a means to free up time for qualitative tasks by replacing routine-based tasks is likely the best example of frame alignment across groups of informants in this study. While street-level bureaucrats seem to have a more nuanced view of these narratives due to working with the technology on an everyday basis, all informants to this study mentioned this as a benefit.

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[13] See for example Politician 2C 6.30min.

A quick word on the small and skewed sample of municipalities that did indeed implement RPA is in order here. This frame alignment could be either a product of something all actors can observe or a successful way for those pushing for implementation to promote framing that allows other stakeholders to buy in. Considering how this framing creates perceived benefits for all stakeholders, it creates a positive way to make sense of the new situation for politicians, bureaucrats on all levels, and the consultants hired to help with implementation. Since the sample is made up of municipalities who did go ahead and implement RPA in their process feels fair to wonder if this framing in itself is an important factor to implementing in the first place. Creating this alignment of frames of mutual benefits, that the municipality can increase efficiency, while not laying off workers, but instead giving social workers more time for stimulating, qualitative tasks is perhaps a way to get all stakeholders on board from the start.

The point about qualitative tasks is also interesting to note, that this alignment of frames paints a different picture than previous research in regards to the professional role of social workers in financial aid. Instead of framing RPA as a threat, the informants to this study framed RPA as a means of strengthening the professional role by opening up more time for qualified tasks. While judging the merit of that argument is beyond the scope of this paper, this framing of technology does seem to offer an avenue for buy-in from the staff.

An incongruence would appear to exist in regards to the benefits of RPA, with street-level bureaucrats pointing more towards digitization of applications as least as important of a development from their point of view. While other informants potentially noted this benefit, it was scarcely mentioned in the interviews, pointing to an interesting difference in perception. While it might be easy to be carried away with the effects of new technology, other related changes that fly under the radar in the same process can be of equal importance.

Another perceived benefit, where there seems to be some alignment of frames, at least between politicians and most senior bureaucrats, is the idea that the robot preparing calculations based strictly on input data in the application and public databases will ensure more impartial decisions. At the same time, some incongruence seems to exist in relation to framing by street-level bureaucrats, and some inconsistency within the senior bureaucrat- and to a lesser degree, the politician- categories, as this standardized process sometimes is not flexible enough to account for unique situations of applicants.

4.3 Perceived challenges

Challenges				
	Fear of change and substitution among staff.	Fear of change among staff in regards to new tasks.	Standardization of algorithm sometimes hard to translate into complex reality of cases.	Fear of worker substitution among staff.
		Standardization sometimes hard to translate into complex reality of cases.	Adapting to new tasks.	Communication between social workers and software engineers. (Including with municipal IT.)
		Communication between social workers and software engineers.	Communication between social workers and software engineers.	
		Avoid over-reliance on technology.		

Table 4. Stakeholder framing of challenges.

As alluded to above the fact that the automated process is standardized was framed as both a benefit and a challenge by senior bureaucrats. While standardization results in more equal treatment, the RPA-based automation process struggles with irregular cases. Both senior- and street level bureaucrats emphasized that these types of irregular, but important, circumstances are frequent among applications.

"In certain cases, an individual judgement is necessary. Take for example when an individual administrator knows about something of importance, that maybe is in the notes in their file (but not in the application)" – Senior Bureaucrat 1C. 5.50min. [14]

Another common theme in terms of framing of challenges was the need to manage anxieties in some form among the staff. The informants all identified how a change like this one involves stress on the organization and its employees. What is interesting to note about it though is the way it was framed with focus on realignment of tasks for the employees more often than existential fear of worker-substitution. More informants framed it in terms of general resistance to change, reluctance to embrace the new tasks by some, and fear of a spike in applicants trying to cheat the system.

"Its obviously been a tough challenge changing the culture of a workspace, with employees that have not worked directly with clients. (…) If you´ve been nurtured professionally to run a lot of checks on the applicants details. (…) to now being asked to interact with the client and help them move on". – Senior Bureaucrat 2A. 8.33

"In the beginning it was chaos. Everyone was terrified, especially the administrators around here. ´What´s going to happen? It´ll never work´. We're going to pay out so much more aid now´. (…) it took several month to convince everyone that it was going to work". – Street level bureaucrat 2A 1.10min.

Regarding this dimension there was an explicit emphasis by some informants, primarily among senior bureaucrats, politicians, and consultants on the need to communicate clearly on the idea behind the implementation, and actively promote a certain technological framing if you will. The key being that RPA is supposed to compliment the administrators in their work, not replace what they do.

"That's a challenge I see. That you haven´t prepared you own staff enough, talked about how and why we do this, have them take part... Ultimately this is a digital ´co-worker´ as we call it, that´s how you should view this. It doesn´t come to the coffee-break and take part in the chatter, but it takes part in doing some of the work"- Consultant 1A 13.00min.

Another challenge, that will also be addressed under the collaboration between actors' section, was the challenge of creating understanding across professional groups, especially in regards to creating common ground for communication and understanding between social workers and software engineers involved on the project. The challenge here was that many informants in the senior-, street level bureaucrat, and consultant categories in particular raised the issue of different stakeholders not understanding each other's "language" due to very different points of reference in their work and educations.

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[14] See also Street level 1A 17.15min.

"It (collaboration with private developers) has worked well, but its always hard since you speak different languages. (…) we have our ´government language´, and they have their ´programming language´ (…) Sometimes they use words that make me go: huh? And I feel that I often have to explain things a lot to them - Street level bureaucrat 1A. 11.15min.

A challenge identified among primarily senior bureaucrats and consultants was to try to avoid over-reliance on automation, both on the individual and the organizational level. Starting with the bigger picture many of the informants frame the potential of RPA in public sector as big, but limited to certain types of tasks. Accordingly, there is an noticeable challenge in finding realistic expectations for RPA.

"There is a risk of over-reliance on all levels, maybe politically and higher up in the organization in particular, that this is the answer to all the challenges we face. (…) I think its one part of the solution to the challenges social services are facing, but it's not applicable everywhere. It is only applicable where there is administrative, repetitive tasks. – Senior Bureaucrat 2C.

Further a similar challenge presents itself on the individual level were street level bureaucrats should be mindful not to become singularly dependent on the calculation of the robot. Perhaps this becomes more important if RPA-solutions becomes the norm, and few remember what its like to work without it.

"Administrators on financial aid that maybe haven't worked without an RPA solution tend to rely to much on it, and assume that what it's done is correct, and don't audit it critically in the same way" -Senior Bureaucrat 1, Municipality C 6.30.

4.3.1. Discussion of frame interactions

In analyzing stakeholders framing of challenges in implementing RPA the alignment of frames in regards to anxiety and fear among staff stands out as the most consistent themes in the interview material. All groups of informants point to challenge as to the project, getting all stakeholders, but perhaps those tasked with working in the new system in particular, to buy in to change. This is frequently described as a process, but one where street-level bureaucrats got on board over time. While this is a consistent finding one could argue that the interaction of frames here is an example of footing as all agree that this is an issue, but the core of the problem is not the same to all informants. Informants agree that there is initial anxiety among the staff. However, politicians and consultants are more prone to identify the more existential fear of losing one's job. At the same time, senior bureaucrats and the street level bureaucrats

themselves frame the matter more in terms of resistance to a change in tasks. So, while no consensus seems prevalent, there is a common idea of change-induced anxiety as a challenge to implementation. On the one hand, this would seem to indicate that people closer to the actual administration have a better sense of what the transition means for the work.

The lack of terminal fear among staff is likely related back to the point about finding a framing in these municipalities that allowed staff to buy in. The idea of firing workers was never on the table, rather realignment of tasks was emphasized from the start, something that likely helped in preventing severe incongruencies between frames early in the process.

All stakeholder groups involved with the hands-on implementation, frame communication between professional groups involved as a challenge to be mindful about. Stakeholders use a fairly common terminology in framing this issue as a matter of "speaking the same language". As we shall see below, finding ways to bridge this gap in language is a key take-away for many informants, underscoring the importance of this dimension to implementation success. The one incongruence between frames that exist here is that consultants are more prone to point out similar issues within the municipalities, specifically between the social services and municipal IT. Politicians do not mention this type of issue, likely because they are not directly involved with the hans-on part of implementing RPA in the financial aid process.

As discussed above the standardization of process for financial aid calculations appears to be something of a double-edge sword in that incongruence exists between frames as to whether it mainly results in more equal judgments, or flawed calculations due to the technologies inability to handle the irregular nature of cases.

Finally, the topic of over-reliance is mentioned by senior bureaucrats, and to some extent by consultants. The matter is framed in terms of maintaining a critical mind-set, a defined idea of the technology's strengths and weaknesses. While not subject to consistent incongruence or alignment, this dimension is pointed out by two groups of informants as something to be wary of.

4.4 Perceived implications for organization

Implications for organization				
	Need for change management. Rudimentary understanding of new system.	Need for change management. Rudimentary knowledge of RPA and IT needed. Need to refresh social work dimension of job.	Reconfiguration of tasks, more interaction with clients. Ability to solve simple IT-related issues.	Need for change managers or "Champion". Cluster of competencies needed, combination of knowledge of financial aid, IT & RPA. Competence in designing procurement needed.

Table 5. Stakeholder framing of implications for organization

Asked about the implications of RPA on their organization most informants tended to frame the responses in terms of competencies, rather than organization of work. For example, a realignment of organizational practice was perceived by most bureaucrats, but it was framed more in terms of what was needed from the social workers in terms of new skills. In summary the need for certain competencies were framed in terms of a few key dimensions: competencies to manage change, IT competencies (to varying degrees), and competencies in designing procurements.

Starting with need for change management as a competency this skill was identified by informants in the politician, senior bureaucrat, and consultant categories primarily.

"It (RPA implementation) is demanding in terms of the ability to manage changes. This whole, you know, ´this how we always did things´-attitude, you need to let those go a little bit." - Senior Bureaucrat 1, Municipality A. 28.55min.

This could be frames as a matter of group level, "culture change"[15], or more tied to key individuals or a "local champion"[16].

Another dimension with implications for the organization of RPA in financial aid can be seen in further demands for re-developing competencies among own personnel as the RPA process change the content matter of work descriptions for their co-workers. Many informants agreed that a key benefit to implementing RPA was how it freed up time from routine based to qualitative tasks, specifically face to face interactions with clients. That development changes the skills needed to among street level bureaucrats in the organization, with a renewed emphasis on the interaction with clients, and the social dimension to social work, albeit with a clear focus on the social dimension as a means to the end of helping the client find an occupation and "move on from financial aid"[17]. The senior-, and street level bureaucrats had a similar way of framing what the new of working meant for the organization, with a clear shift in tasks at the job from routine-based calculations to interaction with clients, at least for some of the staff.

"It is a realignment for the organization for sure, but that´s the point, that some people work strictly with helping them (the clients) move on" – Street level bureaucrat 2A. 10.45min.

"Quite frankly we had these competencies education wise, with most of our staff being social worker. But some of them had been working for so long, maybe 15 years, with calculations and controls. But when it came to interaction with clients and encounter a human in their situation that was not easy for everyone. So, what we needed to do was re-train our staff in that interaction with clients, motivational conversations for example." – Senior Bureaucrat 2A. 21.33min.

In terms competencies needed to run an implementation project that translates into a new sustainable way to organize the work around financial aid, groups of informants had slightly different ideas of what was needed. They all agreed that some level of it knowledge was necessary, yet framed it differently as to how much was required. Street level bureaucrats emphasized the ability to solve small everyday type of problems, with similar sentiments among politicians and senior bureaucrat framing rudimentary knowledge of IT and systems as enough to operate RPA in regards to financial aid.

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[15] Senior Bureaucrat 2, Municipality A. 20min.
[16] Consultant 1B.
[17] Street-level bureaucrat 2, Municipality A. 14.05min.

"I can´t say that I´m a tech genius. But I think you need some basic knowledge of what you can expect from a digital system. (…) If you feel comfortable around computers it shouldn´t be a problem." – Senior Bureaucrat 1C.

Consultants framed the matter more in terms of the need to have a whole cluster of competencies available in the project, including in-depth IT knowledge, and understanding of the process being automated[18]. This latter competency of understanding the process of financial aid was likely implicit among the groups of informants in the public sector as this is quite literally what they do at work.

In a final point relating to competencies, the framing of this dimension by consultants stood out in that they emphasized the need for their public counterpart to improve procurement procedures. A leading narrative being that public side needs good understanding of what exactly they are asking for, to really benefit from the potential of RPA.

"We have seen some weird procurements, that doesn´t really help in understanding what you´re asking for. Competence in procurement, along with IT competence, and understanding of their own process is really important from the customers (public sectors) point of view"- Consultant 1B 23min.

This framing resonated with a minority of senior bureaucrats, specifically in Municipality C, where they had moved on from their first version of RPA solution. They framed their experience of procurement and implementation as better the second time around, partially due to more experience with the technology.

"We learned a lot, both in terms of IT and our own process that we could include in the procurement with the new supplier" - Senior Bureaucrat 24.40min.

4.4.1. Discussion of frame interactions

Much like in other categories, it is hard to say for sure if informants giving different answers means that there is an issue with incongruence or if they just happen to emphasize different aspects in their answers. In regards to implications for organization this question feels especially important to highlight as there is no evident contradiction between different framings, even though they are different. For example, when asked about what competencies and organization need when introducing RPA, bureaucrats on multiple levels mention the need to develop skills for interacting with clients among staff. At the same time, consultants

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[18] Consultant 1B, 17.40min.

point to competence on how to design a good procurement. These are by no means mutually exclusive, but more than anything, they might be examples of how different actors see different parts of the whole picture here. Those working on day-to-day with financial aid see what the realignment in tasks means, while those brought in to deliver based on a procurement focus more on how said procurement is designed.

Frame alignment does seem to be present among groups of informants regarding the need for change management during the implementation. While not explicitly mentioned in regards to this question in the interview's street-level bureaucrats in the study all mentioned how one or several managers within the organization had played a key role in bringing about the automation and subsequent realignment of tasks. The one difference in framing that seemed to exist was whether this change management was tied mainly to an individual or the entire organization. This is an interesting discussion well beyond this paper that ties into the age-old discussion about structure and agency. Do individuals create change in their environment? Or do environments create change in individuals as a product of their structure? Or maybe both of the above? These questions are ever-present when it comes to analyzing organizations and institutions. Without dwelling on this topic for too long it would seem to yours truly as both framings are prevalent in the material, and both likely holds merit as culture changes likely does not come about without individuals embodying the change, while individuals leading projects that fail to resonate with the larger group stand little chance of success.

The one area where some incongruence between frames appeared to exist between informants was how the need for IT competencies was framed. Politicians, senior-, and street-level bureaucrats emphasized rudimentary knowledge of IT combined with interest as a good starting point while consultants framed the matter in terms of the need for a cluster of expertise knowledge, including IT. Again, this difference likely comes back to the difference in perspective, depending on position. For example, bureaucrats emphasize what IT skills they need to hold up their end of bargain while assuming external help on the more complicated technological matters during the project period. So, while bureaucrats see what is needed long term in the daily operations, consultants framed their answers in terms of what is needed during the project period of implementation, since that is the part they partake in. Accordingly, I am reluctant to speak about the incongruency of frames here as much as the realization that the project period, and operational period require different technological knowledge levels. That being said the system needs to be maintained by someone, specifically the municipal IT section in most cases. Once again, it is unfortunate that this group of

stakeholders were not part of the material. Further, one could think about whether the lack of mention of this group from most informants in the bureaucrat categories was just a matter of not mentioning something that seemed obvious the informants. Or maybe a confirmation of consultants being onto something when framing understanding between social services and municipal IT as a room for improvement. An argument will be raised in the section below.

4.5 Perception of collaboration between stakeholders [19]

Collaboration between actors	No political quarrel. Initiative from bureaucratic level.	Good if time was set aside to work closely together and understand each other. Initiative from bureaucratic level.	Positive, yet challenges in communication with IT people that speak a "different language". Frequent meetings key in trying to combine skill sets.	Process is the key, not IT. Positive, if municipal IT is on board early. Sometimes issues in communication between municipal IT and social services.

Table 6. Stakeholder framing of collaboration

In terms of framing of the collaboration between stakeholders on the points of interest to this paper was whether there was political contention over the implementation of RPA in the process around financial aid. While that might very well be the case in a larger and more

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[19] As this section analyses interaction between actors, it seemed more appropriate to discuss frame interactions at the same time. Meaning that the whole section is such a discussion and no separate subheading about these interactions will be presented in the end.

representative sample of Sweden's municipalities, it sure was not among the informants to this study. Despite informants representing both the governing majority and the opposition, members of the centre-right, and centre left party alike, and in different combinations of ruling parties it appears as if there has been very little, if any political contention over the implementation.

That is not to say that informants were in agreement on the problem formulation, and key definitions related to the new way of organizing and framing the process of financial aid. For example, using the term "customer" instead of "client" was contentious in municipality C[20], a discussion with implication for how you frame the activities of the public sector in general. Further prospects of applicants cheating in the new system, and scepticism of long-term benefits differed some along ideological lines[21]. Yet, there seemed to be alignment of frames within this category of informants in that implementation of RPA was something positive, with a common emphasis on how the resources freed up by automation should be realigned towards more qualitative interaction with the clients. Accordingly, I would argue that the political framing of RPA in financial aid in these municipalities is an example of footing of frames. There is no consistent agreement on motivations, but agreement on the idea that it should be implemented.

Perhaps this lack of political quarrel on the matter can be explained by the ideas being initiated on the bureaucratic level. This is important to point out as the literature often emphasize the challenges to implementing something from the top down, with a lot of challenges in getting the staff to buy in. While most informants to this study agreed that getting the staff to buy in was a challenge, particularly early, it could potentially have helped to bridge that gap that the initiative came from the bureaucracy itself. Senior bureaucrats in particular were pointed out as the drivers of change, and while these still needed to get street level bureaucrats and politicians to buy in, it might have helped that the idea originated from within the organization it was supposed to affect.

As described above differences in ´language´ between stakeholders was framed as a challenge by most actors directly involved with the implementation process. Accordingly, many of them framed collaboration based on how well they had experienced the process of bridging these gaps in terminology and knowledge of each other´s areas of expertise. A common theme here

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[20] See for example Politician 2C. 16.40min, and Politician 2B 6.10min.
[21] Politician 1B 4.30min.

was on the necessity to include all stakeholders early, and making sure that they meet frequently throughout the process to build a report and improve collaboration as well as improving the end product.

"I´ve worked closely together with one RPA developer in particular (…) we had daily briefings throughout the project, half an hour every day. Going through back and forth. Presenting what we want to do, discussing it, him getting to work, and then getting back asking about solutions. (…) So, a very good collaboration without prestige. I mean we are ´blind´ on each other's areas, he´s the tech expert and I´m a social worker. It has been a balancing act trying to find each other, speak the same language." - Senior Bureaucrat 1B, 26.40min.

One thing that did differ in framing was how the consultants emphasized the need to include another important stakeholder early: The municipal IT section that would eventually be asked to maintain the RPA solution once implemented. Further this group of informants perceived this factor to being a key difference between successful and problematic implementation projects, referring to the same gap in language between IT personnel and social workers within the municipalities, referring to themselves having to function as the bridge sometimes due to their experience with running similar projects.

"I´d go as far as saying that many times IT and the social services don´t understand each other, they speak completely different languages. Sometimes we need to go in there and bridge that gap. You could say that´s our strength, we know both process development, change management, and IT" - Consultant 1B. 19.47min.

4.6 Take-aways from experiences

Take-aways				
	No need to fear technology, only changes what people do. Need for institutional routines for implementation.	Include staff early, communicate a clear *why*. Find "bridge" (a person?) between languages of IT and financial aid	No need to fear technology, only changes what we do.	Process key, not technology. Project co-ordination, involve IT, social services, and consultants early.

		Process will and should take time.		

Table 7. Stakeholder framing of take-aways from experience.

One of the more important take-aways across the board, but maybe among the groups of stakeholders involved directly with the implementation process in particular, was the need to find ways to bridge the differences in between the different skillsets involved in process. Specifically, how RPA based solutions and day-to-day activities of the social service can be integrated. Many of the informants to the study spoke of the perceived difference in "language" between private IT developers and the organizations own staff. While most experiences were positive for the informants, many emphasized this the need to actively find ways to develop this collaboration in order to run a successful implementation. The framing of how to solve this issue differed some across groups, but the essence was consistent as collaboration with the other counterparts were emphasised as necessary. Among senior bureaucrat's emphasis was on finding a specific person that functioned as this bridge, a person that could be deeply involved with the project on behalf of the day-to-day operations. Further emphasis was put on this inclusion happening as early as possible to avoid difficulties later in the project.

"The best thing you can do in my opinion is to have a person with knowledge of the day-to-day operation (of the social services) who can explain how you do the entire financial aid process, in a clear way, together with the developers of the robot. Someone that can function as this ´bridge´. A designated person working full-time." – Senior Bureaucrat 1C. 14.50min.

"I have worked really close with one developer of the RPA solution. We´ve had daily breifings together (…) which was a really good collaboration. I mean we are blind to each other's areas of expertise, he´s the tech expert, and I´m a social worker. It has been a challenge to find each other and speak each other's language, but it helped that I know some about these things (IT). It would have been really hard to work this out without a person who is interested in these things (referring to IT) I think" – Senior Bureaucrat 1, Municipality B. 26.40min.

This sentiment was shared by informants in the private consultant category, but perhaps with a slightly different point of emphasis. They did see the necessity of a "local champion"[22] to run the project, and understand what to expect from the technological side present in their

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[22] Consultant 1B. 27.20min.

framing, but in regards to finding a bridge between the private and public sector actors this was framed more in terms of institutional set-up. This category of informants framed it in terms of putting together common working groups early in the process, with representatives from several stakeholder groups. This formulation included someone from themselves, the day-to-day activities in the social services, but also the municipal IT section tasked with maintenance of the system after implementation. This final category was sadly not included in the sample of the study, which in hindsight is unfortunate as this perspective is very important to understand how the new program is maintained over time.

"In the projects that have worked really well there has been a good collaboration between the day-to-day organization, municipal IT, and us (private actor). (…) A key lesson is to include those that are affected by this implementation in the project, or to be even more clear, in a steering group. It´s really important to have a formal steering group" – Consultant 1B 17.50min, 30.40min.

Related to this point was a key element to the framing of implementation of RPA by the consultants in particular: The need to approach this as a broader process, not just a matter of using a particular technology. Automation as framed by them, and some other informants, is a matter of running projects together with a diverse set of stakeholders, aiming to change processes, not just use new technology.

"RPA is not technically difficult, its often the relational parts that are not so easy at times, and create difficulties" – Consultant 1B 20.15min.

"It's a day-to-day-operation project, a very soft one at that, not technical. It´s a journey of change, a new way of working, for the social services in this instance" – Consultant 1A. 1.34min.

In response to the perceived challenge with anxiety among the staff a key take-away by multiple stakeholders, particularly by senior bureaucrats and consultants was the need to dampen this anxiety early through communication of a clear *why* to the implementation. In this they tended to allude to the need to promote a certain type of technological framing of RPA as a tool and a compliment, not a replacement of people.

"I know in other municipalities there has been a worry that you use the robot as a reason to fire personnel, that discussion never happened here, on any level (…) the automation rather, has been about freeing up resources to work more towards getting people into jobs and education" – Senior Bureaucrat 1A. 15.33min.

An interesting part to this framing is that it differs substantially from earlier research who has portrayed the introduction of automated processes as a threat, delimiting the professional role for social workers. These informants frame the process more in terms of empowering the

profession in its role by redirecting tasks towards the more qualitative tasks of the job, like interaction with clients, albeit with a firm focus on getting people to work.

This narrative does not just seem to be a product of wishful thinking by management and private actors trying to sell a service, but seems to resonate with the other informants framing of the process as well. While street level bureaucrats are more modest in their praise of the new systems there is little doubt that routine tasks are taken off social workers plate, and the time saved is used to realign tasks towards more client interaction, and the social dimension of social work.

"You might sit with 10 (applications) a day in the paper format, or 7-10, now you make it through 20. So, you can put that (saved time) into other things (…) You see the person behind (the application) now, that's the important part" - Street level bureaucrat 2A 6.15min. 13.20min.

Again, it should be noted that new type of administrative controls and tasks emerge with the new practice, but general consensus is that much of the time saved is indeed realigned to client interaction. Especially for the social workers assigned with client interaction. In two of the municipalities participating in the study introduction of RPA has been combined with an organizational shift where this client interaction is happening under a labour market division, and the third one is trending in the same direction, meaning that social work is still a part of the client interaction, but coaching to reach occupation is a defined goal of the operation.

A related take-away from many informants, particularly among politicians and street level bureaucrats, is that these initial fears that they had might have been unproportionally. The matter is framed in terms of a better understanding of what RPA is, and is not, leading to a changed approach to the technology.

"It's not dangerous. I mean it works. No one has died around here. (…) The computer only does what we tell it to do, and I mean if we think somethings worked well, other things need to change, then we can add ´x´, or maybe we need to remove ´y´. It´ll be fine" – Street level bureaucrat 2A 33.30min.

"The lesson is, when something new comes around, maybe we don´t need to be afraid of it. Maybe we don´t need to fear when new things like robots and cameras are introduced, that they will replace staff, there will always be a need for staff (…) because the physical encounter is always important. And once time is freed up, thanks to the robot, that personal meeting offers something completely different" – Politician 2A 11.10min.

Finally, it should be pointed out that many of the informants in the senior-, street level bureaucrat, and consultant categories emphasised how time consuming the process of implementing RPA in the processing of applications for financial aid. While the informants were content with the outcome in most cases, they were consistent in framing the

implementation as a considerable investment, urging new entrants to this field to closely define the idea of what it is supposed to lead to, not just automation for automations sake.

"It's easy to think: ´it's only to digitize´, just put this process in the digital context. But that requires a lot from an organization"- senior bureaucrat 2A 25.10min.

"Have a clear picture of where you´re going. I know there has been friction in some municipalities in the introduction of this, people have been worried. Clarity from management is incredibly important in this type of process, to know: ´why are we doing this?´"- Senior Bureaucrat 2C 34.17min.

4.6.1. Discussion of frame interaction

This dimension of framing was included as a way to try and answer the second research question of what stakeholders identify as lessons from their experience with implementing RPA. Interestingly enough findings in this category points to rather consistent statements across groups of informants, with two dimensions standing out: Formulating a clear idea of why the project is undertaken, and finding ways to bridge differences in language and understanding between stakeholders.

Beginning with why the project is undertaken, frame alignment would seem to exist around the idea that implementing RPA on financial aid is not just a matter of buying a robot and turning it on. Rather implementation should be regarded as a time-consuming endeavor, that requires a defined idea of what the technology can enable in your process. Relating back to the segment about perceived benefits, the framing prevalent in the municipalities in the sample seems to be that replacing tedious routine tasks creates more time for interaction with clients, not the idea to reduce the work-force. It appears as if there is buy-in across the board as categories of informants that were reluctant early in the process, specifically street-level bureaucrats and some politicians, emphasize how they have come to identify their skepticism of the technology as exaggerated. A chicken-or-egg discussion emerges in regard to this narrative and the small sample. Is this frame alignment a product of experiences of RPA, or a condition for implementation in the first place? That question is difficult to answer without including a larger sample of municipalities in the study, which was not feasible for this thesis, but could perhaps be a line for future research.

Secondly, informants' other main take-away was in response to the identified challenge in communication between stakeholders. There seemed to be general agreement on the idea that

this challenge needs to be addressed through developing collaboration. At the same time, different stakeholders identified similar yet slightly different ways to achieve this by emphasizing the frequent meetings and communication across stakeholder groups, with some informants framing this in terms of institutional set-up throughout the project. Whether this is an example of footing or alignment is a matter of nuance as the institutional set-up can be a way to create the interaction mentioned by the other informants. However, for the sake of argument it would appear as if there is footing of frames on this topic, similar ideas of what needs to happen, but different ideas on how to get there.

5. Concluding discussion

Regarding how informants frame the explanation as to why RPA was implemented in their municipality, two main themes are present. Some frame it in terms of external pressures from aging- and growing- populations that create a need to increase efficiency. This framing is more common among politicians and consultants than other stakeholders. The other major theme is based on internal pressures from within the organization. These are framed either in terms of an innovative culture, as driven by key individual leaders, or a combination of both. The framing of internal explanations is prevalent in all groups of informants. The difference being that politicians are less prone to emphasize individual leaders, perhaps due to their limited insight into the implementation project's day-to-day operations.

Framing of benefits focused primarily on how time saved on routine tasks could be realigned towards qualitative tasks like client interaction and framing of standardized calculations resulting in more equal judgement across cases. The idea that the implementation of RPA had resulted in increased efficiency by substituting the routine tasks of data retrieval and norm-based calculations. The only difference in nuance being those street level bureaucrats working alongside RPA on calculations had better insight into the current limitations in the technology and the new tasks that arose with working alongside a robot. That being said, these stakeholders also subscribe to the idea that implementation has meant an opportunity for significant realignment of tasks towards more client interaction. It should be noted that there is a difference within the street-level bureaucrat group as roughly one-third of the old workforce work alongside the robot on calculations and were less prone to point to benefits. At the same time, two-thirds had been realigned as labor market coaches or social secretaries, depending on local set-up. At least from this small sample, it would seem that the latter group were more prone to point out how time had been freed up to interact with clients. This difference in perspective would seem reasonable given that these groups are affected differently by the change, specializing one way or the other on either working more with clients or more alongside the robot. This difference is interesting and could perhaps offer an entry point for future research. Parts of the current literature on digitization in the public sector points to how professionals' roles are increasingly hamstrung by digital practises and documentation. Yet, the perceptions of the informants seem to point in a different direction. Perhaps the application of RPA and automation is qualitatively different from other means of digitization in enabling professional roles, at least for those realigned to working closer to clients?

Related to this point of more client interaction, the senior bureaucrats in particular perceived a need to renew skills related to client interaction among the staff in the early stages. Many informants, interestingly not the street-level bureaucrats themselves, were also prone to point out how this realignment towards more client interaction would make for better use of the university-trained social workers. Again, perhaps this development strengthens the professional role by making supporting clients a more significant part of the job. At least this seems to be part of the framing in the municipalities in the sample. Perhaps this is an indication of actual strengthening of professional roles, and perhaps it is indicative of active framing by proponents of automation, or maybe both of the above. This issue could be another line of future research, investigating whether a material realignment of resources on the street level for bureaucrats, with more staff-hours realigning towards tasks in line with a degree in social work.

In terms of standardized calculations resulting in equal judgment this framing was something of a mixed bag, and again, perspective seemed to matter. The actors farthest removed from the daily activities of financial aid like politicians and consultants, were more prone to point out the benefits of more standardized and equal treatment, independent of human factors that can skew judgment. At the same time, the street-level bureaucrats working on the process everyday were more prone to frame this standardization as a challenge given the complex nature of the cases they see on an everyday basis, with senior bureaucrats seeing both perspectives more than other groups of informants. One way to interpret this finding is that there is an incongruence that will be hard to bridge. A choice in philosophy needs to be made on the organizational level on what dimension to prioritize. For example, whether one can live with this inflexibility as a part of the automation process. Simultaneously, the application of this technology on processes in the public sector is still in its infancy, meaning that there could still be room for improvement of technology, practices, or more likely a combination of both.

A more general point about learning can be made here as Sweden's 290 Municipalities carrying out similar activities under the same legislation, offering plenty of opportunity for mutual learning on automation. In discussions with informants, it appears as if collaboration on things like automation is very fragmented. Some private consultants point to their companies as vessels for learning across municipalities as they build experience with similar projects in different places. While this might be true, it might be something of a power asymmetry as for-profit corporations develop an information edge over the ordering municipalities, at least in theory putting the public side at a disadvantage in getting good

value for money. Accordingly, the public side could benefit from improving knowledge diffusion across municipalities. SKR would seem like a very suitable instance for such diffusion, and while one municipality in the study had a close collaboration with SKR, these practices could surely be developed. Further, on the topic of knowledge diffusion among local governments, platforms for knowledge exchange across borders as bureaucracies likely face similar challenges in applying technology like RPA on public sector activities would be another area with room for improvement.

Perceived challenges among informants are largely dominated by how change creates anxiety among the staff, and communication between professional groups.

Starting with anxiety towards change, the framing of benefits in the realignment of tasks would appear to have offered the municipalities in the study with a way to manage these as worries among staff were framed more in terms of the new tasks than fear of termination. That may have helped prevent staff-uproars seen elsewhere. It would seem as if this framing is backed by the assessments of bureaucrats themselves, with a tilt towards more client interaction. That being said, it should be pointed out that this client interaction allows for more in-person support by the social worker, but with a marked focus on joining the labor force eventually. Further, while lay-offs had not happened in the municipalities in the sample, the change meant that several staff members were realigned from their old tasks, creating a need to renew skills in regards to client interaction. However, for those struggling to adapt to this change there could be issues with sticking around long term as there are fewer jobs in the calculations and that working alongside the RPA solution becomes a part of that job description. A general issue to automation, this concern should not be taken lightly. While benefits long-terms seem evident, one could wonder what will happen to older staff, potentially struggling to adapt to new working ways.

Challenges in communication between professional groups is one of the more consistently aligning frames among informants working close to the implementation projects, leading one to believe that it poses a central challenge to the implementation project. Interestingly enough, this challenge in communication is not dominated by politized conflict based on ideological incongruencies. Instead, there is seeming political consensus on an initiative coming from the bureaucratic level.

That this gap in 'language' is identified between groups of professionals is perhaps no wonder as the people asked to collaborate on the implementation of RPA in the public sector have very different backgrounds from an educational perspective. Given the Swedish education system's design, public sector officials and engineers from the private sector in most cases

chose different educations all the way back in high-school, which means that their intellectual paths have been separated from about age 16, before being asked to collaborate on a common task decades later.

Whatever the reason behind the gap, the idea that it needs to be bridged was a central part of how stakeholders frame implementation of RPA on financial aid processes, the *how* of finding that 'bridge' differed some across groups of informants. Some identified a person with an understanding of both elements as a good starting point, while others framed the matter in terms of setting up a structure in the project for frequent exchanges. Consultants in particular, emphasize the need to get set up a formal 'steering group' with representatives from social services, Municipal IT, and the IT Consultancy developing the software. Senior Bureaucrats are more prone to frame the matter in terms of having someone from their sections of financial aid working closely with the developers, without explicit mention of the municipal IT section, eventually tasked with maintaining the system. While parts of this difference can be ascribed to perspective, consultants are prone to frame matters in terms of an implementation project, which is what they partake in, while bureaucrats frame the matter more in terms of integrating the technology in the everyday activities on financial aid.

Coming back to the framing of need for building communicative bridges between the social services and the private consultancy, many informants to the study point out some need for the public sector actors in social services to develop their competencies on IT. Both operating within the new structure along with the RPA solution, and designing better procurements require a varying degree of understanding of IT. Accordingly, some interest in, and knowledge of, IT among at least some people inside the public sector operation in question seems like an important factor in finding ways to increase efficiency in utilizing AI. This framing, along with statements about how the initiative came from inside the organization and the need for an in-depth understanding of the process being automized makes yours truly identify senior bureaucrats as a key catalyst to implementing RPA in the public sector. Management literature has a tendency to be top-heavy in its focus. However, in this instance, it appears that managers on the 1st and 2nd level of Municipal Organization, working closely to the day-to-day activities, are important drivers of the successful implementation of RPA. Many informants point to individual leader(s) in the implementation process, working as proponents of change with realistic expectations of what the technology can do, and how it can be translated into the current practice. Having some of this understanding already in place likely helps with procurement in the early stages. Even if this competency is not present

beforehand, it seems like there is consensus in the informant's perception that a critical lesson from implementation is that it needs to be developed through close collaboration between stakeholders, beginning in the early stages of the process.

Further, most municipalities have IT competencies in-house already through their IT divisions, a resource that, at least according to private consultants' informants should be included earlier in the process. While these knowledge workers might focus more on system maintenance in their everyday than RPA and AI, the threshold for understanding is likely lower than for most actors in, say the social services. Further, they need to maintain the RPA solution at some point, making them important to include early either way.

While technological framings differ across groups of informants as accounted for in the analysis chapter, some aggregated lessons from the informant's experiences of implementing RPA in the process around financial aid seem to emerge. Automation as a means to substitute routine tasks and create more time for client interaction seems like a framing that allows for most stakeholders to buy-in. The main challenge facing the implementation process seems to be bridging gaps in communication and understanding between different groups of knowledge workers. Finding individuals that can mediate these gaps through knowledge of both areas or setting up a 'steering group' with all groups represented seems to help. Either way, all relevant stakeholders need to be identified and included early. It seems that Municipal IT is often the 'forgotten child' in this context, their exclusion in the design of this thesis being a case in point. Successful implementation seems to depend on buy-in from staff and understanding of how technology can enable something in the process, meaning that first or second level managers appears to important catalysts in a project like this. Finally, implementing RPA is framed as a tedious task that requires a clear idea of how it is supposed to help in everyday activities. Accordingly, one should stay away from 'technology for the sake of technology'-mindsets and instead try to define routine-based tasks in an everyday process that can be handled by a machine, freeing up humans to focus on other, more qualified tasks.

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Appendix 1. Interview Guide

1) Can you tell who you are, and what your role is in regards to the implementation of RPA in the processing of financial aid?
2) Did you work hands on with the practical implementation?
3) What is your overall view on the implementation of RPA in the processing of financial aid?
4) What potential benefits do you see with the introduction?
5) What challenges and issues do you see with the introduction?
6) Why do you think this introduction came about in your municipality?
7) What do you think RPA will mean to the public sector at large long term?

8) How do perceive the practical implementation of the RPA technology?
9) What challenges do you perceive from your perspective?
10) How did the collaboration work with your counter-parts in this project?
11) Has there been a political consensus on this project?
12) Do you think the introduction of RPA offer new demands on your organization?
13) What competencies are required?
14) What has it meant in terms of organization of work?
15) What lessons do you take away from this process?
16) Is there something you find important that we have not discussed yet in this interview?

Appendix 2. Interview Recordings
Recordings from the interviews available below:

https://drive.google.com/drive/folders/1vgbNE25RftOJxUXc2eTQvRjlOIBILabo?usp=sharing

Appendix 3. Table overviewing findings

	Politicians	Senior Bureaucrats	Street level bureaucrats	Private Sector Consultants
Explanation	Curiosity, and drive to improve. Necessity to increase efficiency.	Curiosity, and drive to improve. Especially by leaders in the organization.	Drive to improve, especially by leaders in the organization.	Curiosity and drive to improve, emphasis on local champion. Necessity to increase efficiency.
Benefits	More time for qualitative tasks as RPA replaces routine tasks. Standardization, results in more equal judgements.	More time for qualitative tasks as RPA replaces routine tasks. Standardization, results in more equal judgements.	More time for qualitative tasks as RPA replaces routine tasks. Big gain in *digitization*, moreso than introduction of *RPA*?	More time for qualitative tasks as RPA replaces routine tasks.
Challenges	Fear of change and substitution among staff.	Fear of change among staff in regards to new tasks.	Standardization of algorithm sometimes hard to translate into	Fear of worker substitution among staff.

		Standardization sometimes hard to translate into complex reality of cases. Communication between social workers and software engineers. Avoid over-reliance on technology.	complex reality of cases. Adapting to new tasks. Communication between social workers and software engineers.	Communication between social workers and software engineers. (Including with municipal IT.)
Implications for organization	Need for change management. Rudimentary understanding of new system.	Need for change management. Rudimentary knowledge of RPA and IT needed. Need to refresh social work dimension of job.	Reconfiguration of tasks, more interaction with clients. Ability to solve simple IT-related issues.	Need for change managers or "Champion". Cluster of competencies needed, combination of knowledge of financial aid, IT & RPA. Competence in designing procurement needed.

Collaboration between actors	No political quarrel. Initiative from bureaucratic level.	Good if time was set aside to work closely together and understand each other. Initiative from bureaucratic level.	Positive, yet challenges in communication with IT people that speak a "different language". Frequent meetings key in trying to combine skill sets.	Process is the key, not IT. Positive, if municipal IT is on board early. Sometimes issues in commun-ication between municipal IT and social services.
Take-aways	No need to fear technology, only changes what people do. Need for institutional routines for implementation.	Include staff early, communicate a clear *why*. Find "bridge" (a person?) between IT and social services languages. Process will and should take time.	No need to fear technology, only changes what we do.	Process key, not technology. Project co-ordination, involve IT, social services, and consultants early.