



## The hidden ‘co-designers’ of service: exploring policy instruments in e- messaging

Adeline Hvidsten  
adeline.hvidsten@kristiania.no  
Kristiania University College, Oslo, Norway

### Abstract

Approaching services as sociomaterial constellations might bring to the fore new temporalities and accountabilities in designing, beyond that of the immediate service (Kimbell & Blomberg, 2017). This work-in-progress paper draws on a processual study (Langley, 1999) from Norwegian health care. It is inspired by objectivist strands of Science and Technology Studies (STS), especially Actor-Network Theory (ANT) (e.g. Latour, 2005) it explores in what way non-humans might partake as co-designers in the development, provision and re-design of service delivery: finding policy ideas, legislation and ICT hard at work.

Keywords: non-humans, designing for service, design for policy, sts, ant, public sector, health care

### Introduction

This short work-in-progress paper aims to further resolve and conceptualize the role of non-humans in designing and delivering for service, applying an analytical approach inspired by objectivist strands of Science and Technology Studies (STS), mainly Actor-Network Theory (ANT) (e.g. Latour, 2005). By including - but also going beyond - the role

of technology, it contributes to further conceptualizing services as sociomaterial configurations (Kimbell & Blomberg, 2017), and also the urgent “need to understand the relationships between policy making, policy implementation, and designing” (Junginger, 2013, p. 1). I present a qualitative study of coordinating inter-organizational service delivery in Norwegian health care, focusing on selected insights from the development, use and re-design of a standardized and strongly regulated e-messaging system. The system was one of many measures highlighted in the 2008 “Coordination reform” in Norwegian health care (The Norwegian Ministry of Health and Care Services, 2008), aiming to improve continuity of care as patients moved between primary and specialist care (especially admittances and releases from hospital).

As services are social, invisible and perishable they are produced and reproduced in each delivery and a service situation can never be fully replicated (Penin, 2018). In health care, this constitutes a large challenge, as services must be of a certain quality - or the result could be fatal. In Norway, the inherent uncertainties of health care service delivery have led to strong top-down management, as standardized technologies, routines and regulations attempt to control at least some aspects of service delivery. However, this has sometimes resulted in an outcome which is exactly the opposite of what was intended (The Norwegian Department of Health and Care Services, 2012; The Office of the Auditor General, 2015). This forms an interesting context for exploring how non-humans might partake in the development, provision and re-design of service delivery.

## **Non-humans in designing for service**

Co-design is a process where “different actors participate at different moments and in different ways in a sequence of diverse and sometimes even contrasting events” (Manzini, 2014b, p. 65). Service delivery and design include both social and material aspects, and several scholars have called for resolving the existing product/process and technological/non-technological dichotomies (Mortati & Villari, 2014; Sangiorgi, 2009). Kimbell and Blomberg (2017, p. 92) include the “sociomaterial configuration” as one of three perspectives on the object of service design, enhancing the differences of underlying assumptions in service design research. Such an approach is inspired by research in anthropology, Science and Technology Studies (STS) and literatures in systems and

participatory design: “This lens proposes that together the constituents ‘co-articulate’ a service as it unfolds in practice, connecting material and digital touchpoints and people’s experiences to participation in social practices, organizational routines and narratives about value and valuing” (Kimbell & Blomberg, 2017, p. 87).

The lens both zooms in and out simultaneously, highlighting “the specific cultural, economic and political practices and institutions that co-articulate service”(Kimbell & Blomberg, 2017, p. 89). Further, it adds to the complexity of the service configuration, bringing to the fore new accountabilities, beyond those in the immediate service.

Indeed, participatory design has long embraced the “sociomateriality” of design (e.g. Agger, 2014): referring to how the social and the material are inherently inseparable but permeate each other in practice (Orlikowski & Scott, 2008). Ehn (2008, p. 92) believes that when we ask “[h]ow do they get things done their way?” – how design happens, we should “inquir[e] into the ‘agency’ of not only designers and users, but also of non-human ‘actants’ such as objects, artefacts and design devices.”

In designing for service, we recognize that services cannot ever be fully designed, but that we can design for some outcomes to be more likely than others (Meroni & Sangiorgi, 2011). Indeed, as it is so difficult to design the “social”, some say designing the “technical” might be the best option. In this vein, Baek et al. (2018) propose a sociotechnical framework which aims to transform social systems through designing the technical system. They propose conceptualizing communities as sociotechnical systems, where people’s relationships (social system) might develop interdependently with technological solutions, and can support each other’s production in a self-enforcing virtuous cycle (Baek et al., 2018). Such a sociotechnical systems approach is one of few formal sociomaterial approaches for studying design for service. A systems approach does not consider the individual’s needs (it is not user-centred design), as these might not align with the rest of the system and might cause unintended side effects (Baek et al., 2015).

Zooming out on the larger political landscape might be useful, as policy will in any case shape the conditions for designing for service (Junginger, 2013, 2017). Junginger (2013, p. 1) expressed the need to better understand the relationship between service design and policy-making, and the two previously separate realms are currently moving closer

following the emergence of “design for policy” (Bason, 2014). Here, service design might become “central to achieving desirable policy outcomes” (Junginger, 2017, p. 8). However, as service designers might also be in danger of reifying current unsustainable logics in the public sector, such as efficiency, if they do not question larger systemic issues and underlying logics (Steinberg, 2014).

While the politics of service design and designing for service is receiving increasing attention, few studies have focused on when - and in particular in what form - political agency might emerge in designing or delivering services. This is especially relevant when designing for the public sector. A systemic approach is in opposition to a user-centred approach (Baek, Meroni, & Manzini, 2015). There is still a lack of concrete analytical approaches as well as empirical studies in designing for service that follow Kimbell and Blomberg (2017): seeing services as sociomaterial configurations, zooming out on larger accountabilities and temporalities and zooming in on users in service delivery.

### **Analytical approach inspired by actor-network theory**

This section gives a brief introduction to how a processual approach inspired by objectivist strands of STS might illuminate some of the challenges above.

Process studies see change and innovation as ongoing, instead of a linear approach consisting of phases. It focuses on “how and why things emerge, develop, grow, or terminate over time” (Langley et al., 2013, p. 1). As in services, this means that rather than the world being made up of substantial entities it consists of events and experiences. When change is constantly ongoing, design attempts to provide some order – to reach some envisioned pattern (Hernes, 2007): making some outcomes more likely than others (Meroni & Sangiorgi, 2011). As such, a processual approach is ideal for studying design as ongoing accomplishments by heterogeneous actors over time: studying design as always inherently incomplete and ongoing.

Inspired by ANT, design (and innovation) happens over time through processes of “translations” (Latour, 1999, 2005). We might say we begin with a “controversy”, a wicked design problem or some desired end goal. However, if it involves many actors, there will be a number of options,

interpretations and ideas. As we try to archive the aforementioned order, it becomes a political process where someone's interests must "win" (Mørk et al., 2006). Actors enrol other actors into their networks through translations, increasingly speaking on their behalf (representing them) (Callon, 1999), to the point where a network starts appearing as single actor, stabilizing temporarily. However, in the process, all actors involved in the translation change (e.g. joining forces and gaining new capabilities). Establishing relations between actors becomes a question of power: the power to speak for others and the power to hold configurations together. This power is not limited to human actors.

As a part of objectivist strands of STS, ANT scholars apply the "principle of symmetry": striving to apply the same analytical and descriptive framework in the face of both humans and non-humans, "provided it is granted to be the source of action" (Latour, 1996, p. 373): "An actor network is most simply defined as any collection of human, non-human, and "hybrid" human/non-human actors who jointly participate in some organized (and identifiable) collective activity in some fashion for some period of time" (Kaghan & Bowker, 2001, p. 258).

Some find this troubling, but is not a matter of intentionality, but of capability to act (e.g. translate). The principle simply suggests that for non-humans "there might exist many metaphysical shades between full causality and sheer inexistence," and that in addition to being backdrops and scaffolding for the social, non-humans might "authorize, allow, afford, encourage, suggest, influence, block, render possible, forbid and so on" (Latour, 2005, p. 72). It is not only "social" and "material", but many shades of humans and non-humans that make up these relations, networks, or configurations. Such an approach might illuminate the agency of non-humans across time in design processes - and in practice as the agency to co-construct emergent outcomes.

## Case and methods

This study is part of a qualitative research project funded by the Norwegian Research Council for the period of 2013-2017. It includes two academic institutions, a large Norwegian hospital and two large municipalities in the hospital's catchment. The project's mandate was to explore changes in professional practice after the implementation of standardized electronic messaging (e-messages) between hospital wards and municipal service-providers along the patient pathway - from admittance to discharge (Figure 1).

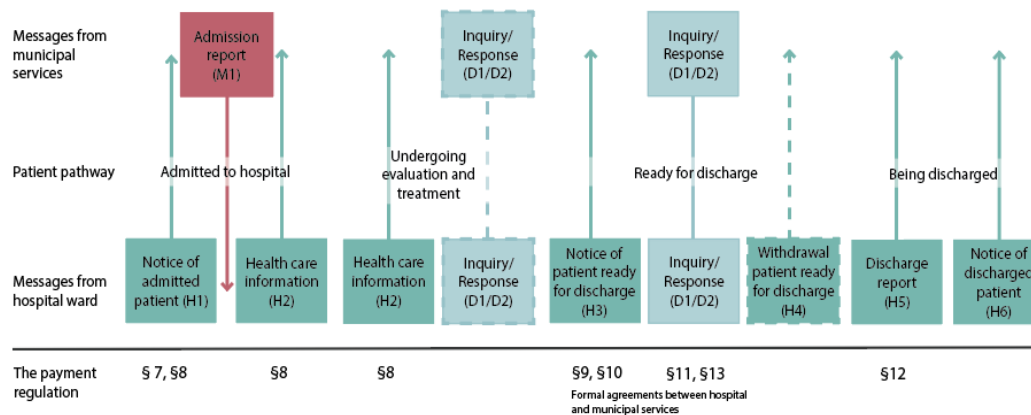


Figure 1: E-messages and regulation along the patient pathway

The study in this paper is part of the authors PhD, and has focused in particular on coordination in collaborative service delivery, as the e-messaging system was highlighted as a key instrument in the 2008 Coordination Reform (The Norwegian Ministry of Health and Care Services, 2008). The reform was initiated due to problems with working together across levels of care (hospital and municipal services). Different cultures, traditions, and opposing interpretations of what care to provide for a patient made it difficult for hospitals and municipal services to cooperate (e.g. Hellesø et al., 2004). Such issues often led to unintended consequences for the patient, often caught in the middle. Figure 1 also gives an overview of e-messaging as part of the service delivery between hospitals and municipal services. It also includes a “Payment Regulation”, implemented as part of the Coordination Reform. Different paragraphs of this regulation came into effect with/was enacted by different messages.

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The study has 135 respondents from hospitals, municipalities, suppliers and government agencies. It includes 48 semi-structured interviews (recorded and transcribed), approximately 250 hours of participatory observation, two workshops and the analysis of 31 public documents. The material was coded using the software NVivo, and written into a narrative which formed the basis for the conceptual analysis inspired by Actor-Network Theory (ANT) (e.g. Latour, 2005). This short work-in-progress paper gives some examples from the analysis.

This processual study (Langley, 1999), focuses on three interrelated “events” in time (the past, the present and the future) to explore accountabilities and consequences beyond the design project (Almquist, 2017; Kimbell & Blomberg, 2017; Overkamp & Holmlid, 2016). Table 1 summarizes methods related to each event. The first event focuses on the policy-development process, and the development and implementation of e-messaging between “the Hospital” and municipality A and B in 2013<sup>1</sup> (past). In the second event, we explore the messages in inter-organizational collaborative service delivery (present). The last event is a local re-design initiative focused on the future. Please note that in the findings section below, I present the events in the order of present, past, future.

		Past	Present	Future
<b>Methods</b>	Document analysis			
	Interviews			
	Observation			
	Workshop			

Table 1: Methods related to each event in the study

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1 This is a national system, but this study focuses on “the Hospital”, “municipality A” and “municipality B”.

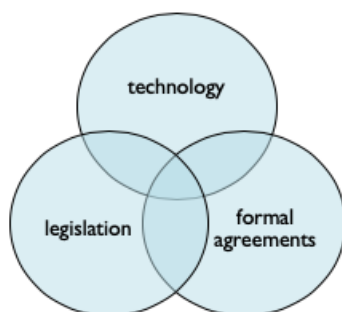
## Emergent findings: agencies from the past and present

Based on the insight from the overall processual study, I provide three examples of non-human agency. I relate these emergent findings to current knowledge on designing for service.

### Intertwined agencies in the present

In 2013, 17 years after the idea of e-messages was born, a system was implemented in service delivery between “the Hospital” and municipality A and B. Soon, users experienced multiple challenges to collaboration and coordination. First, the standardized interface had few cues, making it difficult to know what to include in the communication. Nurses at the hospital did not know what nurses in the municipal services needed to know and vice versa. Second, the payment regulation and formal agreements required them to communicate certain information at specific times in the pathway – not always complementary to local routines or ways of operating. Third, the payment regulation’s delegation of responsibility, enacted by the sending of certain messages, sparked arguments and “workarounds”. Forth, a financial penalty related to the payment regulation caused arguments over issues about accountability.

Multiple actors were co-designing service delivery: users, legislation (the payment regulation), formal agreements between hospitals and municipalities, and the e-messages as standardized ICT. This sociomaterial configuration “locked in” certain patterns of collaboration between the Hospital and its municipalities, and the emergent effects were often negative: the exact opposite to what one was aiming for in the Coordination Reform. Figure 2 summarizes some of the non-humans actors at work as “technolegislative agency”: conceptualizing how non-humans might influence service delivery, and the power they might have in sociomaterial configurations (Kimbell & Blomberg, 2017). However, why was the system like this in the first place? Can we simply refer to it as “terrible design”? Can we even describe design as such?



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Figure 2: Non-human agencies in service delivery: technolegislative agency

### Agencies of the past

Lack of coordination between levels of care means information does not follow the patient, and the patient or dependents are left to bridge the resulting information gap – if possible.

Coordination had been on the policy agenda since the first health care ICT strategy published in 1996 (The Norwegian Department of Health and Care Services, 1996). In the period 1996-2008, e-messages were continuously highlighted in Norwegian health care policy as the best solution to the “wicked problem” of coordination: reflected in the aims, measures and priorities set. Indeed, “coordination by e-messaging” became a powerful agenda-setting actor speaking for the issue of coordination, enrolling developments in organizing, technology, architecture and legislation. See Figure 3 for a simple visualization.

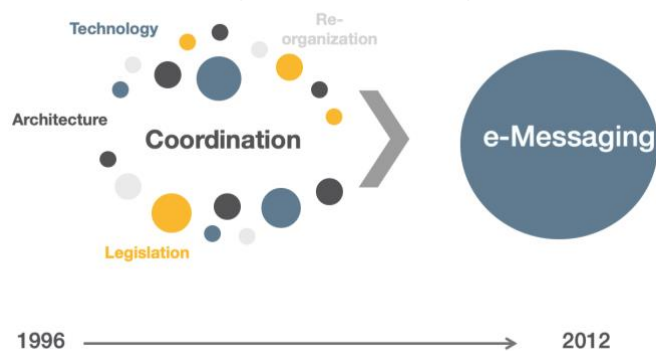


Figure 3: e-messaging as solution to e-messaging, enrolling other actors

Between the years 2005-2012, several continuous public innovation projects developed national standards, architecture, methods and legislation focused on e-messaging. When design professionals (ICT-suppliers) finally made their solutions close to the date of implementation, they had to utilize the previously-developed standards, legislation and frameworks.

These findings are in line with the insight that services “begin” with policy making, and that all those who seek to design services should have a conscious relationship to the role of policy (Buchanan et al., 2017;

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Junginger, 2013). However, it also provides insights into the role of non-humans as co-designers over time, specifically as powerful “agenda-setters”, enrolling other actors. When design professionals entered the process, standards and regulations were indeed as – or more – powerful in designing e-messaging: enrolling designers into *their* network, rather than the other way around.

### Agencies for the future: barriers to change

The first part of this section of the paper introduced the challenges which emerged in service delivery, and as a result the Hospital initiated a local re-design project. However, at this point, e-messages were no longer assumed to be the best solution to coordination between levels of care: a new policy document from 2012 argued that they might even be part of the problem, and that *access to* should be prioritized over the *exchange of* information (The Norwegian Department of Health and Care Services, 2012). It was then difficult to get national support to change e-messages, and re-design had to be “squeezed in between” restrictions set by existing standards, legislation, the existing interface and local information security measures.

However, the technology was not the only part of the service delivery. There was some leeway in “the social” (Baek et al., 2018) meaning local routines, as well as non-digital aids/tools such as paper lists. Figure 4 below illustrates some of the possibilities and restrictions in service delivery as local sociomaterial practice at the Hospital.

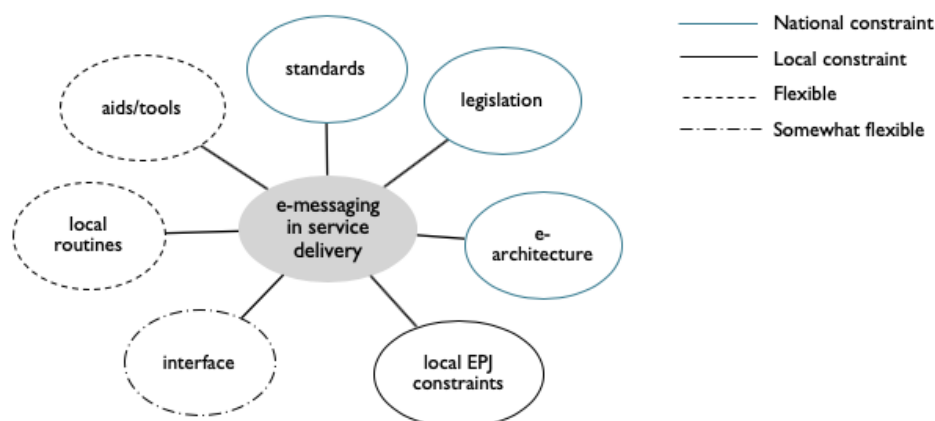


Figure 4: E-messaging as a solution to e-messaging

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A new solution which exploited the flexibilities of service delivery was implemented at the Hospital in 2017. However, it was not like any of the creative and ambitious solutions suggested by users in co-design workshops. Aspects of the existing technology, standards and regulations formed barriers to re-design outside the mandate of local users. Changing standards and regulations would require support at a national level and would take years (Manzini, 2014a). The new solution was a small hospital-wide technological “fix” within the existing standards and regulations. It was to be complimented by a small paper list, but this was never really used in practice. In many ways, this exemplifies how there are accountabilities far beyond a (re-)design project, related to larger political priorities as well as policy-development processes (Kimbell & Blomberg, 2017).

## **Emerging conclusions**

In this short work-in-progress paper, I explore how applying a processual approach and objectivist strands of STS might bring to the fore new accountabilities and new temporalities as suggested by Kimbell and Blomberg (2017). I found that non-humans such as policy ideas, instruments such as regulation and ICT indeed had the capacity to influence the design, practice and re-design of public service delivery.

This might be useful when attempting to conceptualize the relationship between policy, service delivery and design – and might help explain why so many innovations fail, or spark unexpected consequences in the Norwegian public sector (The Norwegian Department of Health and Care Services, 2012; The Office of the Auditor General, 2015). This is in line with Junginger’s (2013) critique of the divide between the realm of policy and design, and an argument for designers to familiarize themselves with this dynamic – to avoid becoming the ICT-suppliers in this study.

This work-in-progress paper has two main emerging implications for conceptualizing designing for service. The first is that non-humans have the capabilities to co-design service delivery in practice and influence its design and re-design. Second, non-humans should not be equated with the material/technological– there are many “shades” of agency indicated by Latour (1996): non-humans such as policy ideas might also enroll actors into its network. Third, this invites us (again), to look beyond the immediate design project – to what happens in practice after design

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(Kimbell, 2009), but also what leads up to it (past) and the initiatives that might follow (future). Indeed, this paper suggests the value of a processual approach to designing as part of larger developments, mapping influences over time and space.

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