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Benefits slippage: The yearlong process of implementing electronic document management in a Danish municipality

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Keywords: Benefits realization Benefits management Electronic document management E-government Local government Government institutions invest substantial resources in digitalizing their processes and services. To benefit from these investments, the expected benefits must be specified and systematically pursued. Otherwise, they will likely slip. Benefits slippage is the situation where specified benefits do not materialize even though they continue to be seen as, at least partially, realizable. This study investigates benefits slippage in the implementation of electronic document management in a municipality in Denmark. On the basis of interviews, we identify three reasons why benefits slipped. First, inactionable benefits specifications make it difficult to see the link between the specified benefits and the work-process changes necessary to realize them, thereby leaving staff without directions about what changes to implement. Second, a prolonged realization process increases the opportunity for external events to disrupt the process, thereby shifting attention to other matters before the benefits have been realized. Third, absent benefits follow-up leaves the status of benefits realization uncertain or ignores indications that benefits have not been realized, thereby prolonging or discontinuing the realization process. In the studied municipality, the specified benefits had slipped for three years. Future research should investigate how benefits realization initiatives can be resumed late, locally, and at low cost.

1. Introduction

Government institutions see a large potential in digitalization and invest substantial resources in becoming more digitalized (e.g., Andersson et al., 2022; Fleron et al., 2022; Hujran et al., 2023; Levesque et al., 2024; Lindgren et al., 2019; Weerakkody et al., 2011). Denmark, the country in which this study is situated, is a case in point. It is one of the most digitalized countries in the world according to the E-Government Development Index (UN, 2024). Yet, digitalization is a means, not an end. To achieve beneficial ends, they must be specified and systematically pursued in development projects and during the succeeding implementation (Hesselmann & Kunal, 2014; Holgeid et al., 2022; Simonsen & Hertzum, 2022; Ward & Daniel, 2012). This study investigates a case in which benefits slipped. The aim of the study is to improve our understanding of the conditions necessary to realize benefits.

The problem of implementing change is often neglected in research on information systems in favor of a narrower focus on project management (Dwivedi et al., 2015). Research on benefits realization aims to remedy this imbalance. However, previous research on benefits realization has mainly addressed how a focus on benefits is or can be incorporated in the stages leading up to and including go-live (e.g., Aubry et al., 2021; Semmann & Böhmann, 2015; Ward & Daniel, 2012; Williams et al., 2020). These stages are important because they prepare and frame the subsequent implementation efforts, but they must be followed by an equally strong focus on the implementation stages during which digitalization enters use, staff adopts new ways of working, and government – hopefully – reaps the benefits of the digitalization. Neglecting the implementation stages amounts to presuming that if the benefits are well specified and the digitalization well designed, then implementation will ensue. The many failed and troubled e-government projects (Kempeneer & Heylen, 2023; Rajala & Aaltonen, 2021; Yang & Rho, 2007) show the limitations of this presumption and the need for benefits-realization studies during implementation and postimplementation.

The studied case is about the introduction of electronic document management (EDM) in a Danish municipality. Document management is a key administrative task in municipalities; streamlining it will potentially benefit all the municipal activities that have document management as a component. This prospect motivated the municipality to

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replace its EDM system with a newer and more sophisticated one. Because the municipal budget is tight, a central benefit pursued with the investment in the new EDM system is operational savings. Such savings do not come about until the municipality has used the system for some time and the staff has learned and gained routine in work practices that utilize its facilities. To allow this process to take place, we investigate the implementation of the EDM system three years after go-live. That is, we are analyzing benefits realization at the post-implementation stage. We ask the research question: *How has the municipality approached benefits realization for the EDM system and why have the pursued benefits not been realized to a larger extent*?

In answering this research question, we contribute the notion of benefits slippage and an illustrative case. We define *benefits slippage* as the situation where specified benefits do not materialize even though they continue to be seen as, at least partially, realizable. Slipped benefits are missed opportunities. The problem is neither absent specification, nor unrealizable targets. Rather, the problem pertains to the implementation process, which in the studied municipality went on for several years without producing the benefits. In the following, we review related work on benefits realization in e-government, account for our interview-based method, report the results of our empirical work, and discuss why benefits slip.

2. Background

There is much belief in digitalization. At the same time, there are many failed implementations and much uncertainty about which steps to follow to derive benefit from digitalization.

2.1. Potential benefits of e-government

In the latest edition of its e-government survey, the United Nations states that "Digitalizing public institutions and services has never been more urgent" (UN, 2024). The urgency is fueled by the crises related to the unsustainability of humanity's current production and consumption practices and by a strong belief that digitalization can accelerate the progress toward tackling these crises and meeting the sustainable development goals (SDGs). Because this study is about a project in local government, it is noteworthy that the United Nations emphasizes the importance of digitalization at this level of government:

"At the local level, digital government can significantly impact people's daily lives through the provision of accessible, efficient and transparent services. Local government is often the first point of contact between citizens and public services. By leveraging digital tools, local authorities can improve services delivery, enhance citizen engagement, and promote inclusive development, directly contributing to the realization of the SDGs."

(UN, 2024)

Similarly high hopes are expressed by Hujran et al. (2023), who expect that with novel technologies e-government will modernize the public sector, transform government-citizen relationships, strengthen citizen engagement in the democratic process, allow decisions to become more data-driven, provide more agile government structures, streamline information flows, create substantial public value, enable government to provide integrated services, and generally improve the quality of life.

The benefits that have been realized and documented are, in general, more modest. On the basis of a systematic review, Haug et al. (2024) conclude that benefits from e-government are incremental and "in the making" rather than transformational and already a reality. They divide the benefits into four outcome groups. First, *benefits in information and service delivery* include government websites that provide easier access to more information (Das et al., 2017) and government social-media presence that facilitates new forms of interaction between government organizations and their stakeholders (Epstein, 2022). Second, *benefits*

within the public organization include increased efficiency because the individual employee saves time (Åkesson & Edvardsson, 2008) and improved information sharing because e-government has been combined with procedural changes (Juell-Skielse et al., 2017). Third, *benefits in the relationship with stakeholders* include that citizens who use e-government services find that they add value in terms of convenience, flexibility, and process simplification (Buyannemekh et al., 2024). However, studies also find that services for digital communication between citizens and government are considered a service degradation for a sizable minority of citizens (Berger et al., 2016). Fourth, *benefits to society* include reduced corruption as a result of increased transparency (Banerjee et al., 2020), but there are also concerns about the digital divide produced by unequal access to e-government (Botric & Bozic, 2021).

While the benefits listed above are realized in some e-government projects, other projects are complete or partial failures (Anthopoulos et al., 2016; Choi & Chandler, 2020; Kempeneer & Heylen, 2023; Nyansiro et al., 2021; Yang & Rho, 2007). As a result, the efficiency of egovernment services differs substantially from one location to another. For example, Zhu et al. (2024) find large differences among Chinese cities: Cities in the eastern region have the highest e-government efficiency, cities in the middle and western regions an intermediate efficiency, and cities in the northeastern region the lowest e-government efficiency. In addition, many e-government projects are not evaluated and it, thus, remains unclear whether or not they deliver the benefits set forth in their business case (Irani et al., 2008). This underscores the strong need for a systematic approach to benefits realization.

2.2. Benefits realization

By emphasizing benefits realization, a fourth quality criterion is added to digitalization projects. They should not only meet budget, schedule, and scope criteria but also deliver the benefits that were the rationale for initiating the projects. The Project Management Institute defines a benefit as "a gain realized by the organization and beneficiaries through portfolio, program, or project outputs and resulting outcomes" (PMI, 2019). To work systematically toward benefits realization, several process models have been introduced (e.g., Ashurst et al., 2008; Love & Matthews, 2019; Simonsen & Hertzum, 2022; Ward & Daniel, 2012). They are essentially variations over the Cranfield benefits-management model (Ward et al., 1996), which stipulates an iterative process in five steps: (1) identifying and structuring benefits, (2) planning benefits realization, (3) executing the benefits realization plan, (4) evaluating and reviewing results, and (5) potential for further benefits. These steps seek to ensure that benefits are specified early on, pursued throughout the project, and regularly evaluated to assess the progress toward their realization.

A challenging feature of benefits management is that it spans both technical and organizational development. To realize benefits, systems with beneficial facilities must be developed, or configured, and work processes must be changed to exploit these facilities. However, this double change process causes frequent problems because those responsible for technical development are typically not responsible for organizational implementation, and vice versa (Markus, 2004). For example, Warth and Dyb (2019) quote an information technology (IT) project manager in healthcare for saying: "It is a success because we have turned it on (...). We have prepared it so that those who want to use it can do so. But it is up to the clinics themselves to start using it." In such cases, benefits that could be obtained with the introduced technology may not be pursued by the users and are, therefore, at risk of slipping. This risk shows that to be effective, benefits management must continue after go-live and may be most important at the post-implementation stage (Simonsen & Hertzum, 2022). However, previous research finds that organizations tend not to have a sustained focus on benefits realization, see Table 1.

Several studies find that even if projects set out with a focus on

Table 1

Reference	Method	Domain	Main contribution
Ashurst et al. (2008)	Interviews and document analysis	Government and industry	Finds little evidence of benefits-realization processes being consistently or comprehensively adopted Effective benefits realization requires a sustained focus on the benefits, rather than the technology
Aubry et al. (2021)	Interviews	Government, healthcare, and industry	Even if projects set out with a focus on benefits realization, this focus fades away when the projects progress At the post-project stage, projects are merely evaluated on whether they meet time, budget, and
Holgeid et al. (2022)	Interviews, document analysis, and survey	Government	Scope criteria Many benefits are weakly specified and lack information about how to measure and follow up on them Benefits are more likely to be realized when they are specific and measurable and a benefits owner has been assigned
Love and Matthews (2019)	Interviews and document analysis	Industry	Enablers of effective benefit realization include a Plan-Do-Check-Act process and continuous staff training Digitalization that is incongruous with established work practices is a barrier to benefits realization
Pereira et al. (2021)	Literature review	Government, healthcare, and industry	Identifies enablers of effective benefits realization, including clearly defined benefits and a clear distribution of responsibilities Identifies barriers to benefits realization, including lack of a benefits-driven culture and lack of resources to evaluate benefits Finds three main benefits- realization frameworks
Semmann and Böhmann (2015)	Interviews	Industry	Even if projects set out with a focus on benefits realization, this focus fades away when the projects progress Any post-project evaluation seems to be directed at future projects rather than at realizing additional benefit from the present project
Simonsen and Hertzum (2022)	Action research	Government and healthcare	Presents a benefits- realization model for use during post- implementation Benefits-realization efforts may reopen a window of opportunity or hundle an

Reference	Method	Domain	Main contribution
			For benefits to be realized, they must be perceived as meaningful by local actors
Ward and Daniel (2012)	Textbook	_	Presents a comprehensive model for working toward benefits realization during the project stages leading up to go-live
Ward et al. (1996)	Survey	Industry	Finds that few organizations have a comprehensive benefits- realization process Presents the Cranfield benefits-management model
Williams et al. (2020)	Interviews	Government	Finds a strong focus on benefits identification at the business-case stage, followed by a deterioration in benefits focus as projects progress Emphasizes leadership buy-in, a benefits-driven culture, and transparent reporting as important to effective benefits- realization frameworks

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benefits realization, this focus often fades away when the projects progress (Aubry et al., 2021; Holgeid et al., 2022; Semmann & Böhmann, 2015; Williams et al., 2020). To build a business case and obtain approval, many projects initially engage in an open and inclusive identification of potential benefits. However, already at the pre-project stage this focus starts to change. Aubry et al. (2021) identify three stages in this change: (1) at the pre-project stage, the open focus changes into a focus on measurable benefits. (2) after projects have started, it changes into a "sales rhetoric" about what the project will deliver, and (3) at the post-project stage, it changes into an evaluation of whether the project met its time, budget, and scope criteria. That is, projects are ultimately evaluated on the three conventional project-management criteria, not on whether benefits are realized. Williams et al. (2020) note that a reason for reverting to the conventional project-management criteria is that they relate directly to the project, whereas benefits often are somewhat removed from the project because they also depend on other factors. In addition, benefits may be subject to optimism bias and gaming, which are the unintentional, respectively intentional, overestimation of benefits and underestimation of costs at the outset of projects (Flyvbjerg & Gardner, 2023). While optimism bias and gaming may help win approval for the project, they increase the risk of subsequently being unable to realize the stated benefits.

If benefits are often specified to obtain approval for projects, it is not surprising that major barriers to benefits realization relate to lacking the necessary mindset (Pereira et al., 2021; Williams et al., 2020): lack of a benefits-driven culture, lack of senior management buy-in, and so forth. In addition to these lacks, Pereira et al. (2021) report several barriers that relate to tensions between benefits and other considerations. including an exclusive focus on project deliverables, staff preferring their current ways of working, and conflicts among different stakeholder interests. As an overall explanation for the barriers, Choi and Chandler (2020) propose the concept of a knowledge vacuum. While e-government innovation pushes public institutions toward ways of working that require new competences, organizational inertia hampers learning. When innovations impose a need for learning that exceeds the staffs capacity and motivation, they become frustrated and pull back from the learning required to benefit from e-government innovations, thereby creating a gridlock. To undo this gridlock, public institutions must resist the temptation to introduce e-government innovations prematurely and

existing system with new

goals

cultivate benefits-realization enablers. These enablers include the reversal of the barriers (e.g., the presence of a benefits-driven culture) but also clear responsibilities for benefits realization and tailoring benefits-realization practices to the specific project (Pereira et al., 2021).

To summarize, a systematic approach to benefits realization involves working iteratively with the specification, realization, and evaluation of benefits (Simonsen & Hertzum, 2022). First, benefits specification serves to identify improvement opportunities that are sufficiently important to be worth pursuing. Second, benefits realization consists of making interventions to change the current situation into one where the specified benefits are attained. Third, benefits evaluation is necessary to establish whether the interventions are effective and to set off the next iteration when they are not.

3. Method

We conducted an interpretive case study in one municipality (Walsham, 1995; Yin, 2018). The study was approved by the municipality, which granted us permission to interview employees and observe EDM-related workshops. All interviewees and workshop participants gave their oral informed consent to take part in the study.

3.1. Setting

In Denmark, the digitalization of the public sector started in the late 1950s and has since then been regarded as an important means of lowering costs and increasing efficiency (Frøkjær & Korsbæk, 1992). EDM has been central to realizing these benefits because document management is a task that involves a sizable number of people and hours. In 1978, it was estimated that central government could save 20-30 % of these hours by digitalizing document management (Hertzum, 1995). While systems were introduced, the savings did not materialize. Rather, Hertzum (1995) concluded that "it takes an extraordinary effort to achieve the benefits, and few institutions are forced to pursue them." Later initiatives to digitalize the public sector have seen more success (Fleron et al., 2022). A series of national egovernment strategies have set the course for a digitalization that permeates local, regional, and central government. These strategies couple the ambition of more effective governance with an image of citizens wishing more efficient government services (Schou & Hjelholt, 2019). Several initiatives have had a slow (e.g., Berger & Hertzum, 2014) or troubled (e.g., Hertzum et al., 2022) start and some have failed completely (e.g., Rigsrevisionen, 2013). However, the overall course toward more digitalization has prevailed.

At the local-government level, Denmark consists of 98 municipalities with a large area of responsibility. The responsibilities are financed through taxes and include childcare, education, emergency services, environmental protection services, healthcare, public transport, social services, urban planning, business services, libraries, and other cultural services. EDM systems are central to the administration of these activities. The studied municipality had about 50,000 citizens and recently replaced its EDM system. The new system was an off-the-shelf system with functionality for case workers to archive documents, manage tasks, search for cases, and integrate with text processing and mail clients. In addition, project employees could access EDM facilities directly from their text processing system, and managers got tools for report generation, workflow analysis, and decision support. After signing the contract with the vendor, the municipality spent about 18 months configuring the system and preparing its introduction. The present study was conducted three years after the municipality in 2021 started to use its new EDM system.

3.2. Procedure

To become sensitized to the EDM implementation and municipality,

the study started with observation of two workshops. The workshops were organized by the municipality to specify benefits that could potentially be realized in its different units by making better use of the EDM system and related technologies. Each workshop lasted 5 hours and had 35–40 participants. During the workshops, the participants, in groups, identified cumbersome workflows and then formulated ideas for benefits that would resolve these workflow issues. The issues and ideas were noted on paper cards, along with information about what it would take to realize the benefit, and subsequently discussed in plenum. The first and second authors observed the workshops for the economy unit and the unit of planning, building, and environment. At the end of the workshops, we listened in on the participants' naturalistic discussions and, thereby, bolstered the ecological validity of our study. In addition, the workshops were an opportunity to set up interviews.

The main data for this study were interviews with eleven municipal employees, see Table 2. Four interviewees were from the unit of IT and digitalization, including the current project manager of the EDM project. The remaining interviewees were three from the economy unit, three from the unit of planning, building, and environment, and the chief administrative officer in the municipality. Apart from this spread in organizational units, the interviewees were a convenience sample. However, they varied in role, years of work experience, and gender. This variation strengthened the internal validity of the study.

The interviews were semi-structured (Kvale & Brinkmann, 2009). They revolved around themes that were initiated by questions prepared ahead of the interviews but depended on follow-up questions for exploring the themes, gaining depth, understanding details, and pursuing examples. All interviewees were initially asked briefly to describe their background and work tasks. Then, they were asked about the EDM system: What did they use it for? How did it affect their work? Had they experienced problems in using it? How had they handled these problems? What were the factors most important to successful use of the EDM system in the municipality? Next, the interviewees were asked about benefits realization: What benefits have been pursued with the EDM system? How has the municipality worked to realize these benefits? To what extent have they been realized? How will the use of the EDM system evolve in the future? Finally, the interviewees were asked a few

Table	2
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Interviewee	Role	Organizational unit	Years of work experience in the public sector	Gender
#01	IT director	IT and digitalization	25	Female
#02	EDM project manager	IT and digitalization	2–3	Female
#03	Project manager	IT and digitalization	14	Female
#04	Team coordinator	IT and digitalization	25	Female
#05	Financial director	Economy	35	Male
#06	Unit manager	Economy	5	Male
#07	Employee	Economy	8	Female
#08	Unit manager	Planning, building, and environment	20	Male
#09	Employee	Planning, building, and environment	-	Female
#10	Employee	Planning, building, and environment	4	Female
#11	Chief administrative officer	Municipality	24	Male

questions about how management informed them about digitalization initiatives, such as the introduction of the EDM system, and how it involved them in these initiatives.

The interviews lasted about an hour and were conducted by the first and second authors in the weeks following the workshops (February and March 2024). The interviews were audio-recorded, auto-transcribed, and then manually inspected to correct errors in the automatic transcription.

3.3. Data analysis

We adopted an interpretive approach in our data analysis (Walsham, 1995). To become sensitized to the contents of the interviews, we started the analysis by reading and discussing the transcripts in an exploratory manner. This initial discussion confirmed that the interviews provided crosscutting insights about benefits realization from the interviewees' different points of view. We then reread the transcripts and coded all passages of relevance to our focus on benefits realization with short descriptive phrases. The codes were generated in a ground-up manner and consisted of phrases copied from the interviews mixed with labels describing the interview contents. For example, one code consisted of the label "Useful functionality still unused". In total, 143 different codes were applied one or several times. This open coding produced meaningbearing phrases that captured the details in the interviews but not their interrelations.

Following Braun and Clarke (2012), the next step in the analysis was to identify relations among the codes and to group them into themes of interrelated content. We did two rounds of grouping. The first round merged the codes into concepts that were mentioned in multiple places in the interviews. For example, the code "Unable to show benefit" was merged with ten other codes to produce the concept "Benefits have not been realized". Fourteen codes fell outside the concepts and were dropped from the analysis because they ceased to appear relevant. In the second round, we grouped the concepts into themes. We arrived at nine themes that comprise our analysis of the interviews. The final step in the coding consisted of arranging the themes into the three phases in the benefits-realization model by Simonsen and Hertzum (2022): benefits specification, benefits realization, and benefits evaluation. Fig. 1 shows the structure of concepts, themes, and phases that emerged from the analysis, thereby summarizing how the interviews were coded and construct validity attained.

4. Results

The following analysis addresses the first part of the research question (How has the municipality approached benefits realization for the EDM system?) by proceeding from benefits specification, through benefits realization, to benefits evaluation. Table 3 provides an up-front overview of the structure and content of the analysis.

4.1. Benefits specification

4.1.1. Benefits specified up front: cost savings and improved efficiency

The IT director (Interviewee #01) expressed that digitalization provided ways of making municipal workflows more efficient by automating routine tasks, improving data management, and streamlining information flows. The chief administrative officer echoed this overall belief that digitalization was central to meeting strategic goals for improving municipal services and making the municipality a more attractive workplace, while at the same time saving resources:



Fig. 1. The structure of concepts, themes, and phases that emerged from the interview analysis.

Table 3

Overview of the anal	vsis themes, includin	g the number of times	each theme was mentioned	by the interviewees.
	J			J

Phase	Theme	Count	Sample quotes
Benefits specification	Benefits specified up front: cost savings and improved efficiency	15	"There should be a benefit on the price of the system, a benefit on operating the system, and then there should be a workflow benefit" (Interviewee #05) "It is a matter of trying to put a mild pressure on the organization" (Interviewee #11)
	Lack of clarity about pursued benefits	8	"I have not heard about an expectation that things should become more efficient" (Interviewee #10) "It is a new tune to hear our chief administrative officer say that this is something we must do" (Interviewee #04)
Benefits realization	All users received initial training; follow- up was unsystematic at best	38	"We were very systematic in the initial training but thereafter it was 100 % up to each unit manager to take care of the further implementation, and then the approach ceased to be systematic" (Interviewee #02)
	Technical problems have decreased system usefulness	14	"It turned out to be challenging for the vendor to deliver what we had been promised. That has made it a cumbersome process and difficult for the affected staff." (Interviewee #11) "We have response times between 6 and 10 seconds very time we search for something. That is fairly annoving, but we have to live with it." (Interviewee #08)
	Many users find their current practices good enough	18	"When it comes to trying out new things, then many are reluctant and question whether it is worth it" (Interviewee #08) "They are not eager to learn something new, because they know that they can get their job done with their current ways of workine" (Interviewee #02)
	Promising but late initiatives to promote smarter ways of working	17	"It made a huge difference when we got the digital agent, because then there suddenly was a person who took care of the communication and made things happen" (Interviewee #06) "We need to tell the success stories again and again, because it really makes a difference" (Interviewee #09)
Benefits evaluation	Benefits have not been realized, but budgets have been cut	19	"We are not there yet, not at all there yet" (Interviewee #01) "The benefit has not yet been realized, but it [i.e., the estimated saving] is missing somewhere because it has been included in the budget" (Interviewee #05)
	No formal follow-up on whether benefits have been realized	23	"We are bad at follow up. When a system enters production, then everything is presumed to be fine. Then we probably all use it because there are guidelines and everything. But do we benefit from it? We simply don't know." (Interviewee #04) "I was explicitly told not to spend time on measurements" (Interviewee #02)
	Potential for additional benefit but still unrealized	13	"On the basis of the tasks I have been doing and the way I have been trained in the system, I am prepared to claim that we exploit no more than 25 % of its maximum capacity" (Interviewee #09) "We could reap further benefits if we focused specifically on the functionality that is working and would make things easier for you and me in our day-to-day work" (Interviewee #01)

We believe that by using technology we can work smarter and more efficiently, and in that way stay an attractive workplace. We try to use IT and technology as a strategic tool, that is, to use it to tackle a workforce reduction as well as to avoid service imbalances. they will be very, very minimal. You should, rather, define the benefits up front but be conservative, that is, less ambitious than what we are bombarded with by the consultants.

(Interviewee #11)

(Interviewee #11)

The benefits expected from the EDM system were specified within this climate of a general belief in the power of IT to make work more efficient and more rewarding. Three benefits were specified, as stated by the financial director: "There should be a benefit on the price of the system, a benefit on operating the system, and then there should be a workflow benefit" (Interviewee #05). While the first benefit was realized by selecting the EDM vendor with the cheapest offer, it should be noted that this benefit did not comply with the standard definition of a benefit because it was not a gain realized through project outputs and outcomes. The second benefit was quantitatively set to a saving of about half a million Danish kroner a year (approximately EUR 70,000) in each unit of the municipal administration. These savings were to be obtained by streamlining workflows - the third benefit. The concrete ways in which workflows should be streamlined were not specified up front but left to be worked out after the system had entered operational use. In the municipality, it was not unusual to leave the details of how to obtain benefits for later and, thereby, tacitly delegate this task to unit managers and local staff: "Describing the benefits by detailing the business case does not happen, not very often anyway" (Interviewee #04).

The intention with the specified benefits was to "put a mild pressure on the organization" (Interviewee #11). This pressure should ensure that the employees adopted the EDM system and started to exploit its facilities. To explain this point, the chief administrative officer elaborated on the importance of stating the benefits up front:

Should we decide up front what the benefits should be, or should we just let the project run and then see what benefits we get retrospectively, when they are, so to speak, documented? I don't believe in the last model. I don't think it will produce any benefits. In any case,

4.1.2. Lack of clarity about pursued benefits

In spite of the intention to put mild pressure on the organization, the pursued benefits were not communicated clearly to the staff. One interviewee explicitly stated that she was unaware of expectations to become more efficient with the new EDM system: "I have not heard about an expectation that things should become more efficient" (Interviewee #10). It was her impression that the new EDM system was introduced simply because the old system had to be replaced. A project manager (Interviewee #03) remarked that uncertainty about the purpose of introducing the system was not restricted to the staff but also present among the unit managers. However, some interviewees expressed that management had started to communicate more clearly about the purpose and use of IT in the sense that they had recently become more outspoken about the need for using digitalization to do tasks in smarter ways. Utilizing IT to improve efficiency was increasingly stated as a must-do task rather than talked about in terms of visions and plans: "It is a new tune to hear our chief administrative officer say that this is something we must do" (Interviewee #04).

4.2. Benefits realization

4.2.1. All users received initial training; follow-up was unsystematic at best

In the period leading up to go-live, all users received initial training in using the EDM system. To be applicable in all municipal units, the training used generic cases and focused on how the system supported the handling of these cases. During training, the users were told about the EDM system; they did not interact with it (Interviewee #02). Furthermore, instead of screenshots, the training material contained handdrawn depictions of the screens. This approach was a deliberate choice to shift focus from pointing and clicking to understanding the workflow with the EDM system. While about half of the users liked this approach, the other half did not (Interviewee #02). One criticism was that the training was too generic and did not sufficiently instruct the staff in how to adjust their work practices to benefit from the EDM system (Interviewee #04).

It was, retrospectively, concluded that additional follow-up efforts were needed. However, additional training sessions had few attendees, and the intranet site for sharing experiences and best practices with the EDM system saw little use. The resulting impression was that the staff were too busy to set aside time for these activities. The EDM project manager summarized the training and follow-up activities in this way:

We were very systematic in the initial training but thereafter it was 100 % up to each unit manager to take care of the further implementation, and then the approach ceased to be systematic.

(Interviewee #02)

While the unit managers were responsible for the further implementation, they had few resources for implementation efforts. They had to find those resources within their own budgets (Interviewee #11). In addition, technical problems with the EDM system consumed extra resources.

4.2.2. Technical problems have decreased system usefulness

At go-live, the system was not fully ready but had some defective functions, lacked some data that had not yet been migrated from old systems, and was in general slow. These problems frustrated the users, who experienced their new system as cumbersome and error-prone. Over time, the vendor fixed some of the problems while others persisted, and the system got the reputation of being slow and not fully functional. This reputation hampered the implementation of the system because the users gradually started to doubt that spending more time learning to use it would enable them to do their work in smarter ways. Part of the reputation was undeserved in the sense that some clickintensive workarounds remained in use even after the problem that triggered the workaround had been fixed: "The staff have invented a lot of workarounds and not subsequently discovered when the workaround was actually not necessary anymore" (Interviewee #02).

4.2.3. Many users find their current practices good enough

The staff's primary responsibilities left little or no time for experimenting with the EDM system. An interviewed employee stated the focus on current routines quite explicitly: "It is a minority who take an interest in IT systems. You have to remember that people are comfortable with their current routines. They do not necessarily have a need for them to be made more efficient" (Interviewee #09). A unit manager expressed it in this way: "When it comes to trying out new things, then many are reluctant and question whether it is worth it" (Interviewee #08). In such an environment, it was tempting to keep training in the EDM system brief but, at the same time, important to instruct the users quite precisely about how to make use of its facilities. The municipality succeeded with the former but not with the latter. For a long period after initial training, the users largely continued to work like they did with the old system and, thus, did not change their practices to benefit from the facilities in the new EDM system. During this period, the mild pressure from the pursued benefits was not enough to make the unit managers insist that users identified and adopted smarter ways of working. Without explicit support from unit management, the EDM project manager was unable to effect change:

Unless their manager has said that it is a must-do, then they are often not going to prioritize it and spend time on it – even if I explain that it will make their work a lot easier. They are not eager to learn something new, because they know that they can get their job done with their current ways of working.

(Interviewee #02)

To effect change, the technical implementation of the EDM system had to be accompanied by the implementation of new work practices. This required a collaborative effort: "Unless we pull together and implement it [i.e., the EDM system] together, then we will not succeed. The technical implementation alone does not create the benefits. They are created in the units" (Interviewee #01). Without reaching the units in a thorough manner, the implementation efforts stopped short of making all staff use the system for the relevant tasks. For example, the financial director stated that in his unit they, rather, made minimal use of the EDM system:

At the moment, the system is used when necessary and most everything else is done in other systems. This means that there are fewer users than originally estimated. Therefore, the benefits realization must be recalculated because it is smaller when there are fewer users. (Interviewee #05)

4.2.4. Promising but late initiatives to promote smarter ways of working

The municipality recently – almost three years after go-live – launched initiatives to reinvigorate the implementation process. These initiatives included (a) locally based digital agents to support the staff in realizing additional benefit from the EDM system, (b) workshops for identifying ideas for such benefits in a bottom-up manner, and (c) a renewed focus on communicating the success stories to share the ideas that worked and create momentum.

The two workshops we observed led to the identification of 76 benefit ideas, each specified on a paper card. Most of the ideas were very concrete, such as improved technical support, a defined procedure for handling citizens' access-to-documents requests, and opening for digital signatures in the EDM system to avoid the hassle of printing, manually signing, and scanning. On the paper cards, the workshop participants indicated whether the specified idea involved a change in work processes, could be realized with technologies that were already available, or required technology not currently available in the municipality. According to the participants, 73 % of the ideas could be realized with available technology and 58 % of them would involve changes in work processes. These ideas could proceed directly to decision-making and, if prioritized, execution. The remaining ideas required technology that was not currently available, or they were quite general. For example, one card identified that resources were wasted because "there are too many bad habits and practices as a result of not having learned to use the system". These cards could not proceed directly to decision-making but could possibly provide inspiration for the next workshops.

4.3. Benefits evaluation

4.3.1. Benefits have not been realized, but budgets have been cut

The interviewees agreed that the specified benefits had not been realized. The financial director expressed the absent benefits as a general dissatisfaction with the system: "What we had was not good, but what we got [i.e., the EDM system] was not good either" (Interviewee #05). That is, it was difficult to point out benefits, specified or not. The IT director agreed that it had not been possible to identify the estimated savings but left open the possibility that it might become possible in the future: "We are not there yet, not at all there yet" (Interviewee #01). To explain the absent benefits, the chief administrative officer pointed to the problems with the vendor:

In the EDM project, we have not yet realized the benefits because the project is delayed. You can say that the benefits realization is delayed. We have had too much trouble with the vendor.

(Interviewee #11)

This explanation shifted the responsibility for the absent benefits from the municipality to the vendor. While this shift conveniently placed the blame elsewhere, it did not stop municipal management from cutting the budget of the units with the expected saving. The budget cut was made up front as part of putting pressure on the organization, thereby leaving the units with a partial system and an expectation of being more efficient:

The benefit has not yet been realized, but it [i.e., the estimated saving] is missing somewhere because it has been included in the budget. Someone will have to face that at some point.

(Interviewee #05)

The budget cut could have been rolled back when it became apparent that the benefits realization would be partial or delayed for technical reasons. It was not. Thereby, the budget cut, which was intended to push the EDM implementation forward, was instead dissociated from it. The units had to find other ways of cutting their expenses. The prime focus on lowering expenses also meant that the units normally had little interest in advertising the realization of a benefit: "There is a certain lack of interest in disclosing benefits, especially if they have been realized, because the result of saying it out loud usually is that your budget is cut" (Interviewee #01). This lack of interest further increased the dissociation between the EDM implementation and the discourse about benefits.

4.3.2. No formal follow-up on whether benefits have been realized

While there was agreement that the expected benefits had not been realized, no formal follow-up had taken place. An employee expressed it in this way: "I am not aware of any evaluations of any kind" (Interviewee #09). A team coordinator elaborated:

We are bad at follow up. When a system enters production, then everything is presumed to be fine. Then we probably all use it because there are guidelines and everything. But do we benefit from it? We simply don't know.

(Interviewee #04)

Thus, the agreement that the expected benefits had not been realized remained an overall impression. It tended to disregard the, admittedly few, success stories. In addition, the lack of follow-up meant that there was little basis for systematic efforts to improve matters by noticing and acting on difficulties, in the words of a project manager: "It would be nice if there was time to follow up so that benefits were not just dropped on the ground when systems go live and something gets difficult" (Interviewee #03). The EDM project manager would have liked to follow up by measuring the case workers' performance on selected tasks before and after the implementation but stated that "I was explicitly told not to spend time on measurements" (Interviewee #02). Instead, the municipality had introduced an online forum for sharing knowledge about how best to use the EDM system. This forum was considered a more forward-looking initiative than measurements. However, it remained unused even though the EDM project manager had informed about it on multiple occasions: "It doesn't happen. You just have to face that people don't have the time for it" (Interviewee #02).

Municipal management acknowledged that their attention, in the EDM project and in general, centered on the period leading up to and including go-live. After go-live, "Management quickly moves on to the next project" (Interviewee #11). Part of the reason for the quick shift in attention was that management's superiors - the politicians - had little interest in the EDM system, which was mostly for supporting clerical workflows internal to the municipal administration. Without sustained managerial attention, staff at all levels in the municipality turned to tasks other than the EDM implementation, and follow-up activities were omitted: "We tend to think that now it has been implemented so we can turn to something else - without following up on whether we either could realize additional benefit or must accept that we could only realize less than we thought" (Interviewee #03). While management acknowledged that their attention to benefits follow-up had been limited so far, the chief administrative officer maintained that reporting on benefits realization was mandatory. However, it appeared that expectations were a summative report rather than a means for iteratively working to realize more benefit:

I expect that when we have implemented the EDM system, then we in management will at some point get a report on the benefits we expected and what we realized. Otherwise, we are not doing our job. (Interviewee #11)

4.3.3. Potential for additional benefit but still unrealized

While technical problems still prevented the use of certain EDM functions, several interviewees pointed to useful functionality that remained unused. For example, an employee stated: "On the basis of the tasks I have been doing and the way I have been trained in the system, I am prepared to claim that we exploit no more than 25 % of its maximum capacity" (Interviewee #09). The unused capacity included functionality for creating new cases more efficiently, for setting up workflows to expedite collaborative processes, and for improved version control. The presence of considerable unused capacity was the rationale for the workshops initiated to reinvigorate the implementation process by identifying ideas for additional benefits. However, the reinvigoration had to overcome the accumulated effect of the staff's experience with the system over the three years since go-live. During this period, the EDM implementation had lost momentum, as expressed by the EDM project manager: "We had a very difficult start. As a result, many have - unnecessarily - lost faith in the system" (Interviewee #02). That is, the baggage accumulated by the system and vendor added to the difficulty of realizing further benefit from the EDM system.

5. Discussion

In the following, we discuss the second part of the research question, the notion of benefits slippage, and the limitations of the study.

5.1. Why have benefits not been realized to a larger extent?

The municipality implemented its new EDM system with the expectation of sizable cost and efficiency gains, but they have not been realized and – three years after go-live – the municipality finds that the potential of the EDM system is largely untapped. The benefits have slipped. Following our definition of benefits slippage, this means that benefits were specified but did not materialize even though they continued to be seen as, at least partially, realizable. We contend that this state of affairs is quite common (see, e.g., Arvidsson et al., 2014; Berger & Hertzum, 2014; Choi & Chandler, 2020). To explain benefits slippage, we discuss three reasons for it (see Fig. 2): inactionable benefits specifications, a prolonged realization process, and absent benefits follow-up.

5.1.1. Inactionable benefits specifications

Inactionable benefits specifications make it difficult to see the link from the specified benefits to the work-process changes necessary to realize them. In the municipality, the specified cost savings described how much the budget would be cut but not how the use of the EDM system would generate the savings. It was left to the units to find the savings by making effective use of the system. The training did not reach this level of specificity, and without guidance the units had neither the system knowledge nor the time and energy to explore the system in search of new and smarter ways of working. Benefits such as cost savings may be crucial to management, but they must be translated into goals for work processes to be operational for the staff who are to generate the savings.

To support this translation, some benefits-realization models propose a hierarchy with interlinked levels of benefits (e.g., Hertzum & Simonsen, 2011; Melton, 2007). The top levels contain management-oriented benefits, the middle levels staff-oriented benefits, and the bottom levels system-oriented benefits. The interlinking among the levels means that benefits at higher levels specify why lower-level benefits are desirable,



Fig. 2. Benefits slippage. The three reasons for benefits slippage break the connections from one step to the next in Simonsen and Hertzum's (2022) model of the benefits process.

while benefits at lower levels specify how higher-level benefits are to be realized (Hertzum & Simonsen, 2011). If the only benefits specified are top-level benefits, then the benefits specification addresses a management audience and may be instrumental in obtaining approval for the project, but it disregards the staff in two ways. First, they will not perceive the specified benefits as actionable and will, therefore, tend not to act on them. Second, they will not perceive the specified benefits as meaningful to their work - because they speak to management concerns rather than staff concerns – and will, therefore, tend not to be motivated by them. In the municipality, it added to the lack of meaningfulness that budgets were cut up front and thereby dissociated from the effects of using the EDM system. Without guidance about what to change and without motivation to work it out, the staff mostly continued their existing practices and remained foreign to the strategic intent of the EDM implementation. Arvidsson et al. (2014) term this response strategy blindness.

5.1.2. A prolonged realization process

A prolonged realization process may be caused by inactionable benefits specifications and other difficulties, but it is also itself causing benefits slippage. As a cause, the risk that the process will be disrupted before the benefits have been realized increases with the length of the realization process. To minimize this risk, the realization process should be kept short (Flyvbjerg & Gardner, 2023). We acknowledge that the yearlong implementation process in the municipality was partly the result of technical problems. However, our analysis also shows how the length of the process caused additional problems. Most evidently, a process with initial training followed by the gradual adoption of new ways of working over an extended period of time fitted poorly with competing activities. Soon after go-live, management's focus shifted to other matters. Relatedly, the staff's focus shifted back to their primary work after the initial training. As a consequence, the long and gradual benefits-realization process lacked active support from management and was not prioritized by staff. Under these conditions, the implementation process lost momentum and grinded to a halt.

Tyre and Orlikowski (1994) find that the window of opportunity for experimenting with new ways of working is short because the routines for the use of a new system tend to congeal quite quickly. A compact and intense process has a better chance of effecting change before routines congeal or disruptions occur. Once routines have congealed, it takes a dedicated effort to reopen the window of opportunity – the reinvigoration initiatives in the municipality may be an example – and unless such an effort is successful a prolonged process will not result in the realization of additional benefit. A compact and intense implementation process requires planning, which is difficult because it involves scrutinizing use scenarios before they become real and their consequences salient. Flyvbjerg and Gardner (2023) acknowledge that it may be tempting to bypass this difficulty, but they also find that with less planning the implementation process is prolonged and that the longer process increases costs and puts benefits realization at risk.

5.1.3. Absent benefits follow-up

Absent benefits follow-up contributes to a prolonged, or ultimately failed, realization process by creating uncertainty about the status of the benefits realization and by ignoring indications that benefits have not yet been realized. Follow-up is a key element in benefits-realization models (Ashurst et al., 2008; Simonsen & Hertzum, 2022; Ward et al., 1996). Without it, the process becomes unsystematic at best. However, the studied municipality had decided against spending time on measuring whether benefits were realized and it had, until the reinvigoration initiatives, allowed the units to restrict their use of the EDM system to its most basic functionality. While they were aware that the expected benefits had not been realized, they had for almost three years hesitated to act on this awareness. By not following up, the municipality failed to learn from its implementation efforts, but it also, and more importantly, learned to fail in benefits realization. Learning to fail means that an organization, over time, comes to accept and expect suboptimal performance, while creating explanations that rationalize and perpetuate this condition (Lyytinen & Robey, 1999). Examples of such explanations include the technical problems with the EDM system and its accumulated baggage of being inefficient.

The preferable alternative to learning to fail is learning to learn (Lyytinen & Robey, 1999). It involves creating occasions and incentives to learn as well as transitioning from articulating ideas to effecting change. The reinvigoration workshops are an example of occasions to learn. It is still an open question whether the municipality will succeed in turning the articulated ideas into realized benefits. To avoid that the benefits continue to slip, follow-up on the workshops is needed.

5.2. Benefits slippage

Benefits slippage is a failure to implement a realizable change for the better. In explaining why benefits slipped in the studied case, it appears that the municipality has experienced the EDM implementation as a burden more than an opportunity. The staff has tended to approach the implementation as a disruption that takes time away from their primary responsibilities, and management has not challenged this approach until they recently started to insist that increased digitalization is a must-do task. Simonsen and Hertzum (2022) list four common reasons for such hesitation to adopt change: lack of urgency, risk aversion, change fatigue, and going solid. All four of these reasons may contribute to benefits slippage. In particular, the incessant programs to make government institutions more efficient have increased the risk that they go solid. Going solid is "the absence of resource buffers for improvement initiatives because all resources are committed to tasks that are necessary for the organization to function at its current level of production" (Simonsen & Hertzum, 2022). It results in organizations with little capacity for change; they are not fluid but in the solid state. Going solid is the kind of state that leads to cutting budgets up front, to compressed training programs, and to having no resources for following up.

A specific challenge in avoiding benefits slippage is the timing of the follow-up activities. Williams et al. (2020) note that even though their interviewees were senior government officials, project managers, and government project reviewers, they did not feel able to give a definite answer when asked about when it is appropriate to evaluate benefits. To support the benefits-realization process, the evaluation should take place while the window of opportunity for changing work practices is still open. This consideration suggests evaluating early (Tyre & Orlikowski, 1994). However, in the interest of getting reliable evaluation results, it is preferable to postpone evaluation until work practices have stabilized. This consideration suggests evaluating late (Jurison, 1996). By expecting an evaluation report "at some point", the chief administrative officer in the municipality was content with late evaluation. In such cases, the evaluation will tend to summarize the end result of the implementation rather than to be a means of forming this result. If the evaluation is summative, then other follow-up activities must be done early to exploit the window of opportunity and help form the end result. While the reinvigoration initiatives appear promising, it is lax to let almost three years go by before they are initiated.

Benefits slippage suggests an organization that is more costconscious than benefits-driven. Such an organization will be conscious of the effort required to implement a new system. While the effort is real and must be expended straight away, the benefit is in the future and uncertain until realized. To avoid wasting resources on unsuccessful efforts, such an organization minimizes implementation efforts. This risk aversion saves resources in the short term but takes focus away from the benefits that originally motivated the implementation. They are allowed to slip.

5.3. Limitations

Three limitations should be remembered in interpreting the results of this study. First, the results are derived from a single case. They cannot be assumed to generalize unchanged to other cases (Yin, 2018). Rather, future studies are needed to validate and refine our results. These studies should span systems for tasks other than document management, government institutions other than municipalities, and cultural contexts other than Denmark. Second, we studied the implementation of the EDM system retrospectively rather than while it unfolded. The interviewees' accounts of early events may be influenced by their knowledge of later developments (Gabbert et al., 2003). While all but one interviewee have experienced the entire EDM implementation, we acknowledge that they respond on the basis of their individual role in it. Flyvbjerg and Gardner (2023) find that this role may involve misrepresenting the benefits during the implementation stages to game the process. The practice of cutting budgets up front may be construed as gaming but apart from that we have no evidence of strategically misrepresenting the benefits. That said, data other than interviews would be required to investigate benefits gaming in detail. Third, many digital systems in government are in use for a decade or more. Some of them have a troubled start but later become successful (e.g., Berger & Hertzum, 2014). Thus, benefits that initially slip, even for a multiyear period, are sometimes realized later. We cannot know whether this will happen with the EDM system.

6. Conclusion

Government institutions introduce digitalization to achieve benefits. This study investigates benefits slippage, that is, the situation where specified benefits do not materialize even though they continue to be seen as, at least partially, realizable. When benefits slip, the digitalization investment is wasted. We identify three reasons for benefits slippage:

- *Inactionable benefits specifications*, which do not provide a link from specified benefit to required action, thereby leaving staff without guidance about what work-practice changes to implement.
- A prolonged realization process, which increases the opportunity for external events to disrupt the process, for example by shifting attention to other matters before the benefits have been realized.
- Absent benefits follow-up, which creates uncertainty about the status of the benefits realization or simply ignores indications that benefits have not yet been realized.

In the studied municipality, the specified benefits of an EDM system had slipped for three years. A dedicated benefits-realization process with actionable benefits, short iterations, and close follow-up will be necessary to reopen the window of opportunity for effecting change. To meet what appears to be common conditions for practical work with benefits realization, future research should investigate how benefits-realization initiatives can be resumed late, locally, and at low cost.

CRediT authorship contribution statement

Kasper N. Vissing: Writing – review & editing, Methodology, Investigation, Data curation, Conceptualization. Mikkel H. Knoll: Writing – review & editing, Methodology, Investigation, Data curation, Conceptualization. Morten Hertzum: Writing – review & editing, Writing – original draft, Supervision, Methodology, Formal analysis, Conceptualization.

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References

- Åkesson, M., & Edvardsson, B. (2008). Effects of e-government on service design as perceived by employees. *Managing Service Quality*, 18(5), 457–478. https://doi.org/ 10.1108/09604520810898839
- Andersson, C., Hallin, A., & Ivory, C. (2022). Unpacking the digitalisation of public services: Configuring work during automation in local government. *Government Information Quarterly*, 39(1), Article 101662. https://doi.org/10.1016/j. giq.2021.101662
- Anthopoulos, L., Reddick, C. G., Giannakidou, I., & Mavridis, N. (2016). Why egovernment projects fail? An analysis of the healthcare.gov website. *Government Information Quarterly*, 33(1), 161–173. https://doi.org/10.1016/j.giq.2015.07.003
- Arvidsson, V., Holmström, J., & Lyytinen, K. (2014). Information systems use as strategy practice: A multi-dimensional view of strategic information system implementation and use. *Journal of Strategic Information Systems*, 23(1), 45–61. https://doi.org/ 10.1016/j.jsis.2014.01.004
- Ashurst, C., Doherty, N. F., & Peppard, J. (2008). Improving the impact of IT development projects: The benefits realization capability model. *European Journal of Information Systems*, 17(4), 352–370. https://doi.org/10.1057/ejis.2008.33
- Aubry, M., Boukri, S. E., & Sergi, V. (2021). Opening the black box of benefits management in the context of projects. *Project Management Journal*, 52(5), 434–452. https://doi.org/10.1177/87569728211020606
- Banerjee, A., Duflo, E., Imbert, C., Mathew, S., & Pande, R. (2020). E-governance, accountability, and leakage in public programs: Experimental evidence from a financial management reform in India. *American Economic Journal: Applied Economics*, 12(4), 39–72. https://doi.org/10.1257/app.20180302
- Berger, J. B., & Hertzum, M. (2014). Adoption patterns for the digital post system by Danish municipalities and citizens. In *ECIS 2014: Proceedings of the 22nd European* conference on information systems (pp. 1–14). AIS. https://aisel.aisnet.org/ecis2014/ proceedings/track23/7/.
- Berger, J. B., Hertzum, M., & Schreiber, T. (2016). Does local government staff perceive digital communication with citizens as improved service? *Government Information Quarterly*, 33(2), 258–269. https://doi.org/10.1016/j.giq.2016.03.003
- Botric, V., & Bozic, I. (2021). The digital divide and e-government in European economies. *Economic Research*, 34(1), 2935–2955. https://doi.org/10.1080/ 1331677X.2020.1863828

Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, M. N. Coutanche, L. M. McMullen, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), APA handbook of research methods in psychology, vol 2: Research designs (pp. 57–71). American Psychological Association. https://doi.org/10.1037/13620-004.

- Buyannemekh, B., Picazo-Vela, S., Luna, D. E., & Luna-Reyes, L. F. (2024). Understanding value of digital service delivery by governments in Mexico. *Government Information Quarterly*, 41(2), Article 101936. https://doi.org/10.1016/j.giq.2024.101936
- Choi, T., & Chandler, S. M. (2020). Knowledge vacuum: An organizational learning dynamic of how e-government innovations fail. *Government Information Quarterly*, 37 (1), Article 101416. https://doi.org/10.1016/j.giq.2019.101416
- Das, A., Singh, H., & Joseph, D. (2017). A longitudinal study of e-government maturity. Information & Management, 54(4), 415–426. https://doi.org/10.1016/j. im.2016.09.006
- Dwivedi, Y. K., Wastell, D., Laumer, S., Henriksen, H. Z., Myers, M. D., Bunker, D., ... Srivastava, S. C. (2015). Research on information systems failures and successes: Status update and future directions. *Information Systems Frontiers*, 17(1), 143–157. https://doi.org/10.1007/s10796-014-9500-y
- Epstein, B. (2022). Two decades of e-government diffusion among local governments in the United States. *Government Information Quarterly*, 39(2), Article 101665. https:// doi.org/10.1016/j.giq.2021.101665
- Fleron, B., Pries-Heje, J., & Baskerville, R. (2022). Becoming a most digitalized country: A history of digital organizational resilience in Denmark. *Communications of the* Association for Information Systems, 51, 120–139. https://doi.org/10.17705/ 1CAIS.05107
- Flyvbjerg, B., & Gardner, D. (2023). How big things get done. Random House. Frøkjær, E., & Korsbæk, H. (1992). Informatization policies in Denmark. In P. H. A. Frissen, V. J. J. M. Bekkers, B. K. Brussaard, I. T. M. Snellen, & M. Wolters (Eds.), European public administration and informatization (pp. 25–47). IOS Press.
- Gabbert, F., Memon, A., & Allan, K. (2003). Memory conformity: Can eyewitnesses influence each other's memories for an event? *Applied Cognitive Psychology*, 17(5), 533–543. https://doi.org/10.1002/acp.885
- Haug, N., Dan, S., & Mergel, I. (2024). Digitally-induced change in the public sector: A systematic review and research agenda. *Public Management Review*, 26(7), 1963–1987. https://doi.org/10.1080/14719037.2023.2234917
- Hertzum, M. (1995). Computer support for document management in the Danish central government. Information Infrastructure and Policy, 4(2), 107–129.
- Hertzum, M., Ellingsen, G., & Cajander, Å. (2022). Implementing large-scale electronic health records: Experiences from implementations of Epic in Denmark and Finland. *International Journal of Medical Informatics*, 167, Article 104868. https://doi.org/ 10.1016/j.ijmedinf.2022.104868
- Hertzum, M., & Simonsen, J. (2011). Effects-driven IT development: Specifying, realizing, and assessing usage effects. *Scandinavian Journal of Information Systems*, 23 (1), 3–28. https://aisel.aisnet.org/sjis/vol23/iss1/1.
- Hesselmann, F., & Kunal, M. (2014). Where are we headed with benefits management research? Current shortcomings and avenues for future research. In ECIS2014: Proceedings of the 22nd European conference on information systems (pp. 1–17). AIS. https://aisel.aisnet.org/ecis2014/proceedings/track10/16/.
- Holgeid, K. K., Jørgensen, M., Volden, G. H., & Berg, H. (2022). Realising benefits in public IT projects: A multiple case study. *IET Software*, 17(1), 37–54. https://doi. org/10.1049/sfw2.12079
- Hujran, O., Al-Debei, M. M., Al-Adwan, A. S., Alarabiat, A., & Altarawneh, N. (2023). Examining the antecedents and outcomes of smart government usage: An integrated model. *Government Information Quarterly*, 40(1), Article 101783. https://doi.org/ 10.1016/j.giq.2022.101783
- Irani, Z., Love, P. E. D., & Jones, S. (2008). Learning lessons from evaluating eGovernment: Reflective case experiences that support transformational government. *Journal of Strategic Information Systems*, 17(2), 155–164. https://doi. org/10.1016/j.jsis.2007.12.005
- Juell-Skielse, G., Lönn, C.-M., & Päivärinta, T. (2017). Modes of collaboration and expected benefits of inter-organizational e-government initiatives: A multi-case study. *Government Information Quarterly*, 34(4), 578–590. https://doi.org/10.1016/j. giq.2017.10.008
- Jurison, J. (1996). The temporal nature of IS benefits: A longitudinal study. Information & Management, 30(2), 75–79. https://doi.org/10.1016/0378-7206(95)00050-X
- Kempeneer, S., & Heylen, F. (2023). Virtual state, where are you? A literature review, framework and agenda for failed digital transformation. *Big Data & Society*, 10(1), 1–13. https://doi.org/10.1177/20539517231160528
- Kvale, S., & Brinkmann, S. (2009). Interviews: Learning the craft of qualitative research interviewing (2nd ed.). Sage.
- Levesque, V. R., Bell, K. P., & Johnson, E. S. (2024). The role of municipal digital services in advancing rural resilience. *Government Information Quarterly*, 41(1), Article 101883. https://doi.org/10.1016/j.giq.2023.101883
- Lindgren, I., Madsen, C.Ø., Hofmann, S., & Melin, U. (2019). Close encounters of the digital kind: A research agenda for the digitalization of public services. *Government Information Quarterly*, 36(3), 427–436. https://doi.org/10.1016/j.giq.2019.03.002
- Love, P. E. D., & Matthews, J. (2019). The 'how' of benefits management for digital technology: From engineering to asset management. *Automation in Construction*, 107, Article 102930. https://doi.org/10.1016/j.autcon.2019.102930
- Lyytinen, K., & Robey, D. (1999). Learning failure in information systems development. Information Systems Journal, 9(2), 85–101. https://doi.org/10.1046/j.1365-2575.1999.00051.x

- Government Information Quarterly 42 (2025) 102051
- Markus, M. L. (2004). Technochange management: Using IT to drive organizational change. Journal of Information Technology, 19(1), 4–20. https://doi.org/10.1057/ palgrave.jit.2000002
- Melton, T. (2007). Project management toolkit: The basics for project success (2nd ed.). Butterworth-Heinemann.
- Nyansiro, J. B., Mtebe, J. S., & Kissaka, M. M. (2021). E-government information systems (IS) project failure in developing countries: Lessons from the literature. *African Journal of Information and Communication*, 28, 1–29. https://doi.org/10.23962/ 10539/32210
- Pereira, L., Sempiterno, M., & Jerónimo, C. (2021). Benefits realisation management: Systematic literature review. International Journal of Agile Systems and Management, 14(2), 333–351. https://doi.org/10.1504/ijasm.2021.10041669
- PMI. (2019). Benefits realization management: A practice guide. Project Management Institute.
- Rajala, T., & Aaltonen, H. (2021). Reasons for the failure of information technology projects in the public sector. In H. Sullivan, H. Dickinson, & H. Henderson (Eds.), *The Palgrave handbook of the public servant* (pp. 1075–1093). Springer. https://doi.org/ 10.1007/978-3-030-29980-4_78.
- Rigsrevisionen. (2013). Beretning til statsrevisiorerne om politiets it-system POLSAG. Rigsrevisionen. https://www.rigsrevisionen.dk/revisionssager-arkiv/2013/mar/be retning-om-politiets-it-system-polsag.
- Schou, J., & Hjelholt, M. (2019). Digitalizing the welfare state: Citizenship discourses in Danish digitalization strategies from 2002 to 2015. *Critical Policy Studies*, 13(1), 3–22. https://doi.org/10.1080/19460171.2017.1333441
- Semmann, M., & Böhmann, T. (2015). Post-project benefits management in large organizations - Insights of a qualitative study. In *ICIS2015: Proceedings of the 36th international conference on information systems* (pp. 1–16). AIS. https://aisel.aisnet. org/icis2015/proceedings/PracticeResearch/6.
- Simonsen, J., & Hertzum, M. (2022). Effects-driven IT improvement: Pursuing local postimplementation opportunities. Scandinavian Journal of Information Systems, 34(1), Article 2. https://aisel.aisnet.org/sjis/vol34/iss1/2.
- Tyre, M. J., & Orlikowski, W. J. (1994). Windows of opportunity: Temporal patterns of technological adaptation in organizations. Organization Science, 5(1), 98–118. https://doi.org/10.1287/orsc.5.1.98
- UN. (2024). E-government survey 2024. United Nations, Department of Economic and Social Affairs.
- Walsham, G. (1995). Interpretive case studies in IS research: Nature and method. European Journal of Information Systems, 4(2), 74–81. https://doi.org/10.1057/ eiis 1995 9
- Ward, J., & Daniel, E. (2012). Benefits management: How to increase the business value of your IT projects (2nd ed.). Wiley.
- Ward, J., Taylor, P., & Bond, P. (1996). Evaluation and realisation of IS/IT benefits: An empirical study of current practice. *European Journal of Information Systems*, 4(4), 214–225. https://doi.org/10.1057/ejis.1996.3
- Warth, L. L., & Dyb, K. (2019). eHealth initiatives; the relationship between project work and institutional practice. BMC Health Services Research, 19(1), 520. https://doi.org/ 10.1186/s12913-019-4346-0
- Weerakkody, V., Janssen, M., & Dwivedi, Y. K. (2011). Transformational change and business process reengineering (BPR): Lessons from the British and Dutch public sector. Government Information Quarterly, 28(3), 320–328. https://doi.org/10.1016/ j.giq.2010.07.010
- Williams, T., Vo, H., Bourne, M., Bourne, P., Cooke-Davies, T., Kirkham, R., Masterton, G., Quattrone, P., & Valette, J. (2020). A cross-national comparison of public project benefits management practices – The effectiveness of benefits management frameworks in application. *Production Planning and Control, 31*(8), 644–659. https://doi.org/10.1080/09537287.2019.1668980
- Yang, K., & Rho, S.-Y. (2007). E-government for better performance: Promises, realities, and challenges. International Journal of Public Administration, 30(11), 1197–1217. https://doi.org/10.1080/01900690701225556
- Yin, R. K. (2018). Case study research and applications: Design and methods (6th ed.). Sage. Zhu, B., Zhong, R., & Wei, C. (2024). Measuring digital government service performance:
- Evidence from China. China Economic Review, 83, Article 102105. https://doi.org/ 10.1016/j.chieco.2023.102105

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