
CONFERENCE ABSTRACT

Meeting end user needs in international research projects aiming to develop medical device technology prototypes for integrated care: A case study

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Purpose: The objective of this case study was to investigate how user centred design processes were applied and conceived by project team members in a large-scale, international, collaborative research project aiming to develop integrated care technology solutions starting from an un-proven, immature technology level.

Context: Multi-national research projects with public funding, such as European Union research projects, often involve multiple partners covering a wide range of expertise and with each partner having specific project responsibilities. Projects aiming both to a) develop novel technology solutions, and b) to meet societal needs for improved integrated care solutions are therefore challenged by a conflict of interest between technology development aims and the need for meeting relevant end user needs. The case studied was the EU 7th Framework Program project d-LIVER (2011-2015), which aimed to develop new, integrated care solutions for chronic liver failure patients, and which included a liver patient management ICT system, wearable and blood sampling instrumentation devices for remote follow-up, and a bio-artificial liver device [1].

Methods: 20 core project participants (involved throughout the majority of the project) and with different roles (technical development, clinical expert, project management) were invited, and 14 of these responded positively to take part in one-to-one semi-structured telephone interviews. Here, they were asked to give their opinions on how end user needs perspectives were catered for. All interviews were recorded and analysed.

Results and discussion: Overall, project participants of all categories reported to be motivated by making new and better solutions for the benefit of society and end users, and less motivated by scientific prestige. A "double bridge" with technology developers on one side, with clinical expert partners in-between, and "end users" on the other side was found: Most technology developers reported that they had no direct contact with end users (patients) during the project, and therefore relied on the clinical expert partners to convey user needs. Clinicians were therefore essential in defining end user needs, but their clinical background and lack of end-user needs engineering methodologies experience represented a challenge. This project organization, which we believe is typical for collaborative projects, limits access to first-hand end user perspectives for technology developers, but this was not considered a pain point by any informants. To improve end-user

relevance of results in future projects, we suggest: i) to involve actors with adequate competence in user centred design methodologies, ii) that both technology developers and clinical expertise are involved in end user needs analysis, and iii) that sufficient resources and emphasis are put on iterative evaluation by target end users from early prototype stages.

References:

1. <http://www.d-liver.eu/>. The d-LIVER project received funding from the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement no. 287596

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