In the context of personal health empowerment, the burden on care workers and patients will decrease as fewer people tend to become ill. Self-management aided by information technology has also been shown to have a direct impact on wider society. For example, with mental health issues costing US businesses an estimated USD 440 million or more per year, preventive care can be an excellent means of reducing these losses by tackling stress, low productivity and absenteeism.

**ADDRESSING THE CHALLENGE**
Current healthcare is reactive and process-driven: people are treated according to predefined pathways with little personalisation. As populations age and non-communicable disease rates rise, this approach becomes inefficient and costly. Although wellness-oriented solutions, such as smartphone apps, have become commonplace, they rarely attract long-term usage due to diminishing interest from users and the lack of capacity to use them in conjunction with clinical health treatments. The next stage is therefore to empower people to self-manage their health and adopt preventive behaviour.

**PROPOSED SOLUTIONS**
Personal Health Empowerment will provide the tools for this, as well as to participate in treatment when issues do arise. The project will develop an adaptive recognition system and algorithms that explore multiple modalities, such as vital signs, respiratory function, activity and behaviour monitoring. At the centre of this is an Intelligent Coaching Engine, which chooses professionally-created coaching programmes in accordance with a user’s aims and available health data. Data measured with wearable and embedded sensors will be analysed using Artificial Intelligence techniques and feedback will be provided with attention to security and privacy. Crucially, Personal Health Empowerment will develop visualisation tools to encourage long-term use. For example, triggers of health status changes can be detected in real-time, causing the system to automatically send a notification to encourage the user to think about their behaviour. Focusing on modality, Personal Health Empowerment will interconnect Personal Health Records (PHRs) provided by the user or doctor to bring together all Electronic Health Records (EHR) containing data about a patient.

**PROJECTED RESULTS AND IMPACT**
Personal Health Empowerment represents a shift towards patient-centric healthcare, directly addressing issues such as the rising dependency ratio and preventable diseases. From a health system perspective, the burden on care workers and on patients themselves will decrease as fewer people tend to become ill. Self-management aided by information technology has also been shown to have a direct impact on wider society. For example, with mental health issues costing US businesses an estimated USD 440 million or more per year, preventive care can be an excellent means of reducing these losses by tackling stress, low productivity and absenteeism.
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Personal Health Empowerment

Project start
January 2018

Project end
December 2020

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