

# Internet of Things & Personalized Healthcare

Floor SIEVERINK<sup>a,1</sup>, Liseth SIEMONS<sup>a</sup>, Annemarie BRAAKMAN-JANSEN<sup>a</sup>, and Lisette VAN GEMERT-PIJNEN<sup>a</sup>

<sup>a</sup> *Centre for eHealth and Wellbeing Research, Department of Psychology, Health & Technology, University of Twente, Enschede, the Netherlands*

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The rapid and ongoing digitalization of society leads to an exponential growth of both structured and unstructured data from Internet of Things (IoT) wearable's. This wealth of data opens the door towards the development of automated and personalized real-time feedback systems. However, aren't there any restrictions when using this data as input for data-driven feedback systems? If this is not the case from a technological or semantic point of view, what happens from the ethical perspective? Can we simply collect and connect all the data provided by wearable's and patient health records without questioning, in order to increase the match between the applications, its users and context of use?

Information about IoT usage provides new knowledge about how large and unstructured data sets can be used to improve the usability and persuasiveness of technologies and to personalize the coaching of patients. Current findings in research indicate there is a gap between collecting data and "interpreting and translating" this large data sets into user-friendly, safe, unobtrusive and sense-making feedbacks for patients. To estimate the relevance of the outcomes of data-analysis, a better understanding is needed of models that drive the algorithms to analyze big data.

To better understand the implications of the IoT for our healthcare systems, we conducted a focus group meeting. In this meeting, we investigated the vision, experiences and future ideas of six big data experts from six different scientific disciplines (psychology, philosophy, computer science, business administration, law, and data science) regarding factors that are crucial for using IoT data to support healthcare. We used the 5V model for defining big data as a theoretical framework to categorize the results and to get a multifaceted picture of how to analyze, interpret, and visualize large and complex datasets in an effective, efficient, secure and safe way.

The experts raised several topics that were arranged in six distinct overall categories: people-driven values, empowerment, profiling, technical infrastructures, and scientific and societal implications. The poster will present a more in-depth overview of the results of the focus group meeting. The findings of these studies will be used to design real-time, accurate, persuasive and personalized feedback systems.

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<sup>1</sup> Corresponding Author