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TRANSLATING ROBOTIC PROCESS AUTOMATION IN SOCIAL WORK: ASPIRATIONAL CHANGES AND THE ROLE OF TECHNOLOGY

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Research paper

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Abstract

Automated decision-making using Robotic Process Automation (RPA) is increasingly found in public-supported social work. This study analyses two cases in which RPA was implemented and disseminated in social work in Sweden. The first case took place in a Swedish municipality; the second case took place in a project conducted by the Swedish national agency for municipalities. These cases involve translations of aspirational changes related to RPA in decisions on social assistance. The study uses Actor-Network Theory to highlight organizational areas and issues in social work that must be addressed when RPA is implemented and disseminated. The study's research questions are the following:

- What are the leading actors´ ideas about aspirational changes related to RPA in decisions on social assistance?
- What is the role of technology in this context?

The study revealed some similar aspirational changes in the two cases related to change management and maximization of services. Variations were found in other aspirational changes for RPA such as the issue of trust in applicants and the role of caseworkers. The study points to the need to increase applicants' use of, and facility with, information technology. The formulation of "a why" behind these changes is important for caseworkers' future role and use of discretion.

Keywords: Robotic Process Automation, Social work, Actor-Network Theory, Digital Divide.

1. Introduction

Which organizational areas in social work must be addressed in the implementation and dissemination processes that are influenced by Robotic Process Automation (RPA) in human services (Ballantyne, 2015)? Two British television series ("Little Britain" and "Black Mirror") and a British film (Ken Loach's "I, Daniel Blake") popularized this question in their depiction of the dismal consequences when people are required to interact with civil servants who use depersonalized and bureaucratic technology in decision-making.

Digitalization and the use of information technology (IT) in social work has a long history. Laurent (2008), who described the introduction of IT in Belgian social work, proposed the influence of two logics in this field: "the logic of computerization" and the "logic of social work". More recent studies have explored the technology-human dichotomy in detail. In their discussion of the use of IT in child welfare services, De Witte, Declercq, and Hermans (2016) defined "two worlds" in social work: the world of the database and the world of face-to-face interaction. In the former world, work is automated and rules-based; in the latter world, relational ways of working are preserved. Another theme in this discussion is the social workers´ experiences with and knowledge of technology in specific situations. For example, Goldkind, Wolf, and Jones (2016) addressed social workers' knowledge of and experience with IT in a study that describes the barriers and facilitators to its use.

IT may also feature in the actual *decision-making* in social work. Artificial Intelligence (AI), using predictive algorithms in analyses of administrative data, has been described as a promising way to support social work decision-making for children and families (Gillingham, 2019a). For example,

some decisions that caseworkers make that are related to social assistance (e.g., economic support for basic needs such as food and housing) might be automated using technology such as RPA that uses tools (e.g., macros and scripting) that offer fast functionality in an office environment. However, RPA, which may be described as "AI-Lite" because it lacks the ability to develop algorithms, is directed by a software programme (Wirtz, Weyerer, & Geyer, 2019). RPA was introduced in decision-making in social work in Sweden in 2017 in the Trelleborg Municipality. In a study of the use of RPA in the public sector in various European countries, Spielcamp (2019) references the Trelleborg Case as an innovative example of its use.

The various decisions taken by RPA or caseworkers in social services assistance likely differ depending on local design and conditions as well as legal requirements (Ranerup & Henriksen, 2019). Whatever the unique design, conditions, and legalities in a social services environment, a common debate among caseworkers regarding the use of RPA focuses on two concerns in particular: the concern that the role of client meetings may be diminished and the concern that attention to clients' individual needs may be minimized (Gustafsson & Wihlborg, 2019). At the heart of this debate is the issue of discretionary decision-making by caseworkers when automated decision-making is introduced (Petersen, Christensen, and Hildebrandt, 2020). Discretion in this context refers to the right of caseworkers to exercise a certain degree of independence (albeit based on applicable regulations and laws) when making social assistance decisions (Lipsky, 2010). Petersen et al. (2020) described the use of discretion in decision-making as a cooperative endeavour that is reliant on caseworkers' individual consultative skills. The problem with automated decision-making, however, is that for it to work, uniformity is necessary– even at the expense of discretionary evaluations of case-specific factors.

Approximately 16 municipalities in Sweden today have implemented RPA in the management of applications for social assistance. That number is expected to increase. As of October 15, 2019, 10 of the 16 municipalities have used RPA for six months or more (Svensson, 2019). In 2019, SALAR (the Swedish Association of Local Authorities and Regions) introduced a national RPA dissemination project (SALAR, 2018a; SALAR, 2018b; SALAR & PwC, 2018) that will continue some months into the year 2020.

This study focuses on the concept of *aspirational changes* in social assistance that underlies the implementation and dissemination of IT in general and RPA in particular. This concept, which reflects the thinking about the influence of new technology in the management of social work, is used in this study to describe the actors' processes of negotiation with others ("translation processes") as they attempt to influence others to commit to (i.e., enrol in) certain changes (Callon, 1986; Latour, 2005). These aspirational changes, which potentially will be *inscribed into* the new routines for case management of social assistance, might, for example, include technology use and activation plans (Andreassen, 2019). This is an area of some controversy as far as its legality, efficiency, and equity. Devlieghere, Bradt, and Roose (2017) emphasized the existence of multiple rationalities in IT that support, for example, uniformity, accountability, and/or access to service. Despite these well-meaning intentions, they found that electronic information systems do not always succeed in supporting responsive social work based on clients´ needs; in fact, they found that such systems tend more to support the interests and goals of the social services organizations. They concluded that technology should support rather than lead the processes for organizational change.

Gillingham (2019b) reached a similar conclusion in his "cautionary tale" about the mistakes and unintended consequences in the transition from bureaucracy to technocracy at a social welfare agency in Australia. According to Gillingham, the aspirations about new technologies held by groups, especially those groups with experience and a critical outlook, are important. Furthermore, actors (e.g., managers, frontline practitioners, and IT professionals) typically have different opinions on the aspirational changes in processes in which IT and other standardized technologies are used. These processes in social services reflect differences about the actors´ ideas about IT and differences in their negotiations with others. Previous studies of technology use in social work conclude that the general aim in IT governance should be to achieve and sustain good alignment between work practices and the use of IT (Lagsten & Andersson, 2018).

The aim of this study is to address a research knowledge gap in the use of IT in social services work (Lagsten & Andersson, 2018; Peláez, Garcia, & Aguilar-Tablada, 2018). In particular, we examine the nature of the aspirational changes (e.g., Devlieghere et al., 2017; Gillingham, 2019b) in the implementation and dissemination of RPA (Gustafsson & Wihlborg, 2019; Petersen et al., 2020; Ranerup & Henriksen, 2019). Because RPA is a relatively new technology, empirical studies of actors´ ideas and experiences related to its use are needed. Our study, which uses selected concepts from Actor-Network Theory (ANT) (Callon, 1986; Latour, 2005) to inform research about social work (cf. Ballantyne, 2015), derives its data from the implementation of RPA in Trelleborg, Sweden, and from a RPA dissemination project conducted by SALAR.

Our two research questions are the following:

- What are the leading actors´ ideas about aspirational changes related to RPA in decisions on social assistance?
- What is the role of technology in this context?

We next describe our study's analytical framework, context, and methodology. Thereafter we present the two empirical cases in which RPA was used in social work: The Trelleborg Case and the SALAR Case. We then present an analysis and comparison of the aspirational changes in the organization of this work based on these cases followed by our research conclusions.

2. Analytical framework, context, and methodology

2.1 Analytical framework

ANT is a theoretical framework that features humans and technological agency. It was introduced in the field of Science and Technology Studies during the 1980s (e.g., Callon, 1986). ANT has been used in various disciplines (Information Systems among others) and in studies of processes related to technology and social change. ANT has also been used as an alternative framework in studies of the broader concept of technology diffusion in which the emergent character of such processes and the active and changing role of humans and technology are examined (Holmström & Robey, 2005). Ballantyne (2015) recommended ANT as a useful framework for studies of Human Service Technologies because of its capability for focusing on innovation processes and the roles of human and technological actors.

ANT is based on a number of concepts (Cho, Mathiassen, & Nilsson, 2008). These concepts often relate to the so-called *translation processes* in which various human and technological networks and ideas about aspirational changes are negotiated and resolved (Callon, 1986; Latour, 2005). To reduce the complexity of our analytical focus, we use only some of the most central concepts of ANT. One fundamental ANT concept we use is *symmetry* that describes how the actors appear in the translation processes (Callon, 1986; Latour, 2005). In processes where actors are involved in negotiations, ANT emphasizes the importance of humans as well as non-humans ("artefacts") such as IT. Thus, we focus on the characteristics and role of IT as well as on the characteristics and role of the human actors.

Translation processes in ANT include negotiations when leading actors attempt to enrol other actors in (or to commit to) their ideas about aspirational changes or definitions of problems. These changes are potentially *inscribed* in the technologies and routines that are integral to the new situation (Latour, 2005) such as the case management of social assistance applications. In Callon's (1986) study – see above – the ecological researchers were involved in a translation process in which they tried to enrol other actors in their conservation strategy for the scallop population. That study concluded that the success of an effort to *enrol* other actors in support of aspirational changes depends on the persuasive ability or power of the leading actors behind the effort.

The standard approach to analyzing translation processes begins with the study of actors who are trying to enrol other actors in their aspirational changes. The process consists of the following steps: problematization, *interessement* (a term first used by Callon, 1986), enrolment, and mobilization (Ballantyne, 2015; Callon, 1986). Our study, which does not follow a continuous translation process of

these four steps, examines two sequential and related cases using selected ANT concepts (see Cho et al., 2008). The two cases are the following: (1) the Trelleborg Municipality's implementation of RPA in social work (Sweden's first instance of such an implementation); (2) the Swedish national dissemination project conducted by SALAR.

Another ANT concept is that researchers can choose their own level of analysis insofar as the fundamental rule of ANT – to "follow the actors" – is applied (Callon, 1986; Latour, 2005). Our primary focus, thus, is on the human actors at the Trelleborg Municipality and at the national organization (SALAR) with emphasis on their ideas about aspirational changes related to RPA. Our secondary focus is on the role of IT in this context.

In sum, our study uses ANT as a theoretical perspective for examination of the use of IT in social work. Previous research has taken alternative approaches. For example, Gillingham (2019b) applied the concept of perceived affordances of technology in a study of the implementation of IT at a social welfare agency. Other researchers have used ANT to study the roles of actors "in the making" of projects in the public sector (Cordella & Hesse, 2015; Heeks & Stanforth, 2007; Holmström & Robey, 2005). ANT might also be relevant in social work since it represents a renewal of this research field through the use of information systems theories (Ballantyne, 2015; Lagsten & Andersson, 2018). In contrast to the described theoretical alternatives (Gillingham, 2019b), ANT combines a qualified view of IT with an interest in linking people and technologies.

2.2 Context

In 2001, the Swedish Parliament passed the Social Services Act (Ministry of Health and Social Affairs, 2001) that regulates case management in social assistance. The fundamental principle underlying the Act (Chapter 1, §1) is that the social assistance should "strengthen economic and social safety, equal opportunities and active participation in society". Ideally, social assistance is a form of support that should be provided to each individual or family for only short periods of time. Equally important, social assistance should be provided when the more usual forms of economic support are unavailable or are too limited to meet people's needs. The social assistance applicant's obligations and rights are described as follows:

To be eligible to receive social assistance, people should do what they can to support themselves, including looking for work. [...] Social assistance is based on two norms: the assistance programme applies to the entire country (the national norm); reasonable compensation should be provided for costs for a number of other individual needs (National Swedish Board of Health and Welfare, 2013, p. 20; translated from Swedish).

An individual citizen can apply to a municipal agency for social assistance. Normally, these agencies are organized by Social Services Centers. The agencies provide social assistance combined with labour market assistance (through case management).

2.3 Methodology

This study is a qualitative, interpretative study (Walsham, 2006) that applies a few basic theoretical concepts from ANT (Ballantyne, 2015; Callon, 1986). The study consists of two cases that address aspirational changes associated with the use of RPA in social work. Data come from the Trelleborg Municipality that implemented RPA and from a large, national dissemination project related to RPA conducted by SALAR. Both cases address RPA and automated decision-making in social assistance. See Table 1.

The major data sources were the semi-structured qualitative interviews (40-60 minutes each) with leading actors in the Trelleborg Case and the SALAR Case. In the interviews, we asked respondents about the aims and the process of technology implementation for social assistance. The respondents from the Trelleborg Municipality described the use of IT in the e-applications submitted by clients (i.e., instructions and devices). The interviews were recorded and transcribed. We supplemented these

interviews with data from conference presentations, public documents, and newsletters. Triangulation of data was used to strengthen the validity of our findings.

Data source and event	Role in organization	Role in the process	Number of instances
The Trelleborg Case Interview	Managers and politicians working with issues related to social assistance	Drivers and implementers of change	13
Interview	Caseworkers in social assistance	Case management related to social assistance	4
Oral presentation	Managers working with issues related to social assistance	Drivers and implementers of change	2
Document	Internal and external documents about the change process associated with RPA	Communication of official policies, assessments, and change promotions	17
Document	Application, report and newsletter from the dissemination project conducted by the Municipality	Description of project intentions and evaluations	23
The SALAR Case Interview	Leading representatives from SALAR, project leaders, and consultants	Drivers and implementers of change	6
Oral presentation	Presentations of important aspects of RPA	Emphasis of important aspects of RPA	5
Document	Plans and descriptions from the dissemination project	Description of intentions	4

Table 1. The two cases: empirical data

2.4 Analysis

We began our analysis with a close reading of the interview transcripts, public documents, newsletters, and transcripts of conference presentations. We then re-read these data while taking a more deductive and process approach in which we referred to a few fundamental ANT concepts such as actors (human and technological) and aspirational changes ("inscriptions") (Ballantyne, 2015; Callon, 1986). Our aim in this step of the analysis was "to follow the actors" (Callon, 1986; Latour, 2005) as we tried to identify, compare, and summarize their ideas on the aspirational changes that might suggest potential activation programmes for the new case management procedures. For example, the actors discussed the need to structure and simplify ("streamline") the e-application process for social assistance. Based on this analysis, we described the RPA implementation and dissemination process and the actors' ideas on the aspirational changes. In the final step of our analysis, we drew conclusions based on the aspirational changes and the enrolment of actors in the e-application process and the use of technology in social assistance.

3. Two case studies

3.1 The Trelleborg Case: An implementation

3.1. 1 Background

Since the early 2010s, the Trelleborg Municipality has combined *labour market issues* and *self-support* in its case management for social assistance (Trelleborg, 2015). For an overview, see Ranerup and Henriksen (2019). All quotations below have been translated from Swedish. A politician explained:

> The basic principle is 85/15. This principle means that 85% of applicants for social assistance are unemployed. And 15% have other [more serious] problems. […]. This means that if we want to reduce costs for the Municipality, we must help people find employment. [Politician No. 2, Sept. 26, 2017)]

3.1.2 Activities and results

The Trelleborg Municipality is focused on *streamlining* the process of social assistance applications in its case management activities.

> [During the previous political majority] we started to think about how to make the Labour Market Board and its activities more efficient. This is a rather new idea that arose in 2010 [with] digitalization and all that. [Early in this process] we said that we should be among the fastest social assistance decision-makers in Sweden. [Politician No. 1, Sept. 25, 2017]

By 2014, a majority of the applicants for social assistance received decisions within one working day of their application. This timeframe contrasted with the previous eight workings days (Trelleborg, 2015). As part of the streamlining effort, *an e-application process was introduced* on September 1, 2015. As a result, the application process was changed so that applicants were no longer required to submit certain paper documents. In relation to this change, the issue of *trust in citizens* was emphasized.

> [Previously in the application review] you had to send in a lot of documents such as, for example, copies of statements of bank accounts […] Now we have to trust the applicants. We believe that people want to do their very best. [Politician No. 1, Sept. 25, 2017]

The effects of these changes were measured regularly (Trelleborg, 2015; Trelleborg, 2017b) as part of the change management analysis.

> The municipality council created goals that we must achieve, but EOR [Extra Ordinary Results] are something extra! […] For example, this may mean working with the "red" ones – that is, applicants who have needed social assistance for a long period of time. [Manager 1, Labour Market Agency, Oct. 17, 2018]

A very important goal of the change in the application process for social assistance was to provide the *best possible service to citizens.* One aspect of the new process was to offer applicants regular meetings with professionals to discuss employment possibilities and related support. The Municipality was also active in the national political arena with respect to its promotion of its new model for coordinating social assistance with a labour market focus (Trelleborg, 2015).

> As I see it, what is most important [rather than the RPA] is the support we offer. We provide a high-profile service. [Manager 1, Labour Market Agency, Oct. 17, 2018]

In 2016, the Trelleborg Municipality began to use RPA in certain administrative areas (e.g., applications for security alarms in elder care). In 2017, the Trelleborg Municipality introduced RPA in *case management of social assistance.* This assistance was described as "automation" in which "the robot" makes all or parts of a decision about social assistance (Trelleborg, 2017b, p. 3). Each individual RPA decision was based on the following factors: personal information submitted in the e-

application, an employment activation plan created by the applicant and a caseworker, and information about other social benefits generated by a national database.

RPA alone made the social assistance decision in approximately 41% of the applications and helped in an additional 30% of them. (Trelleborg, 2017b). In the latter cases, for example, casework assistance may have been required when the applicants' living costs were more complicated (e.g., overdue monthly rent problems rather than the current monthly rent problem).

After the Trelleborg RPA project received national attention, the Trelleborg Municipality welcomed many visitor-observers and also received funding for its activities that were organized as a more formal dissemination project. This project, which involved the Swedish Association of Local Authorities and Regions (acronym SALAR), aimed to test a *model for disseminating innovative forms of digitalization* and a new way of working with social assistance that was referred to as "The Trelleborg Model". One project goal was to "install a production process" (Trelleborg, 2016-2017, p. 2). The project began with four two-day meetings in which managers from 12 Swedish municipalities met with project leaders (at management level in the Labour Market Agency) from the Trelleborg Municipality.

> [The municipalities] want to work more with labour market issues because they have seen that the old social service approach doesn´t work. [Project Leader, SALAR, Nov. 29, 2017]

The project leaders and managers regarded digitalization as a complement to the other aspirational changes in their model. Initially, RPA was not part of the project although the municipalities' managers expressed significant interest in its use (Trelleborg, 2017a).

> We tell them about RPA since, by and large, this automation is about improving service for the inhabitants. [Manager 3, Labour Market Agency, Nov. 15, 2017]

In recent years, the Trelleborg Municipality has participated in several innovation competitions with a focus on digitalization and RPA (Trelleborg, 2017b). Although two upper-level Municipality managers resigned in October 2017, the work with the dissemination of RPA continued. A recent change reported by some leading actors in the Trelleborg Municipality was that RPA was used to support denial of claims decisions. Additional changes were reported in the e-application process.

> When applicants make new social assistance applications today, they must submit their apartment contract and a bank account statement […] [Also] we now have a digital service that supports appeals of negative decisions. [Manager 2, Labour Market Agency, Aug. 12, 2019]

In sum, the Trelleborg Case describes a long process in which leading actors introduced, among other things, the use of RPA, a focus on applicant self-support when social assistance is applied for, and e-applications. Today, approximately 75% of the applications in the Trelleborg Municipality are e-applications.

3.2 The SALAR Case: A dissemination project

3.2.1 Background

According to project leaders from SALAR, interest in RPA greatly increased among Swedish municipalities in 2017 and 2018.

> [A manager at SALAR] was asked many questions by our members. This was still early – Trelleborg had just launched its robot as it began to work with automation. [Project Leader No. 2, SALAR, Sept.16, 2019]

During these same years, SALAR reported that *automation* in municipal administration *saves time and labour* that could otherwise be used on activities with higher value (SALAR, 2018a). To stimulate development and exchange of experiences, SALAR initiated a national dissemination project aimed at *preparing for the implementation of RPA* (SALAR, 2018b; SALAR & PwC, 2018).

> SALAR now takes this initiative in promoting these changes. In the future, the professionals´ competences can be used to strengthen people's connections to the labour market […] rather than to calculate the benefit payments. [CEO of SALAR, Feb. 1, 2019]

3.2.2 Activities and results

After a procurement search, external consultants were employed to manage the necessary activities in the SALAR project (SALAR, 2018b). Their main task was the preparatory work for the use of RPA in applications for social assistance.

> The project was initiated by SALAR´s invitation to a public procurement process that was described as follows: "Qualified process support to enable automation in social assistance…" that would stimulate changes that would not have otherwise occurred. [Consultant 1, Sept. 26, 2019]
>
> I would add that this is not the easiest process to begin with as far as automation […] and it is not uncontroversial either. [Consultant 2, Sept. 26, 2019]

The municipalities that wanted to participate in the SALAR project had to *secure the approval of their leading actors.* The municipalities paid a fee to take part in the project. As explained by a project leader, local support for project participation is essential.

> The participating municipalities have a political decision to make when they decide about the implementation of automation. [Project Leader No. 1, SALAR, Sept. 16, 2019]

The most important activities in the SALAR project related to the change management involved in *preparing for the implementation of RPA*.

> There is the issue of whether SALAR wants the participating municipalities to implement the Trelleborg Model in the country as a whole. SALAR prefers that each municipality make its own decision […] Some municipalities want to work with labour market issues while others want to develop social work or to make more home visits. [Project Leader No. 2, SALAR, Sept. 16, 2019]

A manager working with digitalization at SALAR and several other interviewees emphasized the importance of *formulating relevant aims or "a why"* behind the implementation of RPA.

> We have said that it is up to the municipalities themselves to decide which problems they want to address [in the project] – the labour market issues, the social work issues, or something else. [Manager, SALAR, Sept 27, 2019]

This autonomy to make decisions influences which *aspects of the forthcoming use of RPA are to be measured*. One concern is the "why" of decisions when the goal is to provide the right help more quickly or to help people find employment.

> Much is said about the issue of "why" municipalities make their decisions [about implementing RPA]. They will have to return to that issue later in the process. [Consultant 1, Sept. 26, 2019]

The SALAR project had four phases or meetings depending on the method designed by the consultants. The four phases were as follows: 1) Introduction of RPA and planning. 2. Change management and the aspirational changes. 3. Systematic follow-up of activities and use of available resources in change management. 4: Finalization and measurement of results. The consultants were available as advisors between the meetings. (SALAR & PwC, 2018, p. 9).

According to the SALAR respondents, the main focus of the project was on *formulating and measuring the effects of the "why"* as well as *streamlining the application process* for social assistance. The streamlining emphasis involved the *introduction of e-applications* as a necessary precondition for automation. The automation as such was often described as the introduction of a "Digital co-worker". [In Swedish: *digital medarbetare or digital kollega*].

> We often use that concept [the concept of] RPA as a technology […] but there is a need for *digital Materia* [i.e., digital matter] to work with. Most of the municipalities must therefore begin by introducing e-applications. [Consultant 1, Sept. 26, 2019]

A project leader explained these various concepts. For example, Project Leader No. 1 described the use of "digital co-worker or colleague", "automation," and "robot":

> Yes, we use different concepts since this project is in its early phases. And SALAR lacks established concepts. But "digital co-worker" is also something that the unions have proposed. [Project Leader No. 1, SALAR, Sept. 16, 2019]

On November 7, 2018, speakers in a webinar used the concept of "automation in social assistance" when the SALAR project was presented. According to the SALAR project leaders, the external consultants, and the wording of the invitation-to-bid on the consulting services (SALAR, 2018b*), caseworkers should exert significant influence* in the different municipal projects. In the Spring of 2019, 12 municipalities participated in the project followed by an additional 12 municipalities in September of 2019. Throughout 2019 SALAR provided the municipalities with various written materials and recorded webinar lectures. SALAR worked specifically with the implementation of e-applications including certain legal issues, change management, the measurement of benefits and effects, and practical RPA experiences from the Nacka Municipality (SALAR, 2019).

In sum, leading actors at SALAR described the national case as a dissemination project intended to implement the use of e-applications for social assistance and to prepare for the introduction of RPA in the Swedish municipalities. A guiding principle was that the municipalities that participated in the project should formulate their own aspirational changes in terms of "the why" of their activities.

4. Analysis and discussion

4.1 A summary of aspirational changes and the role of technology

In the following analysis we summarize the aspirational changes and the important areas/issues in the implementation and dissemination of RPA. See Table 2.

Aspirational changes in the RPA implementation in the Trelleborg Municipality	***Aspirational changes in the dissemination project conducted by SALAR***
Change to a labour market perspective	Prepare the implementation of RPA
Formulate detailed goals and measure results	Formulate municipal goals and measure results
Streamline the application process	Streamline the application process
Introduce an e-application	Introduce an e-application
Maximize services to citizens	Maximize services to citizens
Implementation of RPA	Secure engagement from leading actors and secure the influence of caseworkers
Create trust in citizens who apply for social assistance	Support dissemination of RPA and the exchange of experiences
Support dissemination in the new ways of working	Disseminate RPA to minimize labour costs in administration

Table 2. The two cases: Aspirational changes related to the RPA implementation and dissemination

4.1.1 The application process aspirational changes

The *streamlining of the application process* was an important aspirational change in both the Trelleborg Case and the SALAR Case. This change, which was intended to provide better and faster

service to citizens, was seen as a necessary pre-condition for the introduction of *e-applications* and RPA in social assistance. Thus, it can be said that the e-application was a *decisive actor* in the social service processes when RPA was implemented. In addition, e-applications and RPA were designed such that they would evoke a significant degree of citizen trust as confirmed by the interview respondents in the Trelleborg Case although not by the interview respondents in the SALAR Case.

The aspirational change of *maximizing services to citizens* was also important in both cases. This change was a necessary pre-condition for the introduction of new types of assistance (including human assistance) related to, for example, a labour market perspective in the Trelleborg Case.

4.1.2 The change management process for aspirational changes

We found similarities and differences in the two cases related to their aspirational changes in the change management process in general. The main similarities were the *formulation of goals* and *the measurement of results.* It is logical that these changes were found in both cases since RPA must be disseminated (the SALAR Case) if it is to be implemented (the Trelleborg Case). The two cases differed, however, in notable instances. *Securing engagement from leading actors* and *influence from caseworkers* was an aspirational change in only the SALAR Case. These are changes we argue, of importance in all RPA disseminations. In the Trelleborg Case, which had existed for several years at the time of our study, these changes were no longer at the forefront of the respondents' attention. In addition, *the creation of trust in citizens* was an aspirational change only in the Trelleborg Case for the obvious reason that the caseworkers on the front line had direct contact with citizens.

4.1.3 "The why" behind the aspirational changes

Dissemination of RPA must be handled with consideration given to both practical issues (e.g., technological infrastructure change) and management issues (e.g., change management). The aspirational changes of *changing to a labour market perspective* and *supporting new ways of working* link to both issue sets. These aspirational changes are elements in a larger social service agenda in which the focus is on "activation work" (Andreassen, 2019). These aspirational changes were found specifically in the Trelleborg Case but only indirectly in the SALAR Case. In the latter case, *local formulations of "why"* RPA is implemented were encouraged. These formulations (i.e., reasons) for RPA implementation are assumed important in a social service setting that provides labour market assistance. As Andreassen's descriptions of activation work explain, such work requires motivating, compelling, and assisting citizens as they try to enter or re-enter the labour market.

However, the SALAR Case does address the "why" of RPA dissemination with its aspirational change of *minimizing administrative labour costs* at the municipal level. This is a level where costs are negotiated under intense constraints and pressure. Also, leading actors in the national case took a neutral position towards "the Trelleborg Model" and its labour market perspective. Abrahamson's (1996) discussion of how management fashion setters disseminate "management fashions" is relevant in this context because the Trelleborg Model became, in a certain sense, a management fashion when other Swedish municipalities adopted it (at least, in part) when SALAR promoted its dissemination. As noted above, the Trelleborg Municipality welcomed many visitor-observers who showed significant interest in the Trelleborg Model (Trelleborg, 2017a) when SALAR presented it and commented positively on the implementation project in 2017-2018 (Trelleborg, 2016-2017). The Model's activities were also positively acknowledged in innovation competitions in Europe (Spielcamp, 2019). The Trelleborg Municipality won several innovation awards for its Model.

According to the SALAR respondents, a national organization such as SALAR maintains some distance from the local authorities and regions it represents. These groups make autonomous decisions about their activities including their RPA activities. Yet this decision-making freedom is somewhat challenged by SALAR's aspirational change to encourage the minimization of administrative labour costs. We can see that the formulation of "the why" of an aspirational change at the general level concerns more than the measurement of the details of change management. In various ways, it is equally decisive for the future role of caseworkers.

4.1.4 RPA in social assistance

The use of RPA in social assistance was an important event in both cases although in different ways. The Trelleborg Case revealed that the implementation of RPA can be the result of a long process of change in the case management of social work. The SALAR Case revealed the important role a national organization has in RPA dissemination if supported by a main "why" (SALAR & PwC, 2018). At SALAR, the dissemination of RPA in the municipalities was part of a larger agenda of disseminating RPA throughout public administration in Sweden (SALAR, 2018a).

The actors' use of concepts linked to implementation and dissemination of RPA in the two cases differed. There were variations in the use of, for example, "Digital co-worker", "Automation in social assistance", and "robot". In both cases, however, RPA was viewed as a useful decision tool. In addition, SALAR viewed the use of RPA as potential *labour-saving source* in public administration (SALAR, 2018a).

However, in current debate and research (Gustafsson & Wihlborg, 2019) some commentators argue that the use of RPA poses a threat to the professionalism of caseworkers. The full automation of decision-making for social assistance claimants remains a controversial subject. While this subject is outside the scope of our study, we expect the debate will continue among professionals, practitioners, and researchers.

4.2 Concluding discussion

4.2.1 The study's three main conclusions

We draw three main conclusions from our study that used selected concepts from ANT. The first conclusion is that *all our defined types of aspirational changes must be addressed and inscribed into the new application process.* In our study, aspirational changes were associated with the implementation of a new social assistance application process, with change management issues, and with the formulation of a larger "why" behind the implementation and the dissemination of RPA. These aspirational changes might include the labour market perspective, the role of RPA, and the labour-saving goal of reducing administrative costs. For example, leading actors must select the aspirational changes and must debate, together with caseworkers, how the use of RPA can help achieve those changes.

The second conclusion is that *access to technology* (Ebbers, Jansen, & van Deursen, 2016) *must be handled actively as a part of dissemination projects that include RPA in applications for social assistance.* For the groups that have less access to information and communication technologies, it is essential to make the registration of information in applications for social assistance as easy and doable as possible (Ebbers, Jansen, & van Deursen, 2016). Popular culture has sympathetically portrayed the complexities of the digital age for these members of society (e.g., Ken Loach's film, "I, Daniel Blake"). However, many other groups are capable of using digital technology in their interaction with authorities and can benefit from the sharing of information (Zhu & Andersen, 2020). It is a somewhat surprising how effective technology is in the emancipation of such groups when they become technology users. The faster decision-making and the focus on the applicants´ self-support capability contribute to this emancipatory agenda (Zhu & Andersen, 2020). Admittedly, some critics see the focus on labour market issues and self-support as more consistent with a disciplinary agenda than with an emancipatory agenda (Umney, Greer, Onaran, & Symon, 2018).

The third conclusion is that the *two central groups of actors – the applicants and the caseworkers -- should be enrolled in* (i.e., committed to) the new e-application process and its case management process. The *formulation of a local "why" is critical when aspirational changes are proposed that require professional discretion* in RPA-assisted case management for social assistance. We are reminded that the general programme of efficiency and effectiveness – that is part of the RPA discourse (SALAR, 2018a) – also exists in social work. Therefore, the design of the technology must also be inscribed in the description of caseworkers´ aspirational digital discretion (Busch & Henriksen, 2018; Peterson et al., 2020). ANT reminds us that this design may be a continuing negotiation among

actors (Holmström & Robey, 2005) – in what has been described as "E-government in the making" (Cordella & Hesse, 2015).

4.2.2 Additional comments

RPA might be disseminated against a background of aspirational changes in public administration areas as well as in social work (SALAR, 2018a) even when local and national goals are not fully aligned. An example relates to the labour market issues in our study. In the Trelleborg Case, the aim was to help claimants gain employment and become self-supporting. In the SALAR Case, the aim was to reduce administrative costs (i.e., salaries and time spent) by substituting technology assistance for human assistance and for the formulation a local "why". Leading actors in the two cases agreed that streamlining the e-application process might help achieve both aims. What is essential is that the local "why" and the national "why" are clearly discussed and disseminated (Gustafsson & Wihlborg, 2019; Petersen et al., 2020) in all their details. At the national level, this necessity was evident in one of the aspirational changes in the SALAR Case: *secure the influence of caseworkers* (SALAR, 2018b).

It is worth re-emphasizing the main dissimilarity between the two cases. The Trelleborg Case took a practical perspective as the caseworkers dealt with the implementation of the changes in the case management process. The SALAR Case took a policy perspective and to some degree a practical perspective as the project leaders dealt with dissemination of the changes in the case management process. In addition, the studied activities in the SALAR Case took place after the Trelleborg Municipality had begun implementation of the aspirational changes. By this point in time, the Trelleborg Model had provoked considerable interest well as well as controversy.

One controversy focuses on the future role of social service caseworkers (Gustafsson & Wihlborg, 2019; Petersen et al., 2020) who are supposed to use their discretion in making social assistance decisions free of bias and personal preference (Lipsky, 2010; Tummers & Bekkers, 2014). The issue is whether rule-based decisions (facilitated by technology) are preferable to human, discretionary decision-making. A second controversy is whether the linkage of social service assistance to employment assistance is a positive step. A third controversy is the confusion in the use of concepts and terms about the technology that provides social services. Some concepts (e.g., automation and robotization) are technologically influenced; others (e.g., digital co-worker) reflect a more human perspective. A fourth controversy relates to the legality of transferring decision-rights on claimants' applications to technology (Henriksen, 2018).

Finally, differences exist in how social assistance decisions are communicated to applicants. In some instances, RPA automatically makes the positive or negative decision without input from a caseworker (Ranerup & Henriksen, 2019). In other instances, when there are complications, a caseworker is involved in the decision. Thus, some decisions are made according to standard rules without caseworker participation while others are made at the discretion of caseworkers. In addition, this process might or might not involve activities related to a labour market perspective and issues in activation work (Andreassen, 2019; Ranerup & Henriksen, 2019). Ultimately, the implementation process related to RPA, the discretion of caseworkers, and the enrolment of applicants must all be negotiated by the actors in a translation process when RPA is disseminated.

4.3 Contribution, limitations, and future research

Our use of the theoretical framework of ANT allows us to focus on aspirational changes expressed by leading human actors and reflected by the changing role of technology in social work (Ballantyne, 2015). In our study, while we emphasize that the use of IT in general and RPA in particular may feature in aspirational changes as important actors, these tools are only partially conclusive in decision-making. Aspirational changes such as streamlining of the applications and formulating local goals ("why" RPA is introduced), are equally important. Hence, we use ANT in our study to describe the aspirational changes in the implementation and dissemination of RPA when "technocracy" replaces "bureaucracy" (Gillingham, 2019b). As our study concludes, this transition should be a joint effort by human and technological actors (Ballantyne, 2015) that must be examined and monitored.

Our analysis reveals the areas that should be addressed as well as the details of how caseworkers and citizens should be enrolled as users of technology.

This study summarizes the two cases rather briefly and does not provide specific details on how RPA is designed, used, and evaluated. Much research is still needed on the use of RPA from both theoretical and practical perspectives. Our study contributes to the research on aspirational changes when IT is implemented in social work (see also Devlieghere et al., 2017; 2018; Gillingham, 2019b) with special reference to RPA research (Gustafsson & Wihlborg, 2019; Petersen et al., 2020; Ranerup & Henriksen, 2019). Our study increases our knowledge of the areas in the organization of social work that are influenced by the dissemination of technology. Thus, we advance research about IT in social work (Peláez, et al., 2018) based on the use of ANT from information systems research (Ballantyne, 2015; Lagsten & Andersson, 2018).

Our study is a qualitative analysis of similarities and differences in aspirational changes related to RPA in social work at the local and national levels. These changes express peoples´ perceptions (Gillingham, 2019b) of IT as an actor. Future research might make comparative studies of RPA in other public administrative settings as a way to highlight critical success factors for its implementation (Devlieghere et al., 2017). Future research might further examine the responses of citizens (see Andreassen, 2019) and of caseworkers (see Gustafsson & Wihlborg, 2019; Petersen et al., 2020) on the use of RPA in public administration of social services.

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