

The Double Darkness of Digitalization

Shaping Digital-ready Legislation to Reshape the Conditions for Public-sector Digitalization

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The double darkness of digitalization: Shaping digital-ready legislation to reshape the conditions for public-sector digitalization

Abstract

In recent years, policymakers have begun to problematize how legislation stands in the way of the digitalization of the public sector. We are witnessing the emergence of a new phenomenon, digital-ready legislation, which implies that, whenever possible, new legislation should build on simple rules and unambiguous terminology to reduce the need for professional (human) discretion and allow for the extended use of automated case processing in public-sector organizations. Digital-ready legislation has potentially wide-ranging consequences because it creates the conditions for how public organizations are digitalized. The processes, practices, choices, and responsibilities for drafting digital-ready legislation, however, are not well-described or debated. Digital-ready legislation is a dormant issue. This paper develops the notion of the "double darkness" of digitalization to account for this. Based on a qualitative study, the paper investigates how digital-ready legislation as a sociotechnical arrangement is shaped by policy tools and by a complex, collaborative process where responsibility for legislation is fragmented. It argues that although the policy tools are aimed at making actors responsible for digitalization and creating clarity about the process, actors seem to be reluctant to take on the responsibility for making political decisions related to digitalization.

Introduction

In the summer of 2018, the Danish Parliament passed a new bill on "Digital-ready legislation," a concept coined and developed by policymakers in the governmental Agency of Digitisation¹ (hereafter the Agency). Overall, the aim of digital-ready legislation is to push for a fundamental transformation of the public sector through digitalization. Digital-ready legislation implies, among other things, that whenever possible, legislation should build on simple rules and unambiguous terminology to reduce the need for professional (human) discretion, thereby allowing for the extended use of automated case processing across all types of public sector organizations and policy areas. The Agency states on its webpage, "The Danish welfare system is one of the best in the world; but as the public sector has developed, case processing has become increasingly complex. In the years to come, Denmark aims at simplifying legislation in order to promote automated digital case processing"². Denmark is a first mover in this area, but other countries are being inspired. In November 2020, the Agency announced that: "Several European countries and international institutions are increasingly looking to follow in the footsteps of Denmark when it comes to ensuring that legislation is digital-ready"³.

The phenomenon of digital-ready legislation has potentially wide-ranging consequences because it reshapes the conditions for how public organizations across sectors are digitalized. For instance, automated case-handling implies the reduction of professional discretion (Bovens and Zouridis 2002; Justesen and Plesner 2018) and the need for physical encounters between caseworkers and citizens (Lindgren, Madsen, Hoffmann and Melin 2019). Furthermore, simplifying legislation and

¹ We use the Agency's own spelling of its name, but our focus in the article is the broader "digitalization" – hence the differences in spelling.

² <u>https://en.digst.dk/policy-and-strategy/digital-ready-legislation/</u>, accessed 14.10.20.

³ <u>https://en.digst.dk/news/news-archive/2020/november/international-recognition-of-denmark-s-work-on-digital-ready-legislation/</u>, accessed 12.11.20.

drafting it to fit a binary logic to allow for more automation (see also Hildebrandt 2016) may clash with parliamentarians' intentions. However, despite its significance and potential consequences, digital-ready legislation has gone remarkably unnoticed in the public debate,⁴ making it appear to be what Moats and McFall (2018, 8) referred to as a "dormant issue." Except for some internal discussions in the central administration and among a few legal experts who have voiced concern, the processes, practices, and responsibilities for developing and drafting digital-ready legislation and the potentially far-reaching consequences are neither well-described nor debated.

Ideals of transparency and accountability are central to the Agency's digital-ready legislation ambition. Not only do they aim to make public administration more transparent by establishing more "objective" criteria through digital-ready legislation as the basis for automated decisionmaking. The Agency is also attempting to establish a transparent process with clear responsibilities when drafting digital-ready legislation. However, despite these ideals, important aspects of the phenomenon can be described as "immersed in darkness."

A steadily growing literature has pointed to different dark sides of digitalization, showing how digitalization affects individuals (Turkle 2011), organizations and professions (Foer 2017), entire industries (Taplin 2017), and societies (Morozov 2012), in highly problematic and ethically dubious manners. This literature has tended to focus on spectacular cases such as the firing of employees based on obscure algorithms (O'Neill 2017), how predictions generated on the basis of big data reproduce inequalities (Eubanks 2017), or how individuals are increasingly surveilled and

⁴ A search for the term digital-ready legislation in Danish media results in 305 mentions: 32 of occur in national newspapers, and the majority occur on the Agency's website or on the websites of interest organizations and trade magazines.

controlled in the workplace (Head 2014). Such studies resonate with a call for more knowledge of the dark sides of digitalization in organizations (Trittin, Scherer, Munro and Whelan 2021).

The work on the dark sides of digitalization points to darkness in a dual sense of the term. First, it has highlighted that important processes and technologies are obscure and thereby escape democratic scrutiny, accountability, and debates (Zuboff 2019) because, for instance, algorithms are inscrutable (Bernard 2018) or technological systems are black boxes (Pasquale 2016). Here, darkness refers to being out of sight and impenetrable. Second, the critical digitalization literature has discussed how digitalization may be dark in an ethical sense, implying that something is dubious from a democratic or ethical point of view (Zuboff 2019, Eubanks 2017, Morozov 2012). Digitalization potentially jeopardizes things that a democratic society values and cares about.

Based on these lines of thinking, we develop our notion of "double darkness". However, we argue that in the case of digital-ready legislation the double darkness should be understood in the light of the distributed nature of agency. Obscure processes and technical complexities cannot be resolved by opening black boxes (Bucher 2018, Amoore 2020). By contrast, darkness is a fundamental condition of digitalization phenomena, and the distributed nature of decision-making in the drafting of digital-ready legislation implies that it cannot be "opened" and fully understood. The darkness related to normative implications is not necessarily intentional or a matter of disregard for ethical or democratic standards. By contrast, even when actors strive for clarity and transparency, darkness is inextricably intertwined with light (Birchall 2015; Flyverbom, Leonardi, Stohl and Stohl 2016). As is the case with the first type of darkness, darkness in the normative sense may result from the distributed agency of actors involved in digital-ready legislation. When agency is distributed, it is

difficult to hold actors accountable for decisions that are political and have wide-reaching consequences, and important debates are absent.

In this paper, we have a distinct focus on distributed agency and unobtrusiveness. Digital-ready legislation is a much more mundane and less spectacular digitalization case than the types highlighted by the critical digitalization literature. At first sight, digital-ready legislation may seem to be an unexciting technical–administrative phenomenon. However, as pointed out by scholars who have studied seemingly mundane, highly technical, and presumably boring details of, for example, auditing (Power 1999), administrative law (Latour 2010), or waste management (Woolgar and Neyland 2013), such practices are powerful partly because they are perceived as merely technical and boring. They are powerful because they are elements in infrastructures that shape organizations in ways that have a significant influence on key organizational actors and mechanisms (Pellandini-Simányi and Vargha 2019). Often, unobtrusive and seemingly neutral policy tools play a major role in these shaping processes (Lascoumes and Le Gales 2007).

The paper aims to show how the seemingly merely technical–administrative shaping of digitalization through legislation takes place in practice. We present an empirical study of digital-ready legislation "in the making" on the basis of documents and interviews with actors directly involved in developing digital-ready legislation. Inspired by Science and Technology Studies (STS), we highlight how digital-ready legislation is shaped in practice by policy tools and new collaborative and distributed processes around legislation, and we inquire into how responsibility for digital-ready legislation becomes fragmented at the same time as accountability is being installed in the policy process.

The study of digital-ready legislation contributes to STS scholarship on how new technological phenomena become intertwined with politics and society. The emergent phenomenon of digital-ready legislation is a highly illustrative case of how digitalization and legislation together reshape the conditions of operation for public organizations. Furthermore, it contributes to critical studies on digitalization by bringing attention to the dark sides of the digitalization of mundane, administrative practices that tend to escape both scholarly and public attention—in contrast to spectacular cases often brought forward by the critical literature.

Digitalization of public sector organizations and the role of policy

tools

Digitalization can be defined as "the ways in which social life is organized through and around digital technologies" (Leonardi and Treem 2020, 2). In the public sector, important conditions for digitalization and thus the "social life" or daily practices of public organizations are shaped through political decisions and legislation. In that sense, public sector organizations "are 'wired' differently" than private sector organizations (Bejerot and Hasselbladh 2013, 1358). Many political decisions regarding the modus operandi of the public sector are reflected in reforms with ambitions that cut across different sectors, often with the aim of enhancing efficiency, improving quality, and increasing the transparency of their operations and decisions.

A current reform trend is referred to as digital era governance (DEG) (Dunleavy, Margetts, Bastow and Tinkler 2006), where the ambition is to embrace digital solutions as a core part of all public administration (Ejersbo and Greve 2017). With such ambitions, digitalization is no longer only a question of implementing digital technologies but also encompasses a set of managerial and governmental ideas centered on the aim of transforming the public sector and its services (Plesner, Justesen and Glerup 2018). Public sector digitalization is shaped by political choices, different policy instruments, tools, and techniques (Lascoumes and Le Gales 2007), as well as a comprehensive set of programmatic reform ideals. In that sense, the technological and programmatic aspects are intertwined (Power 1999).

Some scholars have demonstrated that important policy decisions are made by what Ustek-Spilda (2020) refers to as "back-office policy-makers." In her study, she showed how statisticians shape policy through methodological decisions and negotiations on data when they translate abstract standards to local practices. Other researchers have pointed to the role of policy tools in the shaping of public sector infrastructures. Lascoumes and Le Gales (2007, 10) argue that "instruments at work are not purely technical: they produce specific effects, independently of their stated objectives ...". The policy tools developed in the context of digital-ready legislation are part of the infrastructuring (Bowker and Star 1999) of the digitalization of public organizations. Because the tools shape how policy decisions are made, they can, themselves, be considered political.

In STS-inspired studies, the concept of "tools" has been central in analyses of, for instance, markets (Gond and Brès 2020), finance (Beunza and Stark 2004), or the public sector (Lascoumes and Le Gales 2007). STS scholars have pointed out that a built-in rationality in many policy tools is to increase accountability and transparency (e.g., Shore and Wright 2000) and that these tools have multiple dimensions and rarely work straightforwardly in the intended ways (Neyland 2007; Strathern 2000; Woolgar and Neyland 2013). Furthermore, transparency and accountability tools have performative effects (e.g., Scott and Orlikowski 2012; Winthereik et al. 2007) in the sense that they contribute to shaping the reality they are supposed to account for. Although the tools may be designed to include a focus on making organizational phenomena transparent through the production of accounts, there is also a dimension of making actors accountable in a more moral

7

sense of the term, where accountability means taking responsibility. In this manner, some tools involve a certain type of interpellation, where an individual is called upon to provide an account, which again makes holding an individual accountable for his or her actions possible (Roberts 2009).

With inspiration from the organizational transparency literature, we expect tools designed to increase clarity in digital-ready legislation to produce darkness, too. It has been pointed out that the digital age raises new questions about transparency. For instance, the literature points to phenomena such as algorithmic obscurity (Brice 2017), the opacity produced by complex computational systems (Ananny and Crawford 2018), or the need for discussing transparency in relation to algorithmic governance (Zarsky 2016) but also problematizes naïve ideals about a direct relationship between increased transparency and increased democracy (Neyland 2007), and it develops the standpoint that transparency is not a technical aspect of digital technologies but a thoroughly political and organizational phenomenon (Birchall 2015; Flyverbom, Leonardi, Stohl and Stohl 2016). This scholarship demonstrates that transparency is inevitably intertwined with opacity—or light with darkness.

To study how policy tools are used to further digital-ready legislation and hence reshape the conditions for digitalization in the public sector, and to understand the co-presence of transparency ambitions and darkness, we base our methodology on STS sensibilities regarding agency.

The Shaping of socio-technical arrangements and the distribution of agency

From an STS point of view, agency is relational and distributed (Latour 1987). This implies that complex socio-technological arrangements come into being as a result of many different (human and non-human) agencies and that their functioning also depends on the many different agencies that come into play in their context of operation (Callon 2004). Digital-ready legislation can be considered a socio-technological arrangement in that sense. The practices, choices, and policy tools that bring digital-ready legislation into being are not contained within nicely delineated sites or produced by actors who are easy to identify and hold accountable; by contrast, they are distributed across many sites and among many different actors.

An STS-inspired approach implies an analytical focus on the situated practices where particular socio-technological arrangements come into being. In the words of John Law (2008, 632), this implies that

"...instead of asking why things happen, it asks how they occur. How they arrange themselves. How the materials of the world (social, technical, documentary, natural, human, animal) get themselves done in particular locations for a moment in all their heterogeneity. And how they go on shifting and relating themselves in the process that enact realities, knowledges and all the rest"

Methodologically, this requires a commitment to tracing different agencies across different sites and to identifying the relationships between them. We focus analytically on how digital-ready legislation is shaped locally, specifically, and contingently (Woolgar et al. 2009) by particular actors and policy tools, to reflect on mundane practices that create particular conditions for the digitalization of public organizations.

Methods

Our empirical material was gathered during two rounds: from May 2017 to March 2018 and from May to June 2019. In the first round, digital-ready legislation had not yet been implemented in the Danish public sector, but policymakers were in the process of formulating the idea. In June 2018, the Danish Parliament passed a bill on digital-ready legislation; thus, in the second round of data collection, the requirements the bill stipulated had been a reality for almost one year. This timespan in our data collection provides a unique opportunity to follow digital-ready legislation while it was in the making. Although the digitalization agenda in Denmark is advanced, knowledge about foundational aspects of the digitalization of public organizations through legislation will become increasingly relevant in other national contexts as other countries are inspired by the initiatives. As Hildebrandt noticed in 2018 (1), "legislation may at some point be written in a way that is conducive to algorithmic application," a projection that is currently realized in Denmark and will probably spread.

The first part of the data stems from an explorative interview study with 38 public managers from different public organizations in Denmark. Based on the assumption that DEG changes public sector organizations in similar ways across different sectors (Dunleavy et al. 2006; Plesner et al. 2018), we conducted interviews in different public organizations in Denmark (e.g., state departments, state agencies, municipal agencies, police departments, the defense department, tax authorities). We thematically coded the entire interview material and found that many interviewees addressed the issue of how legislation conditions digitalization in the public sector. We also encountered the term "digital-ready legislation" for the first time and decided to further pursue this topic. We were intrigued by its apparent potential for transforming public organizations

significantly and its absence in the public debate. Even as researchers with an interest in public sector digitalization, it had escaped our attention.

Based on the thematic coding, we established a new dataset within the overall empirical material that comprised 12 interviews with managers from the state administration, all of whom had emphasized the connection between legislation and digitalization goals. Three of the interviews were with managers from the Agency and nine were with individuals from other organizations. We promised the participants anonymity, but they all represent different ministries and government agencies across policy areas. This selection of interviewees implies that we only focus on the executive level of the legislative process.

We supplemented these interviews with a second round of data collection to further explore the phenomenon of digital-ready legislation in a more focused manner. First, we collected documents related to digital-ready legislation, assuming that texts can be important policy tools. For instance, they can forge relations between various practices, ignite new activities, and become building blocks of new social realities (Jensen and Lauritsen 2004). In policy work generally and in the work with digital-ready legislation specifically, examples of significant texts are strategy documents, guidelines, memos, and the legal documents themselves. To remain on the overall level of describing the processes of shaping digital-ready legislation, we focused on strategy documents and guidelines.

Second, to gain a better understanding of the practical work of developing digital-ready legislation, we initiated a new round of interviews, this time purposely sampling interviewees from different types of organizations involved in collaborations on digital-ready legislation. Complex phenomena

formed in several locations demand methods that consider their complexity and distributed nature. In STS, this point has been taken up in attempts to develop methods for studying the shaping of technologies across multiple sites (Hyysalo et al. 2019). With the same intention, we used a snowball method, actively asking to be connected to individuals who had different experiences with digital-ready legislation. In this second round, we conducted interviews with seven persons: a legal expert from the Agency, a representative of the attorney general, a legal expert from a think tank, a data scientist who had been involved in experimenting with advanced mathematical modeling as input to the legislative work, a manager in a software development company delivering solutions to the public sector, a manager in an organization heavily influenced by digitization-ready legislation, and a member of the municipalities' interest organization involved in policy formulation. This time, the interviews were semi-structured, and focused on the theme of digital-ready legislation.

The sample of twelve interviews from the first round, seven interviews from the second round, and all the official documents on digital-ready legislation constitute the empirical material of our study. All interviews lasted approximately one hour and were recorded and transcribed. Systematically reading the material, we focused on identifying (1) the tools involved in shaping digital-ready legislation, including the transparency and accountability ideals inscribed in the tools, and (2) the distributed agency and collaboration required to draft digital-ready legislation, according to the involved actors. We structured the analysis around these two themes.

Adapting legislation to the digital age

The Agency of Digitization was founded in 2011 under the auspices of the Ministry of Finance. From the beginning, their ambition was to establish policies and infrastructures that would enable an all-encompassing digitalization of the public administration in Denmark (Schou and Hjelholt 2018). In the early days, the Agency envisioned and facilitated various basic infrastructure projects such as the establishment of digital communication between public institutions and citizens. Recently, however, the Agency took its digitalization efforts one step further. A key aim is now to explore how it can support the automation of administrative case processing in public sector organizations across different sectors.

In this process, the Agency became increasingly aware that legislative details may hinder the automation of administrative work. They note, for example, in a strategy document that, "in some areas, legislation is an obstacle to full utilisation of digital possibilities" (Agency for Digitisation 2018a). According to the Agency, rules and regulations tend to be highly complex, they use too vague or ambiguous terminology, and there is often confusion over which guidelines and laws to apply in specific cases. The Agency states: "Complex legislation with several exceptions, vague terms or many procedural requirements may prevent an efficient and digital public administration"⁵. Here, present regulation is portrayed as obscure, and digitalization becomes an occasion to create more clarity.

As part of their external communication on their webpage, the Agency offers an example of their meaning of simple and digital-ready legislation, as opposed to non-digitizable legislation: "the possibility to utilise automated case processing and digitisation varies from legislation to legislation. For instance, the Danish pension system is relatively easy to IT-support, whereas legislation concerning social work implies case processing based on professional estimates and discretion"⁶. In the case of the administration of pension allocation and payments, the law is based on so-called "objective" criteria and relies on existing data accessible by the authorities (e.g., age,

⁵ <u>https://en.digst.dk/policy-and-strategy/digital-ready-legislation/</u>, accessed 14.10.20
⁶ <u>https://en.digst.dk/policy-and-strategy/digitisation-ready-legislation/digitisation-ready-legislation-examples/</u>

citizenship, country of residence): "Since these criteria are based on objective terms, and information about citizens' fulfilment of these criteria can be accessed through the Danish Central Person Registry, the case processing can be automated to a high degree" (ibid). Hence, a main purpose of vetting new and existing laws is to reduce the need for applications, physical encounters, and professional discretion, as has been the case with pension allocation and payments.

This view that the legislation and the terminology applied in a legislative text could be a barrier to digitalization was clarified in an interview with an Agency manager when the concept was being developed by the Agency policymakers, before the political agreement on digital-ready legislation was established:

"Well, it's pretty obvious for people working in this area [digitalization] that unless you begin to tinker with legislation, you can only get so far, because there's a number of legal restraints in relation to digitalization. So, if you really want to make radical changes and digitalize, you need to look into the legislation at the same time, so you can adjust what you want technologically and what is legally possible"

This quote makes it clear that digitalization of the public sector, understood as "radical changes," requires that legislation be reconsidered and adjusted in a way that aligns it upfront with technological possibilities. The subsequent political agreement on digital-ready legislation was the result of precisely such reflections and alignment ambitions. As stated in the strategy document referred to above, "Legislation and regulations should be *adapted to the digital age*" (ibid., emphasis added). Ensuring clarity in terminology and transparent criteria in the legislation are part of this ambition.

A technical issue versus a collaborative challenge

Generally, the documents describing digital-ready legislation have a neutral tone and employ relatively technical language. In the strategy document, the Agency defines digital-ready legislation as a legislative practice that

- 1) enables digital support or automation of administrative procedures
- 2) establishes the framework for cohesive digitalization across authorities
- 3) does not prevent authorities from developing public services using new technology (ibid.).

Again, the Agency portrays legislation as a potential barrier to technological progress in the public sector, such as the automation of administrative procedures, but they also present legislation as an enabler that may support digitalization if it is designed as "digital-ready." For this reason, the Agency considered it essential that the various Danish ministries assume responsibility for considering digitalization when drafting new legislation.

To further this agenda, the Agency developed a set of policy tools to ensure a systematized, transparent process that would push the ministries to "adapt their legislation to the digital age" and, at the same time, hold them accountable for their contribution to the digitalization agenda when they draft digital-ready legislation. The policy tools include a detailed set of inspirational guidelines, which describe an ideal process for assessing whether a new bill is digital-ready. The guidelines include seven principles that ministries must consider when drafting a bill such that (1) the bill's rules and terminology must be simple and clear and that the bill (2) it must allow for digital communication with citizens, (3) the bill should provide the possibility of exploring

complete or partial automation of administrative tasks, (4) the bill should be based on uniform concepts and shared public data as much as possible, (5) it must ensure data security, (6) should be based on existing public IT infrastructure, and (7) the bill should ensure that effective digital control is possible (ibid.). The principles are interrelated. For instance, the requirement that automation possibilities should be explored (point 3) depends on rules being simple and clear (point 1) and the terminology uniform (point 4), because automation can only be based on a binary logic that presupposes such simplicity.

Another specific tool was the inclusion of a new mandatory paragraph in the formal template ministries are required to use when drafting new legislation. One Agency manager recounted persuading the Ministry of Justice to add this paragraph, implying that the ministries are now obliged to formally account for the public implementation impacts of their bills, including how bills follow the principles of digital-ready legislation. Finally, the Agency established a control function to following up on "whether public implementation impacts are properly described in new legislation as well as evaluate whether digitisation has been fully considered in the creation of a new bill" (Agency for Digitisation 2020).

Taken together, the guidelines, the mandatory paragraph, and the control function are policy tools designed to establish a standardized, transparent process with clear responsibilities and accountabilities, thereby pushing for digital-ready legislation that will not hinder more far-reaching digitalization of the public sector that would benefit citizens either directly by providing better service or indirectly by saving resources—in different policy areas. The ministries are called upon to take on this responsibility, follow the procedures, and *account* for it in the mandatory paragraph.

In that way, the policy tools can both be seen as part of an attempt to make actors accountable and as part of an attempt to make the process of digital-ready legislation transparent.

Fragmented responsibility for digital-ready legislation

To ensure that the aforementioned aims of the policy are realized, legal experts in the ministries are called upon to take on new types of task and responsibilities and to join forces with experts from other parts of the public administration as well as IT experts when drafting new legislation that must be digital-ready. The novelty of this need is reflected in the wording in a publication from the Agency, where they note that the work with digital-ready legislation demands new attitudes from the involved actors:

"...the transformation to a more digitized public Denmark demands innovative thinking, dialogue and courage [...], it requires less squeamishness about new collaborations" (Agency for Digitisation 2018b)

However, rather than being a joint endeavor, decision-making has become distributed such that it fragments and pushes responsibilities around. It becomes unclear—and to some extent obscure—how, where, and why particular ideas regarding digitalization are generated and realized in practice.

Distributed idea generation

Ministries are formally required to account for the digitalization consequences of a bill in the mandatory paragraph, but this reveals little about how substantial formulations with potentially specific and real implications for practice are made. The process requires idea generation that turns abstract ideals of digital-ready legislation into specific proposals in policy-specific areas, with the

intention of shaping not only digital-ready legislation but also how the public sector becomes digitalized in practice.

The Agency plays an important role but is not the only point of origin for new ideas regarding, for example, what to automate, which data sources to use, or how to use emerging digital technologies. Another site of idea generation is an annual meeting that convenes permanent secretaries from different ministries to prepare and discuss the plan for new bills for the upcoming year. The Agency's top manager participates in the meeting to provide input and screen bills with possible digitalization implications. Only approximately half of the bills are deemed relevant in the selection process, and the selection criteria are far from clear-cut. An Agency manager explained how this screening for relevance is the beginning of a dialogue with the involved ministries:

"Well, we try to screen them [proposals for new bills] and say, 'Okay, well, there could be something here.' And then we say to the relevant ministries, 'We would like to look more into that' or 'There could be some implementation consequences that we would like to look into".

The quote indicates that the tools installed through mandatory paragraphs and standardized procedures only shape digital-ready legislation on a general level. The next step always requires a dialogue with the ministries whose bills are considered to have the potential for supporting digitalization, as well as with other actors. Ideas must be developed and specified when exploring where legislation and digitalization can be aligned in new ways, and according to the Agency manager, these more specific ideas may stem from a variety of places:

18

"... it varies how the process of drafting new legislation begins ... Sometimes it's, 'Well, we need to do something in this area.' And maybe somebody has written a report, some consultants have produced something and say 'Well, there might be something here.' Or maybe someone gets the idea that [...] 'Hey, maybe we can use this data instead of asking citizens for documentation"

The quote epitomizes the difficulty of pointing to one type of actor or one site where ideas are generated: "sometimes," "something," "somebody," "some," and "someone" are indicative of the undefined nature of the process of generating ideas for how legislation can be drafted in a manner that makes it digital-ready. While legal experts in both the Agency and the different ministries are sometimes sources of ideas, solutions to how a given administrative area can be digitalized may also be from a completely different professional group more concerned about technological considerations than legal concerns. A mathematician who participated in the development of digital solutions in a particular policy area explained in an interview how the political ideals—to be expressed in the bill—had to be held up against what is doable in relation to data and mathematical modeling:

"...we told [the representative of the political system] how we would approach it and which options we could see. And then he said, 'I would like something like this. What do you think about that?' And then it went back and forth until we sort of said, 'Well, okay, do we agree that we do something like this, and then evaluate, and we look at it again in ten days?' And then we had meetings back and forth [...] where we delivered the data and the results we had obtained since the previous meetings and helped interpret what we were looking at"

The interviewee describes an agile process where mathematicians experiment with advanced models that could support the digitalization of complex administrative processes in a given policy area. Because it makes a difference, for instance, how proxies are chosen or which data is used in such models, the choices must be explained to and negotiated with policymakers throughout the development phase. This description of the dispersed process of idea generation illustrates a part of the complexity of connecting the (politically) desired goal and the (technically) doable solution in practice and indicates that decisions may be made in everyday negotiations where pragmatic solutions are made by a few actors, out of sight of politicians', the Agency's, and the public's view.

Collaboration among reluctant back-office policymakers

In practice, many different actors often have to be involved to ensure that a specific piece of legislation is digital-ready. As an Agency manager explained during the first round of interviews,

"It is impossible to draft legislation without any technical knowledge, and it is also a bad idea to create digital solutions without taking the legal side into account – so digital-ready legislation demands new cross-disciplinary collaborations as a basis for policy-making."

However, although collaboration between different actors (the Agency, ministries, and other parts of the public sector, as well as between different professionals) occurs, a consequence of the crossdisciplinarity required seems to be that no actors take responsibility or feel accountable for the final shaping of digital-ready legislation and its consequences. For instance, the ministries' legal experts who draft the bills should consider whether they rely on simple rules and standardized terminology. If they do not, this hinders automated casework because binary logics form the basis of programming, a condition for automating technologies. According to an Agency manager, however, the obligation to consider digitalization potentials is not prioritized. She suggested that legal experts do not feel responsible for considering digitalization:

"I'm not sure, but I think many people had the perception that 'this has nothing to do with me' [...] Typically, the people drafting legislation will say to me, 'Well, I don't know about the consequences in the municipalities.' And then I say, 'But why don't you talk to someone who does?' I see a tendency to not really do anything, to not really be observant, to not talk to anybody, or to not look into it"

From the Agency manager's point of view, reaching out to other actors to collaborate about digitalready legislation seems obvious, but she observed that actors are more narrowly focused on their traditional tasks. A legal expert and advisor from a private company whose role it is to facilitate digital-ready legislation by connecting the technical and the legal aspects has an additional explanation of the difficulties of collaboration, pointing to various practical concerns that hinder the consideration of digitalization:

"The ministry's legal experts are constantly busy. They need to meet their deadlines. Their legislative machinery is running: You need to announce the bill before the summer, then you need to bring it up in Parliament in the Fall, then it needs to be passed. It is a relentlessly turning wheel [...] so they are constantly stressed and try to keep extra issues at a distance. It's a filter you need to get past. [...] They would prefer to keep the existing law as it is, of course, because they need to argue for any changes. So, they always pose a lot of questions: 'Why is this necessary at all?', 'Can't we just hold on to how we normally do this?', and so on''

In this legal expert's view, daily routines and deadlines become an obstacle to actors' engagement in making digital-ready legislation work. Adding to the complexity, workable solutions also depend on IT developers' input on the redesign of work processes to allow for automation. Their main responsibility is to develop smooth-running systems, and they rarely feel responsible for the other aspects of legislative work. The same legal expert and advisor described it as follows:

"...in the IT-development camp, there is an endless identification of problems. The whole point is to decompose problems. Sometimes it is really expensive to solve problems because laws are complicated, so [IT developers] will be inclined to say, 'Can't we just change the law a bit, it simply can't be true that this law is so complicated'".

The IT developers push to streamline categories and processes, for example, because their success criterium is an IT solution that runs smoothly. They have little knowledge of and often seem to have no interest in the rationales behind the complexity of the law, but they still contribute in practice to making legislation digital-ready in ways that have consequences for the public administration, the professionals who work in these organizations, and the citizens who encounter them. There is no indication that IT developers want to design solutions with far-reaching political and normative consequences, but it does not seem to be a matter of concern that their solutions may have such consequences once implemented.

Establishing the alignment that cross-disciplinary collaborations are supposed to create is easier said than done. The underlying ideals behind digital-ready legislation imply that all the different

actors involved take a rational, technical approach in shaping it. The ideals also presuppose clarity among actors about who has responsibility for what, which does not seem achievable when idea generation, agency, and responsibilities are *distributed* as described. For instance, commenting on a large-scale, highly complicated IT system that produced legally incorrect outcomes, the same legal expert and advisor says,

"I don't think the people who designed [the digital solution] wanted it to be an illegal system. I think they thought 'but I was sure someone had that under control. I thought the suppliers had that under control. I thought my legal department had that under control".

Sometimes responsibility is pushed around as it is indicated here, where it is unclear who makes the decisions, which reshape the administration, and unclear who can be made to assume responsibility. At other times, political decisions are pushed over to IT developers and mathematicians, and they play a significant, though unobtrusive and possibly undecided, role in the legislative process.

Delegation of decision-making to technical experts

The technically advanced nature of IT developers' and mathematicians' contributions complicates the process because it is sometimes difficult to align with the Agency's ideals of clarity and transparency. IT developers and mathematicians are involved in developing the mathematical models and principles for IT infrastructures that inform the formulation of the bills. The mathematician we quoted explained that the responsibility for formulating legal details is sometimes forced onto IT developers, who may produce solutions that are obscure to legal experts and other actors involved in the process: "The problem is that [legal experts] simply have no idea about what happens inside these mathematical models. Full stop. So, when they demand that a model be transparent [...], there is no chance that a legal expert understands the underlying math. It won't happen, not in a year, not in 10 years, not in 100 years [...] Of course, you can try to account for certain aspects, but it's hard"

The impenetrability of the technical aspect of digitalization makes the described collaboration requirement for digital-ready legislation even more difficult. This contributes to pushing around responsibility and accountability in relation to a given solution. A legal expert explained how the obscurity of the technical aspects may result in solutions that no one feels responsible for:

"Well, then the IT developers generate 500 PowerPoint slides and leave them with the legal expert, asking 'Do you see any problems here? – Please let me know if you have any objections within a week.' And then the legal expert responds, 'Listen, my friend, we've looked into this, and we have the following provisos,' and produces a long list of provisos. Then the IT developers bring the whole thing to the manager and say 'Well, this is our material; we've gone through it all, and we believe it's a good solution. This is what we would like to do, and we have run it past the legal experts. They think it looks good; they had some provisos, but we've tried to handle them as well as we could'"

The problem described in this interview excerpt is that a manager of a project involving legislative and IT elements has both little legal and little IT expertise but needs to make a decision regardless, and this decision potentially has far-reaching consequences for the digitalization of the public administration. Again, it is difficult to assess who should be held accountable for the decision and its consequences if changes in administrative processes are based on IT solutions in conflict with legal or ethical issues. A legal expert at a think tank problematizes the unnoticed role of IT developers: "I don't think the processual aspects are given enough attention. I don't think there's enough debate about it. Who is supposed to decide this? Because right now, the IT people have a lot of power"

This absence of debate on the process of drafting digital-ready legislation holds true for more than the unnoticed role of IT developers. Other redistributions of responsibilities in the complex process of drafting digital-ready legislation also go largely unnoticed in both the public and political debate. This is problematized by, for instance, the mathematician quoted above, who points out how politicians make complicated decisions and push the responsibility for implementation to IT developers. He describes how politicians insist that, even if their political ideas seem difficult to implement and digitalize, they insist on entrusting the technical-legislative complex with a solution. The mathematician mockingly describes how it has more value for a politician to say, "*of course*, this is doable – we're *sure* it's doable; we have *tons* of smart people who can figure this out," rather than considering administrative or technical barriers.

According to this interviewee, the politicians brush aside responsibility for the solution, despite being otherwise responsible for the laws. Moreover, what is overlooked is that the technicians are then actually making political decisions, for instance, in a system design phase, particular proxies are chosen and inform automated case processing. In this regard, the legal expert from the think tank points out: "[I]n relation to the process [of making bills digital-ready], we need to talk about who decides what. I think these discussions should take place in parliament, based on a broad public debate." Notably,

her critical perspective resonates with the Agency's emphasis on the need for political debate, when they write that "it requires courage to develop less bureaucratic digitalready legislation, as well as the will to debate this transformation politically" (Agency for Digitisation 2018b).

As shown here, holding actors accountable for developing digital-ready legislation is difficult. Our analysis also indicates that the distribution and fragmentation of responsibility obscures important parts of the legislative process, leaving them covered in darkness in the double sense of the term. It is out of sight not because somebody is trying to hide something but because it is difficult to understand and there seems to be little agreement on where and by whom decisive choices are made. The process thus becomes dark in the second sense because it is ethically problematic that important decisions that shape legislation, and thereby public sector organizations, are sometimes made by technicians for technical reasons.

The double darkness of digital-ready legislation

This paper aimed to explore digital-ready legislation in the making as an emerging phenomenon with potentially wide-ranging consequences for public sector digitalization. Our analysis established that although an underlying goal of digital-ready legislation is clarity and transparency, important processes, choices, and technological solutions connected to digital-ready legislation are out of sight and impenetrable. However, our analysis indicates that this is not a result of ill will. We observe no evidence of things being purposely hidden or democratic processes being shortcut deliberately, as the critical literature has tended to emphasize when pointing to the dark sides of digitalization (e.g., Zuboff 2019). By contrast, our analysis suggests that the Agency and other actors involved in digital-ready legislation strive to support efficiency, accountability, and transparency, which are key public sector values (du Gay 2000).

This tension between transparency and darkness resonates with research on digitalization, showing how the digitalization of organizations has paradoxical potential (e.g., Beyes and Pias, 2018). On the one hand, digitalization may transform the organization into an "all-illuminated space" (Zuboff 1988) by casting light on otherwise hidden organizational aspects. On the other hand, digitalization immerses other organizational aspects in darkness because of the impenetrability of the algorithms that make digital technologies function (Eubanks 2017; Zuboff 2019).

Our analysis suggests that digital-ready legislation is out of sight for two main reasons. First, the processes and decisions connected to making legislation digital-ready legislation are distributed among a number of different actors (e.g., the Agency, the ministries, technical professionals) who are expected to collaborate, think innovatively together, and take both individual and joint responsibility for making new legislation digital-ready, to pave the way for an even more digitalized public sector in Denmark. A number of policy tools have been installed to further this collaborative process and ensure transparency, accountability, and responsibility among the involved actors. As we would expect from the literature, policy tools aimed at ensuring transparency and accountability have various and often unexpected effects (Neyland 2007, Strathern 2000)—and sometimes no effect. Our analysis indicates that despite the implemented policy tools, the actors involved are not eager to take on this responsibility; instead, they count on others to devise ideas and make decisions that shape the specific drafting of legislation. Thus, even if the shaping of digital-ready legislation is political and the involved actors are what Ustek-Spelda (2020) called "back-office policymakers,"

they are reluctant policymakers who operate in a space that is dark not only to outsiders but also to themselves.

Responsibility becomes not only distributed but also fragmented in this process. The complexity of the policy-making processes and the range of actors involved in digital-ready legislation seems to be a central reason why important processes and decisions are immersed in darkness.

Second, our analysis also shows that important aspects of digital-ready legislation are immersed in darkness because of the technical obscurity of the mathematical and programming work related to digital-ready legislation. However, whereas some would criticize algorithmic obscurity itself and argue for the need to open the technical black boxes (Pasquale 2015), a question can be whether this is a solution to a transparency problem (Bucher 2018; Amoore 2020). Although technical obscurity is an issue related to digital-ready legislation, there are two reasons why shedding light on the technical itself may not be a solution: One is that the functioning of mathematical models can be obscure even to the mathematicians developing them. Another is that the technical obscurity is interwoven with processual obscurity. These observations imply that the important issue is to understand how the involved actors understand their roles and responsibilities in the process of developing digital-ready legislation. In relation to that, it may also be beneficial to debate the limits of their abilities for making decisions that they can be held accountable for.

Digital-ready legislation also raises questions on transparency and the dark sides of digitalization in the normative sense. When digitalization is shaped in non-transparent ways, it becomes difficult to identify whom to hold accountable for the choices made. This raises normative questions because digital-ready legislation has real consequences for the encounter between the public administration and citizens with potential implications for public services and citizens' rights. It can be argued that this ought to be an issue of public and political debate. However, the issue is largely dormant (Moats and McFall 2018). However, our analysis again suggests that there is no ill will or antidemocratic intentions that can explain this dormancy. Instead, it is probably linked to the techno-administrative and mundane character of the issue (e.g., Woolgar and Neyland 2013).

Herein lies the double darkness. Digital-ready legislation becomes simultaneously impenetrable even to the involved actors and democratically dubious because a wide-ranging reshaping of the public sector is occurring without much public debate and deliberation. However, we are not naively suggesting that light as such is the solution to the double darkness of digitalization, because that would reiterate the illusion, criticized by STS scholars, that if only information is made available and transparent, increased democracy will follow (Neyland 2007, 503). Specific tools always render certain things visible and leave others out of sight. Along these lines, it can be argued that holding individuals accountable for all their choices in drafting bills in complex, interdisciplinary settings is not only unrealistic but also a way to drown in control initiatives.

If the solution to the double darkness of digital-ready legislation is not solely light, one possible goal is to articulate and accept the political nature of the processes, tools, and technical decisions related to this phenomenon. This resonates with the suggestion to "politicize transparency" (Birchall 2015) and could spark political debates on the changes that follow when the public sector is reshaped through digital-ready legislation. In this connection, it is vital to understand the distributed nature of agency, because this is an important aspect of the double darkness of digitalization.

Conclusion

This paper has examined the emergence of digital-ready legislation, a phenomenon with the potential for reshaping the conditions for the digitalization of the public sector in Denmark across different types of organizations and policy areas. Digital-ready legislation paves the way for extended automation of case processing in the public administration, with significant consequences both for employees whose ways of working will change and for the citizens who encounter the administration.

Our study contributes to critical research on digitalization and organizations, as well as to STS. First, the paper has provided insights into digital-ready legislation as a new socio-technical arrangement in the making. By paying attention to policy tools and legislation, our study has shown mundane processes that reshape the conditions for digitalization in a current public sector context. In this way, the article makes an empirical contribution to the burgeoning literature, which focuses on the importance of law in organizations (Pelladini-Simányi and Vargha 2019). Second, using the double darkness as an analytical lens on digital-ready legislation leads us to rethink the problem of digitalization differently than other contributions on the dark sides of digitalization (e.g., Zuboff 2019; O'Neill 2017). In our case, darkness is not about overarching systems of exploitation or the intentions of surveillance and control. Digital-ready legislation is a much more mundane phenomenon where policy tools are deployed with the explicit aim of making processes transparent and increasing accountability. Our study has shown that agency is distributed, responsibilities are taken reluctantly, and decisions are made more randomly. This implies that knowing whom to hold accountable for the changes that may follow from digital-ready legislation is difficult. However, the fragmented responsibility and the reluctance to acknowledge the political nature of decisions about digitalization in connection with legislation are in contrast to the importance of the decisions made for the future of the public administration.

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