



WITH-ME - helping overweight people lose weight through a digital coaching platform

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Building a digital coaching platform to help overweight people with a high cardiovascular risk lose weight and acquire and maintain a healthier lifestyle: this was the goal of WITH-ME. Sirris's main contributions in this project were related to the extraction of relevant information from subjective and objective data.

Ready2Improve, Remedus, BioRICS, Human Interface Group and Sirris joined forces in WITH-ME, an ARTEMIS/ECSEL R&D project, involving 19 companies and research institutions from four European countries (Denmark, Finland, Spain and Belgium), which finished in September 2016.

WITH-ME aimed to provide a digital coaching platform that continuously monitors, advises and interacts with users to help them acquire and maintain a healthier lifestyle. This was achieved through using a combination of embedded devices including multi-purpose consumer electronics (e.g. mobile phones, computers) and dedicated health equipment for personal or shared use (e.g. heart rate monitors, activity trackers, exercise equipment, blood pressure meters).

This digital coaching platform was tested through four pilots with the following objectives: managing stress in an occupational health care setting, providing family coaching to parents expecting their first baby, supporting cardiovascular rehabilitation after a stroke, and helping overweight people

with a cardiovascular risk to reduce weight (on which the Belgian partners focused).

Combination of face-to-face and online coaching

Contrary to most existing solutions - where limited forms of coaching (when available) are done in an automated way by algorithms, which are to a great extent unaware of the particularities of its users - the platform designed by the Belgian partners aims to combine both face-to-face and online coaching by professional coaches. To this end, it is composed of two parts:

- On the one hand, coaches are provided with an app through which they can assign objectives to the overweight people they are coaching (the "coachees"), follow up their evolution and communicate with them in order to send them motivating messages or schedule a face-to-face meeting, for example.
- On the other hand, coachees are provided with a smartphone app that keeps track of how active they are, and through which they can introduce information related to the number of glasses of water they drink or the number of pieces of fruit they eat, see their own progress with respect to the objectives set by their coach and communicate with this coach. Coachees are also provided with a heart rate monitor that captures the intensity of the physical activities they perform based on the coach's suggestions (and that transmits this data to the platform via the smartphone).

Results

Sirris's main contributions in this project were related to the extraction of relevant information from both subjective data directly provided by coaches and coachees and objective data provided by sensors, and resulted in the development of:

- A conceptual semantic framework for user profiling in the form of, on the one hand, an ontology modeling selected user parameters (such as physical properties, life style habits and social, professional and motivational characteristics) and their relationships, and of, on the other hand, a reasoning engine and a set of rules capturing domain knowledge for extracting additional information.
- Algorithmic building blocks and techniques for deriving daily habits and patterns from users' activity data, for predicting user activity also from users' activity data, for recommending objectives that a coach could assign to a coachee based on historical data, and for warning coachees that a given objective will not be met unless action is taken (when it can be predicted that such a situation will happen).

Being able to provide relevant insights based on the data you collect or possess is as important as any other aspect of a product or solution and goes hand in hand with providing a usable and useful piece of technology.

Feel free to contact us if you would like to know more about the WITH-ME project or about how Sirris could support you in innovating with your data.

Authors



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