ITEA 2

Project Profile

Empathic
(ITEA 2 ~ 11005)

Empathic – a better user experience
Understanding and responding to user intentions and emotions

The success or failure of applications and services is greatly determined by User Experience (UX). It is no longer sufficient to provide good functionality at a reasonable price; differentiation can only be achieved through a holistic approach that takes account of user values, perception, emotion, context, interaction, etc. that together create the user experience. While careful design for UX has proven beneficial, it is surprising how few efforts have been made to measure and respond to user experience after deploying the application.

Empathic aims to achieve better user experience by applying affective computing technologies to understand and respond to user intentions and emotions, starting with a definition of scenarios and use cases for empathic applications in selected domains and taking account of value co-creation and business opportunities. It will simultaneously develop and package affective technologies for intention and emotion recognition and empathic interaction, validating their functionality and applicability with real users.

Making software intensive products empathic requires a new arsenal of affective technologies currently predominantly in the research domain. Harnessing these technologies to become easy-to-integrate, validated and well-documented components for existing and future products is crucial for integrating them into main stream software intensive products.

An empathic product design methodology addressing user needs and business potential will also facilitate their rapid adoption. Utilising the resulting toolbox of empathic technologies, Empathic will produce a variety of proofs-of-concept of enhanced existing applications and new products to showcase, evaluate and

validate the feasibility of the empathic products with end users. Finally best practices will be combined with the lessons learnt from the design and implementation of empathic products to define a methodology for empathic product design and analyse business models suitable for these products.

RELEVANT DOMAINS

Empathic products by definition focus on people, either a single user (me) or a group. The Empathic product design methodology aims to make future products more aware of their user's intentions and emotions while intelligent interaction technologies will capture the intentions and emotions of people in semantic structures, drawing on research in context awareness, affective computing and multimodal interaction so that appropriate interaction with possible emotional or supportive feedback is acquired.

This methodology will affect the engineering of future products and an inherent aspect of the research is the cross-over between user research, psychology and business development. So the landscape of Empathic is broad and only limited by its focus on people.

■ Partners

Alcatel Lucent Bell Labs France	Lille 1 University
CityPassenger	Lingsoft
CLB BV	Maidis
Creation crew	Noldus Information Technology BV
CreativIT	PERTIMM
Delicode	Softkinetic
Eindhoven University of Technology	Sound Intelligence BV
FADO	Spikes n.v.
Fundacion Tecnalia Research & Innovation	TP Vision
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Hasselt University	Universidad Politécnica de Valencia (UPV)
Huittisten Sanomalehti oy	
Ibermática	UNIVERSIDADE ABERTA
INABENSA Instalaciones	Valve Vanguard
INRIA	VicarVision
Institut Télécom	Vrije Universiteit Brussel
JSC Fazer Lietuva	VRT
Kaunas University of Technology	VTT Technical Research Centre of Finland Tec
Laurea University of Applied Sciences	woowoos

■ Countries involved

Belgium
Finland
France
Lithuania
Netherlands
Portuga
Spain

■ Project start

July 2012

■ Project end

June 2015

■ Contact

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The business relevance of the project should be understood through the importance of UX, especially when difficulties in using complex products may lead to a worse UX and user satisfaction, raise the barriers for adopting new technologies and have an adverse effect on the brand image.

Empathic products will enable superior UX by truly taking their user into account and so improve their market position. Recent developments in the mobile sector have shown that people can massively turn to products with a better UX, leaving technically more advanced products standing in their wake, not to mention that part of the user experience differentiation is achieved by the ecosystem (e.g. appstores), and not by the product itself.

While for most users, empathic products will just bring more pleasure, for some it may mean a radical change. People coping with mental or physical disorders can benefit greatly from supporting products that anticipate their needs and warn of potentially harmful situations. The ageing population will welcome products that help them cope with a failing memory, and services that are provided just when you need them. Empathic products will thus help elderly and disabled people to manage their everyday lives more independently, thereby boosting their quality of life as well as reducing the burden on the society.

FINDING OPPORTUNITIES

Technically understanding people's emotions and intentions is not a trivial task. Research in affective computing has been performed in universities all over the world with various levels of success. The technology has matured but has only rarely found its way into products to date. The industry has discarded them as too 'science fiction' and unreliable while researchers might have focused their research on incomprehensible holistic human behaviour and spectra of emotions. Most products would already benefit from much simpler affective technologies, geared to some specific aspects important for the domain of the product.

The challenge in this project is therefore to package the affective technologies, make them more robust, benchmark their

performance for various applications and smooth their adoption into products. In other words, to spot the opportunities for empathic products.

Ambient assisted living

Empathic TV

Education and Gaming

Application domains empathic products