POPULAR-SCIENTIFIC ABSTRACT

Artificial Intelligence is classified as a general purpose technology (GPT). This is the label used to describe technologies, such as the steam engine or the Internet, that have a significant, broad, lasting, and widespread impact on society and the economy. Such technologies can also generate numerous more specialized complementary innovations and other technologies.

Looking at the current development of artificial intelligence and its potential application of many sectors of the economy (from logistics to education to law to sales or medicine), there is no doubt that the growing use of automation and AI-based software will have a social and economic impact on organizations as well as on the labor market as a whole. The current debate about how artificial intelligence will affect the labor market is very vivid. There is a lot of concern that artificial intelligence algorithms will gradually displace workers from the labor market. It is true that robots and programs perform some tasks in which they are specialized, 24/7. It is mostly (but not only and not always) about performing repetitive tasks. On the other hand, as a recent study by IBM shows, developing artificial intelligence also allows for the creation of new jobs. Similar are the conclusions of a report presented by the World Economic Forum[1], according to which robots will help create almost twice as many jobs as they will take away.

This research project focuses on the introduction of artificial intelligence into business (and more specifically into marketing efforts). Artificial intelligence is not meant to replace human work, but to support it, making it more effective and satisfying. In this project we are investigating the concept and practical applications of so-called virtual assistants based on artificial intelligence. This will be a whole complex of qualitative research and experiments (including the use of sensors to capture the emotional state of participants), whose main goal is to shed new light on the various dimensions of human-machine collaboration in knowledge-based work environments. The following key activities are planned under this grant proposal:

1) Designing and development of a functional virtual assistant (we will use a state-of-the-art text generator based on deep neural networks, namely GPT-3)
2) Qualitative research: in-depth semi-structured interviews on the perception of human-AI collaboration at work
3) Quantitative study I: experiment verifying the impact of human-AI collaboration on productivity in tasks related to leading and creating marketing campaigns
4) Quantitative study II: replicating the experiment in the lab using psychophysiological measures, i.e., sensors to better understand subjects' emotions.

The research question is how the respondents perceive artificial intelligence in their work and what features of AI would be necessary for it to create synergies with employees.

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[1] https://www.weforum.org/agenda/2020/10/dont-fear-ai-it-will-lead-to-long-term-job-growth/