

What users want – research on workers, employers and caregivers demands on SmartWork AI system

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Introduction

SmartWork, ‘Smart Age-Friendly Living and Working Environment’, is a European project addressing a key challenge facing today’s older generation, as they are living and working longer than their predecessors: the design and realisation of age-friendly living and working spaces. The SmartWork system will be comprised of a suite of smart services to support office workers aged 55+, delivering benefits for the workers, their employers and carers. The system will use Artificial Intelligence (AI) to unobtrusively and pervasively monitor workers’ health, behaviour, cognitive and emotional status. Through work ability modelling, it will respond to their needs by, e.g., identifying personalised training support for the employee to learn new skills, suggesting flexible working practices to maintain a work/life balance, while the monitoring data will enable the employee to self-manage chronic health conditions.

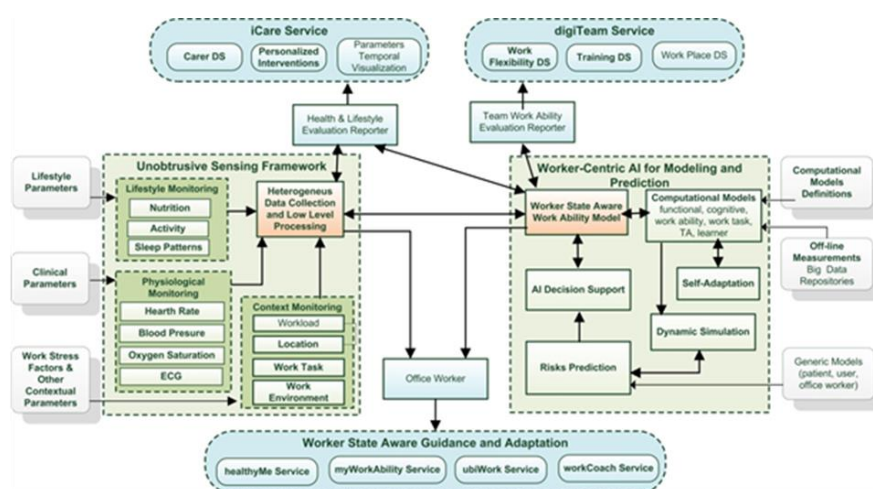


Figure 1: Concept SmartWork AI system

Research on user requirements

The SmartWork system will be tested in Portugal and Denmark in several pilots in office environments. To develop the system, we performed a desk study and end-user consultation among Portuguese and Danish older office workers, employers/managers and caregivers of older workers in order to define the user needs.

Online questionnaires in English, Danish and Portuguese language were used to learn more about work and preferences from the engaged stakeholders. From Aarhus Municipality (Denmark) 49 office workers participated, from Cáritas Coimbra (Portugal) 50 office workers from the appropriate age-group responded. Their results were compared with the 60 respondents from several other European countries, mainly The Netherlands, Greece and Finland. Next to the employees, 12 Portuguese and 10 Danish employers/managers filled in the questionnaire. From both countries 10 caregivers each participated.

Consulted on their preferences for the SmartWork AI system, older workers most value as useful or very useful an application that informs on meetings and events, provides guidance, reminds on appointments, provide training contents, transfers work between devices and manages or organises the work. From the European questionnaire most preferable feature would be to have a device that automatically chooses individual settings. Not very useful or not useful at all for the Danish and Portuguese employees consulted, are applications that check the health status every minute, every day or every week. Also, they don't find interesting if this system provides company, reports about the working time at the computer or informs the boss on the performances. The SmartWork system should preferably become available on a smartphone or on desktop/laptop. The most preferred interaction should be by keyboard, touch screen, sensor, speech or pictograms.

Regarding the preferred functionalities of the SmartWork system, Danish employers show quite opposite meanings compared with their Portuguese colleagues. Where Portuguese employers would like to have a system (from most favourite to least) that supports on the fly work practice, identifies training needs, identifies needs for workplace adaptations, supports with optimal employee pairing, reports health and condition of the worker and reports on progress, the majority of Danish employers finds these functionalities not very useful or not useful at all. Danish caregivers however, were more positive on SmartWork assets referring their higher preference for a system that provides information on health risks and monitors the status of the worker they care for.

SmartWork will be piloted in Portugal and Denmark for about 20 months with 72 older office workers, managers and caregivers. Results are expected early 2022.

References

SmartWork, D2.2 - First version of co-design methodology, user requirements and use cases, 2019, GA 826343 (H2020-SC1-DTH-2018-1), www.smartworkproject.eu