



PREVE

Prevention of Diseases

PREVE project's mission was to analyse and present prerequisites, knowledge foundation, and a coherent "plan of action" for ICT research directions targeting the prevention of diseases and the preservation of health – tailored to the individual citizen.

Objectives of the project

PREVE was a Support Action, funded under the FP7 4th ICT Call, not aiming to the development of actual solutions, but to perform a deep study in the main dimensions that could be of importance for the creation of innovative Personal Health System (PHS) in primary prevention and, as a result, to propose the necessary ICT research directions that would be needed in building efficient and sustainable IT based services for primary prevention.

The issues that were considered in identifying the ICT research directions included:

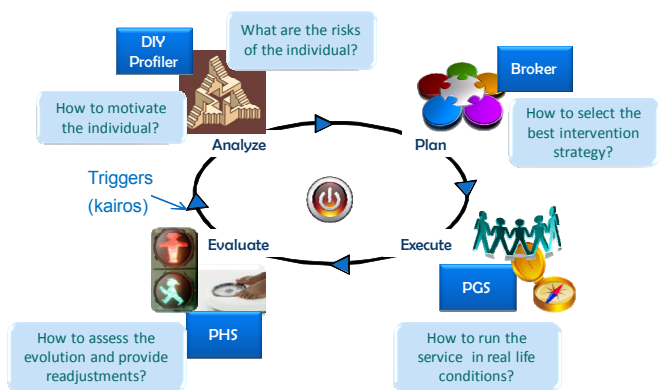
- Prevalence of preventable diseases;
- Best practices for disease prevention;
- User segmenting based on life stages, preferences, behaviour / motivation, clinical risk factors;
- ICT systems used in uncontrolled environments;
- Validation (proof of value); and
- Sustainable business models.

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The lead idea of PREVE was "having the individual as a co-producer of health" and empowering individuals to take responsibility of their health with personalized ICT

enabled PHS technologies and services. Therefore the project paved the way for a health service environment where individuals and health professionals work jointly towards health goals.

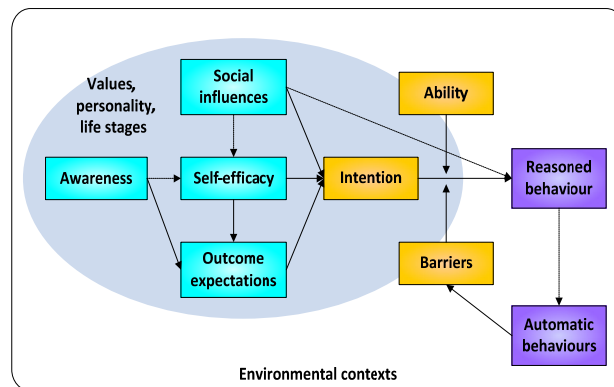
The work was guided by a personalized intervention model that comprises: (a) entry points or opportune moments that provide a window of opportunity for starting prevention actions, (b) a dynamic personal profile based on life stage, behaviour, risk factors etc., (c) a personalized intervention strategy that engages individuals as it guides, enables and motivates them in health management.



Project Description

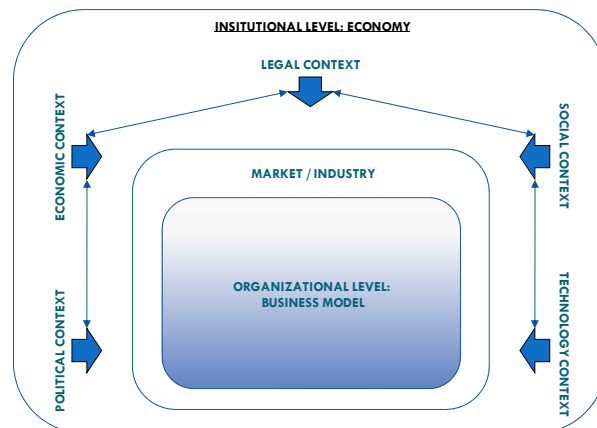
PREVE comprised three phases. In Phase 1 an in-depth analysis of the domain of PHS in prevention was performed. Through this, the most prevalent diseases were selected and analysed for the established best practice in their primary prevention (including lifestyle management and modification). The outcome was a validated 2D matrix of preventable non-communicable diseases – risk factors leading to these diseases.

In Phase 2, personalization needs of the intervention model (e.g. user segmentation by different criteria and motivational issues) were analysed. This included an analysis of the personalization challenge by an in-depth literature study of the constituents of personal profile, issues around motivation and needs of different user segments, such as in different life stages.



Additionally past and ongoing PHS projects and products and service already in the market place were analysed with the intention to learn from their prevention strategies.

In Phase 3 implementation issues were studied, i.e. how the response ability of individuals in disease prevention can be facilitated with ICT. This comprised of an analysis of the business context and ecosystems for ICT supported disease prevention, value network relations between the actors and stakeholders and ways for value creation and validation of value.



Each phase concluded with an open consultation workshop which took place in 2010, in Barcelona, mid-March, in Belfast, mid-June and in Milan, early November.

Results & Impact

The results of PREVE have been condensed into a *White Paper*, which presents the identified ICT research directions in disease prevention, and emphasises the need to approach disease prevention from multiple complementary viewpoints.

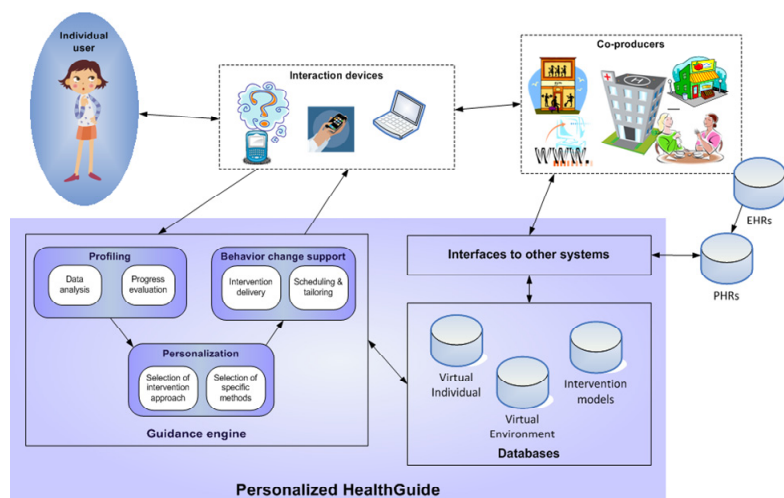
From the *user viewpoint*, the aim is enable citizens to become responsible of their own health and take a more active role in both disease prevention and in disease-management, through the preservation of healthy lifestyle. In this view citizens are in charge of their health and wellbeing and may engage others to assist and support them in this task.

From the *co-producer viewpoint*, the aim is to facilitate the interaction of the users with their respective co-producers. The co-production model is built on the observation that health is co-created by the users in interaction with their environment.

The *environmental viewpoint* defines the resources, the available options and the barriers that influence the citizen's choices and behaviours. This includes also the societal aspects such as health and urban planning policies.

From the *ethical viewpoint*, the Health Outreach ecosystem, in which users and co-producers interact and jointly create health, needs new guidelines and rules on how to protect the consumers and also make certain that the guidance is based on best practices in disease prevention.

From the *ICT viewpoint*, the ensuing ecosystem of users, co-producers and the environmental context of policies etc. could be enabled with Personalized Health Guides (PHGs). These PHGs on one hand have the necessary intelligence to provide personalized guidance to users and on the other are able to act as intermediaries supporting the dialogue with co-producers.



The overall aim of PHGs should be to reduce the clinical risk factors that users may have by enabling improvements in health behaviours. A summary of the guidelines for designing and building ICT supported personalised disease prevention are:

- It is about getting **individuals** to decide **on their own free will** that a lifestyle change is needed.
- It is about **providing from the outside support** to make the change and to maintain the course.
- It is about **creating a supportive environment** for healthy behaviours.
- It is about **orchestrating the interactions** of individuals with their environment (incl. co-producers).
- It is about **setting the rules of the game for the Health Outreach ecosystem** of value networks and value creation.



Project Acronym:

PREVE

Project title:

ICT Research Directions in Disease Prevention

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KEYWORDS

Disease prevention, Clinical risk factors, Chronic diseases and conditions, Behaviour change support, Personal profile, Profiling, Motivation, Opportune moments, Personal Health Systems, Sensors, Context awareness, Personal Health Records, Electronic Health Records, Value creation, Ecosystem, Value networks, Business models