

DRIFT TOWARDS SYMPTOMATIC INQUIRY IN PUBLIC SECTOR INFORMATION SYSTEMS INNOVATION INITIATIVES

Completed Research Paper

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Abstract

In this paper, we build on existing research showing how initiatives that explicitly aim for information systems (IS) innovation in public sector contexts often drift toward incremental process improvement. We examine a public sector initiative seeking to foster innovation by supporting projects addressing complex organizational challenges in public organizations. Studying three projects and drawing on Argyris and Schön's (1996) theory of organizational learning, we observe a tendency for the projects to diagnose and devise solutions for the surface manifestations - the symptoms - rather than the deeper etiology of the complex problems they seek to address. We refer to this tendency as a drift toward symptomatic inquiry, contrasting it with what we call etiological inquiry, and argue that it contributes to projects leaning toward incremental process improvement. We identify drivers and suggest that deliberate arrangements to counterbalance them are necessary and represent a promising avenue for further research.

Keywords: public sector, IS innovation initiatives, symptomatic and etiological inquiry

1 Introduction

Advancements in digital technologies present enormous opportunities for innovation in the public sector. For many years, digitalization in the public sector has primarily taken the form of digitizing previously analog processes to seek efficiency improvement, and digital technology has served as a means of incrementally improving existing processes and services. Increasingly, in many countries, the ambitions of digitalization extend beyond incremental process improvement to digital transformation of government and public organizations. As the name suggests, such transformations require innovation that challenges more fundamental aspects of how public sector organizations are organized and how and what services they offer (Hinings et al., 2018).

However, information systems (IS) innovation in public sector contexts proves difficult. While incremental process improvement often can happen without disrupting much of what already exists, innovation requires processes that are exploratory, experimental, and disruptive in nature (Nambisan et al., 2017). Meanwhile, public organizations are typically attuned to principles of stability, procedural fairness, accountability, and clear division of labor (Breaugh et al., 2025; Sørensen & Torfing, 2011), principles that may be more accommodative to process improvement than more disruptive forms of change (Magnusson et al., 2020).

To stimulate more innovation within public organizations, governments in several countries experiment with initiatives that try to fund, build capacity for, and, by other means, encourage innovation (Klika & Longinidou, 2024; Monteiro & Kumpf, 2023). The initiatives may take the form of innovation labs, dedicated funding schemes, or idea accelerators that support efforts targeting smaller or larger organizational or societal challenges with exploratory and experimental methods. However, an interesting and curious phenomenon documented by prior research is that projects or other arrangements introduced to explicitly foster IS innovation, somehow, as they unfold, turn into incremental process improvement projects (Magnusson et al., 2020).

Prior research offers two explanations of this phenomenon. First, Magnusson et al. (2020) show how traditional project management practices, such as those related to risk management, control, and funding, may still be applied to innovation initiatives. However, these are more compatible with incremental development. Hence, although ambitions are explicitly innovative, the project moves towards a focus on incremental process improvement. For instance, project managers emphasizing tangible products and quantifiable expected benefits early in the process may unintentionally favor smaller incremental adjustments to processes compared to innovations with less clearly anticipatable and quantifiable effects.

A second factor, discussed by Hron et al. (2022) and not limited to the public sector, highlights how fundamental features of digital artifacts can promote incremental change rather than more radical forms of innovation in larger organizations. Even when a digital artifact is designed with the intention to introduce radical change, its inherent malleability and configurability may lead it to become only an incremental addition to existing practices once implemented. I.e., the new technology, due to its malleability and configurability, is used in ways that allow existing practice to persist.

In this paper, we complement these existing perspectives with an additional dimension of what may drive the move from ambitions of innovation to incremental process improvement. We do so based on a qualitative study of an initiative in a Nordic country that seeks to stimulate innovation by funding and supporting innovation projects in public sector organizations aiming to address complex organizational problems. We have studied how the initiative is organized and engages with the individual projects, while also studying the process of three specific projects in detail.

Interestingly, all three projects move from ambitions of innovation to incremental process improvement at different stages of their process. In our cases, the move seems not only to be caused by project management practices or the attributes of digital technology, but also by how they, for different methodological and contextual reasons, engage with the complex problem at hand. The projects are all defined to address problems that appear to spring out of complex, political contexts. Effective and sustainable solutions will likely require going beyond treating manifestations of the problem and engaging with the deeper-seated issues, the etiology from which the manifestations of the problem emerge.

However, in our three projects, there seems to be a tendency, a push, or a *drift* towards attending to the manifestations, rather than the etiology of the problems. Leaning on Argyris and Schön's (1996) theory of organizational learning, we examine this tendency and coin it as a drift towards symptomatic inquiry. Understanding the word 'inquiry' in a Deweyan sense, by symptomatic inquiry, we mean experimental examination of a problem and how to address it by primarily attending to how it manifests itself. On a continuum, we contrast symptomatic inquiry to more etiological forms of inquiry, where the experimental examination of a problem and how to address it is, to a greater extent, directed at what constitutes the underlying causality producing those manifestations.

We argue that symptomatic inquiry more easily leads to incremental process improvement, while IS innovation often will require etiological inquiry. However, in the kind of complex problems public sector organizations grapple with addressing, both existing theory and our findings suggest that the etiological route is a thorny one requiring significantly more effort. More so, our findings indicate that both methods and contextual arrangements push towards symptomatic inquiry, making etiological paths both difficult to see and undesirable or impossible to follow.

To shed light on this observed drift, we examine our case in more detail by asking:

RQ1: What drives drift towards symptomatic inquiry?

RQ2: How can such a drift be prevented or counterbalanced?

In response to these questions, we first outline a set of aspects that seem to drive the observed drift. We then turn to discuss implications for those managing initiatives that seek to stimulate innovation in public sector contexts, and for those managing concrete IS innovation projects.

By developing a conceptual continuum between symptomatic and etiological inquiry, suggesting the tendency for a drift towards symptomatic inquiry, and outlining a set of contextual and methodological drivers for this tendency, we contribute to the literature on IS innovation and digital transformation in public sector contexts (Shin, 2019; Mergel, 2019; Magnusson et al., 2020; Gong & Yang, 2024).

2 Related Research

By incremental process improvement, we refer to smaller improvements that optimize existing processes in pursuit of efficiency gains, quality improvements, or cost reductions, thereby aligning with established routines and practices (Wessel et al., 2021). Innovation, by contrast, denotes departures from existing structures (Barthel & Hess, 2020) through the reconfiguration of sociotechnical arrangements (Hinings et al., 2018), organizational logics, and value creation processes (Nambisan et al., 2017). Such change often involves recombining digital and organizational resources to enable new forms of organizing and may entail redefining value propositions and organizational identities rather than supporting existing ones (Wessel et al., 2021; Barthel & Hess, 2020). The distinction between the type of innovation activities organizations engage in matters because incremental process improvement is typically found to be easier to pursue, as it aligns with existing competencies and incentive systems. As a result, most organizational changes tend to be incremental, even when ambitions for transformation are articulated (Svahn et al., 2017).

It is well established that public sector operations are carried out within a highly efficiency-focused context (Magnusson et al., 2020; Isik, 2025; Breaugh et al., 2025; Jørring et al., 2025; Bertot et al., 2016). However, ambitions in the EU and general discussions in local governments (EU, 2021) emphasize innovation ambitions that point to the need for substantial changes in current structures. One prominent example is the aspiration to build new citizen-centric services organized around ‘life events’ (Hietala & Päivärinta, 2025). Such initiatives require collaboration across traditional silos and sectors (Mazzucato, 2018; Thomassen & Li, 2024; Breaugh et al., 2025; Mergel & Desouza, 2013). Yet in practice, these ambitions prove challenging to fulfill for several reasons discussed by prior literature (Magnusson et al., 2020).

First, governments largely rely on mechanisms built on stability and accountability and adhere to a particular set of values. Within this context, public sector organizations carry out their societal mandates and provide essential services that citizens depend on and cannot choose (Lindgren & Jansson, 2013). This puts procedural fairness and efficiency at the center of their operations (Sørensen & Torfing, 2011; Breaugh et al., 2025). While these values are vital for maintaining legitimacy, they may simultaneously limit the capacity to accommodate the uncertainty and experimentation that innovation requires (Janssen & van der Voort, 2016; Rizk & Lindgren, 2025).

Second, supporting the established governance regime, the organization of the public sector further reinforces the efficiency orientation. Public organizations are typically structured as silos that support specialization, create hierarchy, and establish professional and sectoral boundaries, each with clearly defined mandates, responsibilities, and budgets (Lindquist & Buttazzoni, 2021). This arrangement is often associated with New Public Management and intended to ensure that core values are upheld while resources are used efficiently, yet it also creates limitations for innovation (Breaugh et al., 2025).

Third, the incentives, goals, and project management practices that guide public sector initiatives are suggested to restrict possibilities for innovation (Johannessen, 2025; Isik, 2025). Projects are typically managed through detailed requirement specifications that set clear boundaries and guidance for the solution and outcome (Riihimäki & Pekkola, 2021), leaving limited flexibility for the open-ended

exploration necessary for innovation (Barthel & Hess, 2020; Janssen & van der Voort, 2016). More so, the value related to interventions working towards the ambitions of a more citizen-centric focus in public service development is often difficult to demonstrate within prevailing project management frameworks. This results in exploratory initiatives that may be cut or reframed to fit into conventional project management criteria (Isik, 2025).

2.1 Attempts at innovation through government initiatives

To stimulate more innovation within public organizations, governments in several countries experiment with initiatives that try to fund, build capacity for, and, by other means, encourage innovation (Klika & Longinidou, 2024; Monteiro & Kumpf, 2023). Research has documented a variety of strategies for and issues with attempting to foster innovation in public sector contexts (Gong & Yang, 2024). For instance, the literature describes different configurations of innovation labs (Shin, 2019; Holmström et al., 2021), digital service teams (Mergel, 2019), and other capacity-building initiatives as attempts to introduce more explorative and experimental activities in service development (Klika & Longinidou, 2024; Monteiro & Kumpf, 2023).

Of particular focus in our paper, research has documented how such initiatives that are explicitly established to promote innovation often shift toward incremental process improvement as they unfold (Magnusson et al., 2020). Research points to two main explanations that contribute to this drift. Traditional project management and IT governance practices remain more compatible with incremental process improvements than with innovation (Magnusson et al., 2020). Magnusson et al., (2020) point to existing practices creating project conditions characterized by risk aversion, short-term political horizons, and funding models that demand measurable outcomes and limit the potential for innovation. As a result, even when innovation is the stated ambition, projects tend to move toward efficiency-oriented outcomes that can be justified through low-risk improvements. Likewise, evaluation and funding criteria, which emphasize quantifiable outputs and short-term gains, further constrain possibilities for experimentation and learning (Isik, 2025). Efforts that fail to demonstrate efficiency-based outcomes risk discontinuation or being reframed to uphold these criteria.

At the same time, the inherently malleable material properties of digital artifacts may reinforce these tendencies. The same characteristics that may enable innovation also increase the likelihood that new digital solutions will adapt to, rather than transform, their organizational surroundings (Hron et al., 2022). Innovation projects often start as separate efforts to protect them from existing constraints, yet instead of disrupting established practices, they are often absorbed into them, producing incremental extensions rather than innovation. This illustrates the broader dilemma of any digital investment being framed as innovation, even if it merely reinforces existing structures (Magnusson et al., 2020). Our paper complements these perspectives with a drift towards symptomatic inquiry as an additional dimension of why ambitions of innovation may move towards incremental process improvement.

3 Theoretical Lens: Symptomatic and Etiological Inquiry

To understand the drift toward symptomatic inquiry in the projects of our empirical case, we lean on a set of insights from Argyris and Schön's (1996) theory of organizational learning. Argyris & Schön were interested in how organizations learn in their inquiries to address complex, problematic situations. Unlike well-defined technical problems, organizational problems of a certain magnitude, they argue, are complex, multifaceted, and dynamic. Their causes are typically not what you directly observe, but usually arise from deeper socio-political issues.

Being 'complex', the problems are caused by the relationships between a variety of aspects, often unproblematic on their own, that interact to produce undesirable emergent behavior. Traces or symptoms of the underlying problems will typically surface at different places and points in time throughout the organization. The surfacing problems hence emerge out of a complex etiology, and problem-solving must seek to understand the key dimensions of this etiology and experiment with interventions trying to affect the undesirable behavior that emerges from it. Such inquiry involves significant uncertainty. Our understanding of the problem etiology will typically, at best, be partial, and due to the level of

complexity, a complete diagnosis before devising interventions is seldom attainable. Rather, the process must be organized as inquiry in a Deweyan sense, meaning it must be experimental, where learnings from desirable and undesirable effects of interventions are considered valuable for further diagnosis and new attempts at intervening.

More often than not, Argyris & Schön argue, inquiries aimed at solving organizational problems are often limited to addressing the surface issues, the symptomatic layer of the much deeper problem. The result is “solutions” that only treat the symptoms, have little to no effect, or move the problem to the surface elsewhere or later on. Addressing these in any meaningful way requires directly targeting the underlying assumptions and issues “behind” the immediate manifestations of the problems, i.e., questioning why the problem arises and is ‘allowed’ to persist in the first place. This will very often involve challenging how actors perceive and engage within the problem situation they themselves make an integral part of. Hence, problem solving includes understanding and challenging how actors ‘frame’ the problem - i.e., their mental models of what the problem is about (Schön & Rein, 1995).

Attending to the underlying causes of an organizational problem thus quickly becomes political and can be uncomfortable for those involved, as it means surfacing and confronting deeper-seated issues and disagreements. As Argyris and Schön note from their studies of problem-solving efforts in a number of organizations, actors are often “strongly tempted to invent solutions acceptable to the present system, but these [are] the ones least likely to resolve the underlying dilemma.” (p. 70)

As organizational IS are complex, interconnected sociotechnical systems, problems of some magnitude will most probably emerge from complex problem etiologies that may stretch throughout and beyond the organization and have a basis in deep-seated socio-political issues. IS innovation, design, and development processes often take concretely defined problems as a starting point. If these problems remain unquestioned, the efforts run the risk of solving problems that are only the manifestations emerging from a deeper problem etiology. Consequently, innovation efforts may “solve” problems that primarily help increase efficiency in what is already there, but fail to attend to the deeper etiology necessary for more radical and sustainable change.

Argyris and Schön’s insights suggest that IS innovation efforts seeking to address complex problematic situations can involve inquiry that is more or less symptomatic or etiological. With symptomatic inquiry, we refer to experimental examination of a problem and how to address it by primarily attending to how the problem manifests itself. In contrast, in more etiological forms of inquiry, the experimental examination of a problem and how to address it is, to a greater extent, directed at what constitutes the underlying causality producing the undesirable manifestations. We stress that these are not mutually exclusive concepts. We view symptomatic and etiological inquiry as ends of a conceptual continuum, where the experimental examination of a problem and how to address it moves from surface manifestations toward the underlying causality that produces them. Based on our findings, we will return to this point in our analysis and discussion.

4 Research Approach

Our empirical material is based on a qualitative study (Myers, 2019), part of an engaged research collaboration with those managing the initiative. For the last three years, we have engaged in interviews, document analysis, and co-analysis with the permanent members of the initiative, and examined three innovation projects in detail through document analysis and retrospective interviews with the project participants. The collaboration aims to understand their current efforts to stimulate innovation and identify challenges and future strategies.

4.1 Case background

The initiative has been running for almost 10 years and has funded more than 50 projects within a wide range of public sector contexts, such as health, policing, road and safety, municipality management, and taxation. In essence, the initiative funds projects in public organizations that grapple with a complex problem they wish to address through a design thinking-based approach to innovation. The initiative helps to initially frame the often open-ended problem and scope it in ways considered suitable for

innovation. More so, the initiative makes use of the private consultancy market to procure (and hence also help further develop) capacity for “design-based” innovation projects in public sector contexts.

Contrasting itself to typical funding mechanisms for problem-solving in the public sector in the Nordic countries, it brands itself as trying to stimulate projects to move beyond “passive diagnosis” of problems towards “more active exploration.” As methodological support, the initiative leans on and makes mandatory a design thinking approach to innovation, contrasting it to the classic linear problem-solving approaches more commonly used in public sector organizations.

The initiative has a yearly cycle where public organizations apply with a project concept note within a deadline once a year. The team evaluates these based on their potential (complex, persistent problem, innovation potential) and selects a set of 3 - 6 that will move forward to procurement. The initiative is funded over the state budget and is, hence, in constant competition with other priorities and subject to changes in political priorities. For instance, in 2023, the initiative saw a significant budget reduction, meaning funding for considerably fewer projects from that year onwards.

It is hence important for the initiative to advertise its relevance and results through presentations and promotional material. Such material includes project highlights, videos promoting certain projects, and their solutions. The initiative consists of a core team of four - two from the national directorate for digitalization and two from a government-funded organization, who, among other things, work to promote design-based methods to societal and public sector innovation. For each project, their most important role is to help define and scope the problem and to facilitate the procurement of appropriate consultancies. After this initial support, they engage with the project teams early in the process to make sure they are setting out “on the right track,” meaning using the design thinking-based innovation methods in the intended way.

4.2 Data collection and analysis

We have collected and analyzed data regarding the nature of the overarching initiative and the three specific projects through interviews, observations of public presentations, document analysis, and co-analysis of findings. The forms and quantity of data collection is summarized in Table 1.

	Data sources	Interviews/engagement	Documents
The initiative	Semi-structured interviews with permanent members; co-analysis sessions; seminars/observations	10 hours of interviews; 4 co-analysis sessions	~300 pages of documents and promotional materials
Project 1	Semi-structured retrospective interviews with key project participants	4 hours	120 pages of project documents
Project 2	Semi-structured retrospective interviews with key project participants, co-analysis sessions	14 hours; 3 co-analysis rounds	155 pages of project documents
Project 3	Semi-structured retrospective interviews with key project participants	12 hours	140 pages of project documents

Table 1. Data collection overview

All interviews have been recorded and transcribed, and we have engaged in several rounds of thematic analysis based on the interview transcripts and documents. The phenomenon of projects moving from ambitions of innovation to incremental process improvement reported in the literature inspired us, as we saw similar patterns in our data. We proceeded to explore reasons for this move through cycles of coding and thematizing our data. In dialogue with our thematizing of the data, we drew timelines of the different projects, highlighting the specific moments that seemed to be particularly important in defining the direction of inquiry. We examined what aspects went into making these decisions and saw how a variety of methodological choices and surrounding concerns potentially worked together to color their perspective and, so to speak, “push” the project towards solutions that we later termed symptomatic. We

then drew up individual and one collective process model that showed the link between our candidate “drivers” and the events and outcomes of the projects. The concepts of different forms of inquiry and organizational learning from Argyris and Schön’s (1996) helped us frame the distinction between the route the projects appeared to be going, and contrasting it to the more fundamental issues that they engaged less with, while also illuminating the difficulties of proceeding with the etiological route. As we had coined the two concepts of symptomatic and etiological inquiry, we did another round of more focused thematic analysis and mapping, both of the project process, and the structure and relationships of actors, concerns, and other elements around it, to examine the drivers in relation to the symptomatic-etiological continuum more specifically. This, in turn, led us to see the move towards incremental process improvement as the *drift* towards symptomatic inquiry. While we will examine the drivers and some implications in Section 6, we first turn to offer a brief history of the three projects.

5 Cases - the Three Projects

The three projects, which work within very different public sector contexts, all share the fact that they set out to address complex organizational problems with an explicit ambition of innovation. As we will see, they all, to different degrees and for different reasons, seem to drift towards symptomatic inquiry and, as a consequence, towards incremental process improvement.

5.1 Project 1: Reducing the reporting burden of GPs

The first project was led by the national directorate for digital health and was originally defined around the problem of an increased reporting burden experienced by general practitioners (GPs) nationally. As in many countries, the GPs increasingly spend much of their time after or during patient consultations on documenting and reporting data to a variety of actors such as the national disease surveillance program, various research programs, the employers of their patients, and the national welfare administration. A critical point of the initial problematization, serving as the basis for the project, was that the systems for reporting are fragmented, meaning that the GPs have to use a variety of different portals and forms to do the mandatory reporting. The key stakeholders involved in the process were representatives of the GPs, the directorate for health, which devises policy around the GP role, representatives from the organizations in need of the data reported, and from the electronic patient journal (EPJ) software vendors who could potentially integrate reporting forms and perhaps even automate reporting in their software solutions. There are multiple EPJ vendors, as the GPs procure their own EPJ software solutions.

5.1.1 A problem-oriented diagnosis

The project team began with a diagnosis of the larger problem situation. A key concern in the diagnosis was to include the perspectives of all the central stakeholders and to elicit their perspectives on what constituted the problem. The main vehicle to do so was by arranging a set of workshops where the stakeholders were able to express their concerns and witness the others' concerns.

The result from the workshops was the definition by the design team of what they call a problem complex, comprising a vast set of problem formulations from the different stakeholders. For instance, the GPs expressed concerns with the increasing reporting burden, and a seeming lack of understanding and concern for the collective burden that the reporting requirement from different actors represented - i.e., the “lack of any overall oversight of the totality of the reporting burden” as articulated by the project lead. Meanwhile, the EPJ vendors expressed concerns with the number of requests to integrate with various APIs for new reporting applications and databases, and the lack of coordination in the requests for such updates. The EPJs’ main message was that integrating all the reporting into their software solutions, given the number of different actors and their respective systems, would be unrealistic.

5.1.2 A consensus-driven approach

Moving forward to examine potential avenues for solutions, the process was largely driven by further workshops with group work to ideate imagined ideal situations and more concrete interventions. Each

group consisted of representatives from each stakeholder. A key concern for the project team was to facilitate consensus and compromise in these workshops, to, in their words, ensure that ideas were realistic and viable. As the project lead articulates:

“That was part of the key — making sure no one came up with a dream scenario that the other party, who might have to deliver the solution, couldn’t possibly commit to. Instead, the idea was to jointly discuss and reflect on the different desired scenarios.” (Project lead)

5.1.3 The intervention - a pragmatic compromise

The output of the workshops was a set of scenarios and “solution areas” that were subject to further debate. These ranged from establishing a permanent collaboration arena between the different actors, examining ways of easing integrations with the EPJs, to introducing a gatekeeper to limit the number of new reporting duties placed on the GPs, which arguably would involve moving deeper into the problem etiology. From these, it was decided to move forward with developing a new portal that gathered all the different reporting portals into one unified interface.

The decision to move further with the portal was largely pragmatic, given, as the consultant reflects, “What can we, given our mandate, actually do something with?” And being the directorate for digital health, this mandate primarily rested on the digital reporting solutions, not, for instance, on devising a gatekeeper role and function. Also, they lacked any formal power to persuade the EPJ vendors to integrate into their solutions, and hence, the portal.

“We’ve focused on the functional and technical target picture, and on how we can deliver better solutions for healthcare personnel when it comes to reporting information to the authorities. Then there are a number of surrounding issues — broader strategic considerations and tasks — that we’ve planted where they belong, feeding them into other tracks that address those matters more extensively.”

A prototype for the portal was developed and tested. Two years after the project was concluded, it has not been taken further for implementation. Compared to the other avenues surfaced in the process, e.g., on integration in the EPJs and perhaps even more so the gatekeeping function, the portal appears as a symptomatic treatment of a very complex issue. While it may make reporting somewhat more efficient, it would not deal with the more fundamental issue of the ever-increasing reporting duties. However, pursuing more etiological avenues would most probably involve a far more politically difficult process and a rethinking and renegotiation of the mandate and scope of the project. With a desire to move from diagnosis to exploration of solutions, a more etiological path may seem less attractive, if not an impossible path to take.

5.2 Project 2: The Hospital office service

The second project concerned the improvement of an office service at a regional public hospital. The office service offers administrative support to clinicians and patients at the hospital, e.g., with booking patient appointments. They struggled with understaffing and limited resources, affecting their supportive capacity. Doctors often rely on individuals within the office service, and when these individuals are on sick leave, the administrative system breaks down.

The hospital was in a larger process of moving to new premises while also getting updates to both the EPJ software and the hospital logistics software. They saw this as an opportunity to rethink the role and organization of the office service, and the project was offered a rather broad mandate to explore what the future office service could look like.

5.2.1 A process-oriented diagnosis

The innovation team began with a diagnosis to understand the current office service, focusing on patient flows, office service workflows, and pain points. The diagnosis resulted in a set of detailed process maps indicating activities that were experienced as problematic or unnecessarily time-consuming by the office service personnel.

The initial diagnosis had a primary focus on the processes and concerns of the office service staff and the patients. When moving into ideation of possible interventions, the project team met resistance from the clinicians who had been less involved so far. The consultant explains:

“We began to develop some models for how we could organize the office service to best support patient flow in the new hospital, given the new systems. But then we met a lot of resistance [from] the clinicians — they couldn’t understand how this was supposed to support their flow.”

5.2.2 Political issues surface

A tension became visible. The office service had developed out of the clinicians' secretary services and gradually professionalized and developed into a more independent unit. The project directly challenged the existing order of things. In response, and to move forward, the project team decided to define a scope that allowed them to proceed without being too dependent on the clinicians. Instead of larger questions of the overall organizing of the office service, they decided to begin by focusing on the specific work processes internal to the office service: *“We all agreed that our focus had to be on the [office service] work processes. That’s what we have ownership of and control over”* (consultant)

The set of bottlenecks identified in the diagnosis was discussed, and several corresponding ideas for interventions were entertained. One consisted of moving certain tasks from the office service to a different department, and the other involved extending the scheduling horizon of patients, reducing time spent managing the patients on a waiting list. For the two ideas, the team was able to quantify the potential benefits in hours saved by the office service per year. These numbers were applauded by the project steering committee, and they gave a green light to proceed with implementation.

5.2.3 Experimenting with process improvement

The project further experimented with implementing the ideas into the day-to-day work of the office service. The former proved viable and produced the kind of results in terms of time saving as projected in the calculations and is hence considered a success. The second halted as the work processes regarding patient scheduling proved too interdependent with the clinicians' work processes, who were not interested in participating in the change.

While the first intervention is still running and considered a success, the second has not been taken further. Interesting to note is how the project initially had a broad mandate that allowed for exploring the future role and function of the office service, yet, facing potential quantifiable efficiency gains as illuminated by the process-oriented diagnosis, they turned their attention to incremental process improvement. Also, when changes to work processes revealed more fundamental issues related to the identity and organizing of the office service, moving forward with the processes they could do something with was judged as the most fruitful path to pursue, which, given the circumstances, is very understandable, yet arguably steering inquiry towards a more symptomatic than etiological path.

5.3 Project 3: The service of renewing driver’s rights

The third project was a combined effort between the Directorate of Health and the Public Roads Administration to improve the service of driver’s license renewal. This service had been subject to several improvement attempts over the last decade, as all involved parties agreed that the administration of driver’s rights was less than ideal. Citizens, primarily concerning elderly and professional drivers, regularly had to get health certificates from their GP, which demonstrated sufficiently good health for driving. This certificate had to be carried by the citizen to a traffic station, where it was interpreted by staff without medical training. This often led to mistakes, sending the citizen back to the GP to correct or clarify the certificate form, and in some cases, sending the citizen into a long complaint process through several levels of public administration. The process was often experienced as a burden both to citizens and to those responsible for administering the service, as well as for GPs, and the service and its administration were experienced as fragmented.

The actors involved in providing the service spanned three sectors and four directorates, and adhered to both sector-specific and cross-sectoral regulations. Collaboration proved difficult as responsibilities

often fell between the chairs of several organizations, including funding, decision-making authority, and ownership. The general experience from previous improvement attempts was that they all entered the situation with different perceptions of what caused the inefficiencies, they wanted to tackle different challenges, and valued different ideas as the most important and central.

5.3.1 An etiological starting point

The complexity and challenges related to collaboration, and the lack of a shared understanding of the problem, were already articulated in the call for tender for the project. In the call, the actors requested aid in applying a new method and approach to address the situation. As a result, the project team had an open problem situation as their point of departure.

In their bid for the project, the consultant team explicitly described their expertise on methods that could help lift the perspective away from the existing situation faced by the current administration. In their approach, they also saw the importance of understanding the current situation not only to find consensus within the existing, but to use it as insight to inform the development of a new, shared problem understanding for the administration. Based on the starting point of a thoroughly explained problem landscape, along with interviews held by the consultants, one of them had the following thoughts on what they realized:

“As the work progressed, it became clear that the key was to understand what was preventing change - in how the [services] administrations are organized, how they work, make decisions, and their culture around developing changes. That focus became a common thread throughout the process. It had little to do with end-user experience. We can design a good form and a good service experience for citizens, but unless we manage to enable organizational change, neither will happen.” (Consultant)

Accordingly, what became the focus of the process was to understand what prevented collaboration and build a collaboration for exploring how to move forward and enable change within the experienced rigidities and shared responsibilities. Rather than simply designing a better service flow or a new application for the citizens, the team argued that it would have limited merit if it did not address the deeper issues of collaboration.

5.3.2 Working with divergent perspectives

Through their insights and analyses, the consultants strategically worked to lift the perspective of the participants away from the existing situation by presenting somewhat neutral “facts” that could challenge existing perceptions and thereby put the service and its societal role to the forefront of the efforts. Potential benefits ultimately pointed towards a set of interventions that would digitalize the information flow between some of the involved agencies that would remove steps for the citizen, while reorganizing roles and tasks in the administration. This was believed to lay the foundations for solving many of the related issues necessary for building a new, technology-supported administration of driver’s license rights and renewal.

5.3.3 Reintroducing the work back into heterogeneous operations

The project was able to develop a functioning collaboration among the representatives from the different actors. However, moving forward with implementing and testing the solution was restricted due to concerns of security risks that came into conflict with the IT department of the roads administration. Similar issues arose at several of the involved actors as discussions extended beyond the initial collaboration to include the larger organizations of which each representative is a part. New issues arose as interdependencies with new stakeholders and collisions with existing IT infrastructure became visible. Also, parts of the solution would require actions from EPJ vendors, and, as in Project 1, it proved difficult to persuade them to do so. Thus, eventually, the intervention developed through the collaboration failed to be implemented at scale.

In the third project, by going beyond examining how an improved service, e.g., in the form of an app, could look like to engaging with the underlying problems of collaboration, their inquiry can be seen as more etiological in nature than the two former projects. This may be the result of more actively pointing

to a potential problem etiology already in the initial procurement process and the approach taken by the team, focusing significantly on surfacing the issues, making earlier efforts to improve the service halt. In that sense, with the experience from the prior failed attempts, the project may have had the advantage of hindsight as compared to the other two projects. Yet, despite the consultants' success in establishing a collaboration among the actors, implementation proved difficult when larger parts of the complexity of each actor's organization became part of the process. This begs the question: Was focusing on collaboration among the representatives a sufficiently etiological path to take?

6 Analysis and Discussion

We have offered a brief story of three projects that seek to address complex organizational problems and seem to drift towards symptomatic inquiry. We now turn to explicitly address our two research questions by outlining and discussing a set of drivers for this drift, a set of considerations for projects and broader initiatives, and some implications for practice and research. Finally, we discuss how our paper contributes to research and practice.

6.1 What drives the drift towards symptomatic inquiry?

6.1.1 An incompatible success paradigm

Broadly, we see an initiative that naturally has to defend its relevance and results in competition with other political priorities to sustain funding. To this end, it invests significant effort in showcasing results from its projects and in developing a clear and distinct identity, one of being exploratory and experimental, contrasting itself to initiatives simply leading to public advisory reports with no concrete deliverables in the shape of actual working "solutions." The push on the overarching initiative seems to affect the specific projects, putting certain pressure on delivering results, which is arguably both healthy and natural. As a symptom of this, several of the project participants in projects 1 and 2 emphasize the importance of constantly "moving the process forward" to avoid being trapped in "eternal diagnosis." However, having this focus may make decisions regarding the way forward when facing political difficulties, disagreement, and opposition in the projects naturally lean towards what seems like a more viable route to produce "results".

At the same time, the initiative and also the individual projects exist within a context that seems to have a certain perspective on what constitutes "success" and "results" - a certain "success" paradigm. Within this paradigm, "success" and "results" seem tied to the ability to (quickly) arrive at concrete, tangible deliverables where expected results can be clearly anticipated and ideally quantified before implementation (Isik, 2025; Jørring et al., 2025). This may not be compatible with a notion of progress necessary for innovation and etiological inquiry, which by nature involves radical uncertainty and must be exploratory and experimental. For instance, substantial forms of learning, i.e., that the project has suffered from a fundamental error in its understanding of the problem to be addressed or pursuing the wrong objectives, is something that must be expected and hence celebrated as progress in both innovation initiatives and etiological inquiry (Li, 2025). However, in the success paradigm that dominates, this would most likely not be seen as such, for instance, by the steering groups waiting for easily quantifiable results.

6.1.2 Methodological drivers

Beyond the larger contextual issue of the success paradigm, the projects point to several methodological aspects that may further help fuel the drift to symptomatic inquiry.

First, our findings indicate that an emphasis on compromise and consensus in the innovation process may divert us from the problem etiology and lead to symptomatic inquiry. Project 1 heavily emphasizes consensus and employs several techniques (e.g., in the workshops) to ensure that the project arrives at interventions that are acceptable to all parties. This has a downside: the reporting portal seems like very much a product of compromise - it is acceptable by all actors within the current system as it arguably

offers very little change to the status quo. In other words, it is acceptable to all because it is symptomatic and incremental.

Second, the three projects differ in their approach to diagnosis and articulation of the problem situation and, consequently, the understanding they develop of the problem at hand. In project 1, emphasis is on surfacing the different problems various actors face associated with the broader reporting burden problem. The result is a “problem complex” essentially comprising a nested web of problem formulations. In project 2, the team emphasizes process mapping as the primary means of making sense of the office service and its inefficiencies. Arguably, both approaches may contribute to inquiry drifting towards the symptomatic, as neither really develops an etiological model that surfaces the system “behind” that gives rise to the observed processes and expressed problems. Observable processes are arguably symptoms of the structure of the underlying system, while the problems experienced by the different actors could be the same (Argyris & Schön, 1996; Meadows, 2006). Thus, diagnosis and the sensemaking and modelling tools employed can be more or less symptomatic or etiologic, and, naturally, will contribute to where inquiry proceeds. This is interesting given that the diagnostic tools (surfacing problems, and process mapping) are central to widely used methods, e.g., within service design - an increasingly common approach to public service development and innovation.

Third, all three projects surface an interesting challenge: How do you define project scopes that accommodate etiological inquiry? In project 1, we see how the initial scoping of the project as being under the management of the directorate for *digital* health pushed inquiry towards the symptomatic interventions of an integrated portal, rather than untangling the more etiological problem of an ever-increasing workload for the GPs. In project 2, inquiry into the office service showed interdependencies with the clinicians' work processes, challenging the viability of the interventions explored.

With this, our findings point to a mismatch between typical project scoping practices and what is necessary for etiological inquiry, and hence, innovation. Traditional scoping normally involves drawing boundaries around what we know about a problem before detailed inquiry has begun - this is also a precondition for calling a project an innovation project - the outcome is supposed to be uncertain, and the process is exploratory (Wiener et al., 2019). More so, scoping tends to be done based on the organizational structures at hand and hence assumes a diagnosis that keeps within certain boundaries. Meanwhile, etiological inquiry may be more like uncovering a badger's den - holes appear at many different places, unbounded by fences and other arrangements put up at the surface. All the holes are interconnected by a network of tunnels that we cannot see before we start probing. What holes and parts of the network to attend to and what should become subject to intervention cannot be known before we start exploring the den.

6.1.3 When is inquiry etiological?

The projects point to a more fundamental question of whether and how we can judge when inquiry and interventions are sufficiently etiological. Given the recursiveness of complex organizational problems and that causality is not linear, a symptom may also serve as a cause, and one problem's etiology may be the symptom of an even deeper or higher-level etiology. A practical methodological question becomes: when do we know that we are working at a sufficiently etiological level in a given problem situation? Is it possible to make any clear distinction, or are we always working with a potential mirage or an ouroboros?

Project 3 illustrates this challenge. While projects 1 and 2 more clearly can be judged as taking a symptomatic route, at least in hindsight, project 3 seems to work actively to engage with the deeper, etiological aspects of service delivery by working to strengthen collaboration among the actors, rather than immediately attending to surface interventions. However, their focus on collaboration could also be seen as symptomatic, as these difficulties in collaboration, as well, may be a mere symptom of an underlying structural issue of how the public sector organizations are organized, incentivized, and measured in ways that make inter-organizational and cross-sectoral collaboration difficult and undesirable in the first place. A more etiological inquiry in this case may have been to attend to these deeper structures, rather than to facilitating a collaboration between the specific actors in this specific

context. Hence, symptomatic versus etiological is perhaps best thought of as a matter of degree, and as relative both to the starting point of an inquiry and to one's criteria for judging something to be a "solution." In this way, innovation efforts may be more or less etiological based on the number of etiological *steps* they take, i.e., how far they move below the surface relative to the initial starting point, and on the extent to which solutions devised at that level produce meaningful and sustainable effects.

We have developed the concepts of symptomatic and etiological inquiry through retrospective examination of innovation projects. A risk, therefore, is that the level of inquiry on the symptomatic–etiological continuum can only be assessed *ex post*, in which case the concepts are primarily useful for evaluating projects rather than for guiding inquiry as it unfolds. We think this is an important question for further research: how might the direction of inquiry be assessed as an IS innovation project unfolds? One possible way of developing such guidance is to attend to how decisions about the direction of inquiry are made as the project unfolds, and what understandings of "progress" shape these decisions. In the cases, particularly Projects 1 and 2, progress seems to be understood and judged in terms of movement toward tangible or concrete solution concepts, agreement among stakeholders, narrowing toward something feasible, and visible action and momentum. These are reasonable and important criteria in innovation projects, but if inquiry is to move in a more etiological direction, they may need to be complemented and balanced against other criteria. Such criteria may include whether a given choice helps surface deeper causes, identify previously unrecognized but potentially important interdependencies, reframe the problem, and make underlying political issues and tensions discussable. Balancing such criteria when making decisions regarding the direction of inquiry may be very difficult, which also makes it a highly relevant subject for further research.

6.2 How can the drift be avoided or counterbalanced?

The contextual and methodological aspects outlined above seem to sustain a push towards symptomatic inquiry in the three projects. Our findings thus suggest that for etiological inquiry to be feasible, such drivers must somehow be eliminated or counterbalanced either on the project level, the level of the initiative, or the context surrounding both. We will discuss some aspects of such counterbalancing by suggesting a few considerations on the project level, and on the level of broader initiatives seeking to stimulate and fund IS innovation.

6.2.1 Considerations on the project level

A first consideration is how the project's approach to diagnosis and articulation of the problem situation (e.g., through mapping and modelling) shapes what becomes visible in inquiry: some approaches primarily surface observable manifestations of problems, while others may help illuminate the deeper structures that produce them. For instance, process-mapping, such as workflow diagrams and 'user journeys' representing how people 'flow' through a system, widely used in e.g., service design and innovation, alone may only offer a symptomatic understanding of the situation and hence, if not combined with other forms of sensemaking, only lay the basis for symptomatic inquiry.

A second is the role consensus plays in the inquiry process, as consensus-building may enable progress among heterogeneous stakeholders but may also lead to compromises that avoid confronting the problem etiology. Consensus is developed and serves different roles in the three projects. While project 2 arguably is driven to a more symptomatic route partly due to a lack of necessary consensus with the doctors, project 1 shows the risks associated with working towards compromise and consensus as a primary or end goal in itself. What consensus is developed, how, on what aspects (e.g., ends vs. means), and to what purpose - to move inquiry forward to a "solution" or to dive deeper into necessary issues of the problem etiology - matters greatly.

A third consideration concerns what boundaries are drawn by early and continuous scoping decisions and how these may limit the project's ability to follow key interdependencies as they emerge through inquiry. Here, our cases show that scoping is not only about what is formally stated in project proposals, calls for tender, and other documents, but also about who is made responsible for the project, which actors are involved, which problem dimensions are prioritized, which conflicts are entered into or

avoided, and what is treated as outside the project's concern. For inquiry to follow a more etiological path, projects may need, however difficult, to make it their business to follow important interdependencies even when these stretch beyond the initially imagined scope.

6.2.2 Considerations on the level of broader initiatives stimulating IS innovation

Initiatives like the one in our case may find themselves stretched between two very different logics - one favoring exploration and experimentation, the other predictability and tangible results (Magnusson et al., 2020). Our findings suggest that trying to satisfy the prevailing paradigm may risk pushing projects towards symptomatic inquiry. Thus, such initiatives, in addition to focusing on funding and otherwise capacitating innovation projects, may need to work considerably with developing, communicating, and establishing acceptance for alternative success paradigms under which innovation efforts can be judged and assessed more fruitfully. These issues point to several considerations.

A first consideration for initiatives is how the preparatory process for specific projects, including project proposals and calls for tender, may help set an *etiological direction* from the outset. For instance, as we saw in project 3, by pointing directly to potentially underlying causes such as “collaboration” and suggesting that these are the main objects of inquiry. Meanwhile, they may also communicate certain expectations for projects to face, deal with, and perhaps report on, situations where inquiry is deepened along the symptomatic–etiological continuum. This may help sensitize, legitimize, and encourage the project to make decisions that move inquiry along an etiological path.

A second consideration is how the notion of “progress” and “success” is explicitly and implicitly defined and communicated by the initiative, both internally to projects and externally to the wider public sector context, and whether it may push inquiry in a more or less symptomatic or etiological direction.

Related to this, the initiatives should consider how it may signal that deeper engagement with problem etiology represents a sign of quality, progress, and success, even when it does not immediately result in tangible solutions. In other words, the initiatives can seek to establish an understanding of success going beyond delivering concrete products with clear quantifiable potential results (e.g., savings), to one assigning value to and legitimize projects that primarily achieve advancements in learning, new and more fruitful perspectives, and signs of the onset of sustainable systemic improvement. Such work could involve being conscious about which projects are showcased and applauded in their portfolio, and on the basis of which they are communicated.

A third consideration is to see it as a core objective of the initiative's work to not only engage inwardly with the specific projects, but also outwardly with the broader public sector ecosystem to communicate and legitimize an appropriate understanding of quality, progress, and success in IS innovation efforts. Doing so is not an easy task and would require challenging prevailing fundamental understandings, root metaphors, language, frameworks, and success criteria of a system that may primarily be geared towards the procurement and construction of well-defined, bounded artifacts.

6.3 Contributions

To a practical audience, the conceptual continuum between symptomatic and etiological inquiry, the drivers, and the considerations outlined in the previous sections, offers useful heuristics for practitioners engaged in organizing concrete innovation projects, initiatives that attempt to support and promote them, and those engaged in the broader organizing of the public sector.

For researchers, our findings contribute to the body of knowledge on IS innovation and digital transformation in public sector contexts (Shin, 2019; Mergel, 2019; Magnusson et al., 2020; Gong & Yang, 2024). As prior research has shown, ambitions of innovation in public sector innovation efforts have a tendency to turn into incremental process improvement (Magnusson et al., 2020; Hron et al., 2022). Our analysis extends our knowledge on this phenomenon by adding drift towards symptomatic inquiry as an additional dimension of what may drive initiatives to move from ambitions of innovation to incremental process improvement. By defining the conceptual continuum between symptomatic and etiological inquiry and showing how these are useful to understand important distinctions and issues in public sector IS innovation, we offer a conceptual contribution that can support further research. The

concrete drivers discussed in the previous two sections each illuminate issues with significant practical implications, and each warrants further empirical research and potential theorizing. Particularly, the questions around how the direction of inquiry on the symptomatic-etiological continuum can be assessed as inquiry unfolds, and appropriate mechanisms for counterbalancing the drive towards symptomatic inquiry offer very relevant and interesting avenues for further research.

We hope that the conceptual continuum between symptomatic and etiological inquiry, the contextual and methodological drivers, and the considerations for how to counterbalance them can offer a useful set of heuristics for practice and a basis for further research into IS design, development, and innovation in public sector contexts.

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