Strategizing Communication and Artificial Intelligence

PROJECT DESCRIPTION

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INTRODUCTION & RESEARCH QUESTION

Artificial intelligence (AI) are becoming integral to organizational strategy-practices and, hence, to society. As organizations progressively employ "computational agents that act intelligently" (Poole & Mackworth, 2017: 3) to make vital decisions regarding their operations, society becomes shaped by the judgements of intelligent machines. From The Washington Post's use of AI to cover the 2020 US elections to Norrtälje Municipality's use of AI to pre-assess child abuse cases.

The augmented integration of AI is particularly observable in organizations' strategizing of communication. That is, in strategy-practices that incorporate artificially intelligent communication technology (AICT) in the planning, execution and monitoring of an organization's purposeful use of communication to fulfil its mission (Edwards, 2012; Hallahan et al., 2007). The airline KLM, for example, use AICT to perform automated and personalized 24/7 customer service; the public relations company Omnicom Media Group, utilise AICT to monitor employees' communication work; and, rather infamously, the now-defunct consulting firm Cambridge Analytica, employed AICT to design political campaigns.

The society-level challenges and risks of increased AICT adoption have been highlighted in a number of recent publications (e.g., Araujo et al., 2020; Flyverbom, 2019; Kaun, 2020; Noble, 2018). However, there is sparse knowledge available on the occupational challenges and ethical risks that AICTs pose for professional communicators – the people employed to manage and perform the strategizing of communication. Given the novelty of these developments, the lack of research is not surprising, but attending to it is all the more urgent, as professional communicators' new AICT-assisted strategy-practices are fast becoming organizational routines with significant social, economic, and political impact.

The research project *Strategizing Communication and Artificial Intelligence* (SCAI) addresses this knowledge gap by asking: **How are artificially intelligent communication technologies influencing professional communicators' strategy-practices?**

By tackling this specific issue, SCAI contributes with innovative research concerning a fundamental theme within the social sciences and humanities; namely, how to conceptualize the relationship between humans and machines. In particular, how intelligent computing affect human agency in relation to professional discretion and ethical judgement. Here, professional communicators constitute a 'most likely critical case' (Flyvbjerg, 2006) because changes in communication technologies affect their profession first and most deeply, as has been the case historically when e.g., the invention of the printing press led to the development of professional journalism and the rise of mass production led to the development of marketing (Peters, 1999). Following this logic, professional communicators are most likely to be influenced by artificially intelligent communication technology and studying their strategy-practices hence provide insights that are relevant to other professional settings as well as to people's non-professional communicative practices.

In order to tackle this issue, SCAI is structured around five interrelated sub-questions:

1) How is management articulating their visions, expectations, and concerns to AICT developers?
2) How are AICT developers translating management's visions, expectations, and concerns into concrete AI systems design?
3) How are employees utilising AICT in concrete strategy-work?
4) How are employees inscribing AICT in larger processes of strategizing?
5) How is management governing AICT integration with employees' strategy-practices?

The first two focus on AICT 'innovation trajectories' (Oborn et al., 2019) - the creative process of designing and developing AI systems. The latter three focus on professional communicators' use and operationalisation of AICT. By studying technology development as well as technology use, the project offers a detailed understanding of the impact of AICT integration. In particular, by addressing why, how and by whom AICTs are designed enables us, the project team, to tackle the 'black box issue' (Davenport & Ronanki, 2018); i.e., understand why the AI systems produce the outcomes they do. The sub-questions speaks to the distinct actors and processes involved in AICT integration: The actors who decide, initiate, and manage AICT development and integration processes (here referred to as management); the actors who design, develop and program AICT (developers); and the actors whose strategy-practices are influence by AICT (employees).

STATE OF THE ART

The concept of AI, or AI systems, was first introduced in the 1950s (Duan et al., 2019) and has experienced ups and downs in terms of industry and academic attention (also called 'AI springs' and 'AI winters') (von Krogh, 2018). Since the dot-com bubble burst in the early 2000s, however, there has been an exponential growth in AI adoption – growth that in large part has been fuelled by significant advancements in the underlying technology, as well as an increase in open-source AI, such as Amazon's ASK CLI and the Microsoft Cognitive Toolkit.

As AI have become more readily available to organizations and have gained the ability to refine themselves by learning from the data they encounter (Mahnke & Uprichard, 2014), they increasingly take on organizational capacities (Faraj et al., 2018), in particularly when integrated with information and communication technology (AICT) (Zammuto et al., 2007).

One central area of interest is how AICTs affect decision-making (Shrestha et al., 2019), in particular how they can change the way organizational members produce and use evidence in relation to decision-making processes (Kellogg et al., 2020; Newell & Marabelli, 2018). From providing the evidence needed to raise previously intuition-based decisions to 'statistical gold standard' (Bradley, 2019) to replacing human decision-makers in fully automated decision-making systems (Heaton et al., 2017).

Another area of interest is how AICTs produce "the possibility of modifying the behaviors of persons and things for profit and control" (Zuboff, 2015: 85), e.g., how they can limit the possibilities for action available to organizational members as well as reduce their professional discretion (Ananny, 2016; Curchod et al., 2019; Orlikowski & Scott, 2014), forcing human agents to alter their practices, or 'game' their behaviour in order to accommodate the rules of the technology (Bader & Kaiser, 2019). Similarly, studies have shown how AICTs are used to control and/or monitor employees (Brougham & Haar, 2018; Landay, 2019), emphasizing how the biases of human coders and available data are inscribed in and reinforced through automated procedures for populational profiling, risk assessment and the like (e.g., O'Neill, 2016).

In terms of organizations' strategizing of communication, generally, and professional communicators' strategy-practices, more particularly, scholars have addressed the influence of AICTs in relation to communication activities such as customer interaction (Dawar & Bendle, 2018; Dimitrieska et al., 2018), monitoring and analytics (Galloway & Swiatek, 2018; Wiesenberg et al., 2017), marketing (De Bruyn, 2020; Kose & Sert, 2017; Wirth, 2018), public relations (Collister, 2018; Just & Rasmussen, 2019) as well as communication management (Westermann & Forthmann, 2020; Wiesenberg & Tench, 2020). But, as Zerfass et al. (2020) point out, there is a need for more studies that "dig deeper both theoretically and empirically by broadening the perspective on possible challenges and risks, incorporating more variables, and linking them with data on the actual use of the technology" (2020: 13). Jones (2019) and Duan et al. (2019) provide similar diagnoses, calling for more research on the use of AICT and the degree of agency that people have in relation to it. The research project *Strategizing Communication and Artificial Intelligence* aims to answer those calls.

THEORETICAL FRAMEWORK

SCAI takes its theoretical point of departure in the strategy-as-practice literature (Jarzabkowski & Spee, 2009; Kornberger & Clegg, 2011; Whittington, 2014), which integrates practice theory (Reckwitz, 2002), structuration theory (Giddens, 1984) and science and technology studies (MacKenzie & Wajcman, 1999). The strategy-as-practice perspective foregrounds how strategy is something organizations do – they strategize – and how that doing involves both human and non-human actors (e.g., AICT).

The approach has been further developed by communication scholars (Cooren, 2020) who apply a "processual understanding of the 'practice turn'" (Mackay et al., 2020: 26) in order to forward the study of processes of strategizing communication (Gulbrandsen, 2019; Gulbrandsen & Just, 2020; King, 2009). Such processes of strategizing communication are conditioned by decision-making processes involving both human and non-human actors: they are constituted by the relations of a network of actors (assemblage), which are enabled and constrained by possibilities for action (affordances) and realized in concrete instances of action (agency) (Gulbrandsen & Just, 2016).

For the SCAI project team, this means that when investigating how AICTs influence professional communicators' strategy-practices, we must account for not only the outcome, but also the agential relations and particular actions of those involved in creating that outcome (Seaver, 2017). We must pay attention to the macro, meso and micro processes of strategizing (Whittington, 2006): At the macro level, we need to consider which actors (both human and non-human) are involved in the design, development, operationalization and governance of AICTs; at the meso level, we need to consider which potentials for design, development, operationalization and governance the combination of those actors afford; and at the micro level, we need to consider which concrete actions related to the development, design, operationalization and governance of AICTs those actors actually realise.

The framework affords an apt approach to studying the effects of artificially intelligent communication technologies as "contingent on the in-betweenness of a plethora of actors, both human and non-human" (Roberge & Seyfert, 2016: 2) and serve as the foundational principles for the project's development of a theory of strategizing AICT.

METHODOLOGICAL APPROACH & RESEARCH DESIGN

Methodologically, the project is informed by organizational ethnography (Ybema et al., 2009), as this allows us to generate and collect data on the fine-grained sociomaterial interactions that constitute strategy-practices. By being 'at the scene', the project gains a better understanding of informants' lived realities and how these realities connect to 'panoramic processes' (Hernes, 2014) – that is, we gain access to a multivocality of experiences and interpretations, where tensions and discrepancies can surface, and often-concealed dimensions of power and emotions become visible. With this approach, SCAI seeks to heed the strategy-as-practice literature's call for attention to how micro-actions and macro-structures entangle in strategizing (Johnson et al., 2007). By taking a 'long presence view' (Kim et al., 2019), the project investigates how the influence of AICTs on professional communicators' strategy-practices emerges and is established over time, an approach that resonates with recent research on strategic coherence (Lusiani & Langley, 2019).

The field work takes place in collaboration with SCAI's primary industry partners:

- 2021.AI
- The Danish Chamber of Commerce
- K1 Kommunikationsforening

Subprojects

In order to answer the research question (see page 2) and reap the benefits of the methodological approach, SCAI is divided into five subprojects that correspond directly to the stated sub-questions (see page 3).

Subproject 1: Articulating AICT visions

Subproject 1 investigates how management articulates visions, expectations, and concerns about the AICT they want developed and how these articulations are negotiated during interactions with AICT developers. As such, the project focuses on how actors 'do things with words' (Austin, 1962; Lockwood et al., 2019) when they seek to define the purpose and functionality of future technologies. Following previous research, which highlights how processes of articulating visions and concerns are marked by pluralism and polyphony (Ashcraft et al., 2009; Whittle & Mueller, 2010) and driven by emotional energy (Augustine et al., 2019) that may translate into (a lack of) confidence and strategic (dis)engagement (James, 2011), this project unpacks the role of managerial aspirations on AICT development processes.

Subproject 2: Translating AICT visions

Subproject 2 investigates how developers transfer the visions, expectations, and concerns of management into concrete AICT systems design. The subproject aims to understand how designers and developers translate (Callon, 1984) abstract visions, imaginations, ideas, and mental models to computational intelligence that subsequently influences the strategy-practices of professional communicators. By investigating the agency of designers and programmers (Klinger & Svensson, 2018), the project provides in-depth knowledge of the underlying dynamics that constitute AICTs, including how biases of human coders are inscribed in and reinforced through the technology.

Subproject 3: Utilising AICT in strategy-work

Subproject 3 investigates how employees, tasked with strategizing an organization's communication, utilise AICT – that is, how they interact with and employ the technology in concrete instances of strategy-work. This provides insights into how AICTs are employed in work situations and disclose why some of the technologies' affordances are, or are not, realised. Previous studies show how employees use different features of implemented technologies to achieve specific tasks (Bailey & Leonardi, 2015; Fu et al., 2019) because technology means "different things to different actors" (Law & Callon, 1992: 24). Beginning from the assumption that when one wants to understand the implications of technologies at work, then human-technology interaction is more important than technologies on their own (Bader & Kaiser, 2019: 667), this project aims to uncover how professional communicators experience and interrelate with the human and machine-like attributes of the technology (Sundar, 2008).

Subproject 4: Inscribing AICT in strategizing processes

Subproject 4 focuses on how employees inscribe AICT in processes of strategizing communication. Since AICTs do not exist in isolation but are part and parcel of a bundle of professional communication activities that shape strategizing in contemporary organization (Zerfass et al., 2020), their organizational existence and significance

is a matter of degree (Peirce, 1893/1998). Specifically, this project investigates the materialization of artificially intelligent communication technology by focusing on what matters or 'counts' (Cooren et al., 2015) when employees strategize. This involves a focus on how AICTs are made present - described, referred to and enacted – in documents, discussions, and various communication activities.

Subproject 5: Governing AICT integration
Subproject 5 focuses on how management seeks to govern AICT integration. Given that senior managers' attitudes towards and knowledge of AI are critical for the success of AI adoption (Ransbotham et al., 2018), this project investigates how management discourse shapes the implementation of AICTs in professional communicators' strategy-practices (e.g., Carlson, 2015). With empirical grounding in observations of staff meetings, formal interviews with managers as well as strategy documents and management communication pertaining to AICTs, the project builds knowledge on how managers envision and support human-machine strategy-work, including how they seek to develop employees' 'fusion skills' (Wilson & Daugherty, 2018).

Though the subprojects are distinct, they are also closely integrated, as they share the same theoretical, methodological, and empirical starting point and each deal with an important aspect of the shared research question: From the articulation of goals and intentions through their translation into tangible technology to how this technology is operationalized in concrete strategy-work, integrated with other communication activities and managed.

PROJECT MANAGEMENT & ADVISORY BOARD

The SCAI project is led by Associate Professor Ib T. Gulbrandsen, who is recognized for his work on strategizing communication (see e.g., Gulbrandsen, 2019; Gulbrandsen & Just, 2016; Gulbrandsen et al., 2020). Ib is joined by Associate Professor Martina S. Mahnke, as well as two Postdocs and one PhD Fellow.

The project's advisory board has the following members:

- Anne Kaun, Professor, Södertörn University
- Christoffer Lehmann, Head of Digital Communication, Danish Chamber of Commerce
- Claes de Vreese, Professor, University of Amsterdam
- Karen Lee Ashcraft, Professor, University of Colorado, Boulder
- Katrine Louise Ninn-Grønne, Chair, K1 Kommunikationsforening
- Lee Edwards, Professor, London School of Economics and Political Science
- Martin Kornberger, Professor, Vienna University of Economics and Business
- Mikkel Flyverbom, Professor, Copenhagen Business School
- Rasmus Hauch, Chief Technology Officer, 2021.AI
- Sine Nørholm Just, Professor, Roskilde University

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