Share It — A New Paradigm for Interactions with Intelligent Cognitive Assistants

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ABSTRACT

This research project tests Shared Decision Making (SDM) as a new work-psychological paradigm for interactions between humans and Intelligent Cognitive Assistants (ICAs) in decision-making processes. The increasing interplay between employees and AI demonstrates a need for a new principal approach that incorporates specific and promising steps to create a master design of Human-Computer-Interactions (HCIs) in decision-making contexts.

CCS CONCEPTS & KEYWORDS

- **Human-centered computing → Empirical studies in HCI**
- **HCI, ICAs, knowledge worker, shared decision making**

1 INTRODUCTION

The broad scope of interests in artificial intelligence points to its conclusive underlying significance as the automation of decision-making. This topic most notably includes Intelligent Cognitive Assistants (ICAs), which offer guidance and provide support for cognitive tasks (i.e. cognitive workload and biases). An implementation of ICAs at the knowledge workplace could qualitatively revolutionize cross-cutting issues (e.g. organization of and within teams). Increasing the productivity of knowledge workers has been recognized as one of the most important management functions in the 21st-century [1]. The goal is to design the interaction between human and ICA to a degree where decision-making processes achieve optimal results. Shared Decision Making (SDM) stems from the medical field and outlines a method to improve decision-making amongst patients and doctors (see Figure 1). It has shown to positively influence important factors [3, 4]. While SDM is a method used in the clinician-patient context, we will look at the HCI and the desirable role SDM can have in this new context. Hence, we postulate SDM as a step-wise framework for ICAs in order to empower its application by meeting engineering needs of providing specific interaction patterns.

2 METHODS

To classify the specific demands of knowledge workers for ICAs, we assess routine decision processes (examining psychological job design and inconvenient characteristics of decision situations via an online questionnaire), followed by a detailed analysis of the decision structure (a qualitative task analysis with a participatory software development approach accomplished through the SeeMe method). These will constitute the two exploratory pre-studies. Following, the effects of SDM as a paradigm for HCIs will be experimentally tested with the help of a Wizard-of-Oz setting. This will be a laboratory study with randomized control trials that is constructed as a between-subject design and utilizes one factor: SDM support or no support. Individual decision quality and subjective consequences of the SDM implementation in ICAs are of evaluative importance.

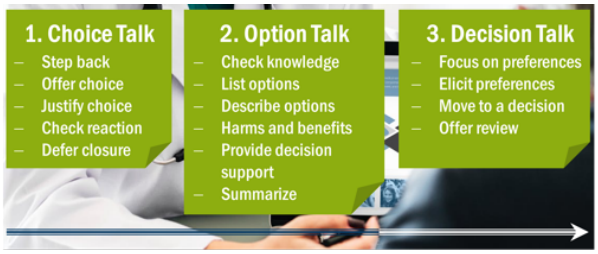

Figure 1: A three step model to achieve SDM [2]

3 CONCLUSION AND FUTURE WORK

In the HCI context, we suggest SDM as a methodology to design the ICA due to its contribution to the individual's decision-making processes (see Figure 2). To begin with, our current studies must initially verify our suggestion.

Figure 2: SDM for ICAs and implicated results

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