Presentation of a Research Design for Evaluating the Innovativeness of Ambient Media

Artur Lugmayr

[1] EMMi Lab., Tampere Univ. of Technology (TUT),
POB. 553, Korkeakoulunkatu 1, FIN-33100 Tampere, FINLAND
www.tut.fi/emmi, www.tut.fi
lartur@acm.org

Abstract. Innovations in media business have a long history, as new technologies let new forms of media emerge. Today - in the world of ubiquitous and pervasive computation - this technology lets a new form of media emerge: ambient media. One simple example are public screens where people can interact with the displayed content. The aim of this publication is to discuss ambient media as innovation driven by entrepreneurs in the world of media, the principles how they can be managed, and what is needed to make them to a success. However, at this stage solely the research design is presented within the scope of this paper, as the research work is currently in progress. As examples act entries submitted to the Nokia Ubimedia MindTrek Award by conducting interviews and analyzing the entries of the winners of the competition.

Keywords: innovations, media, ambient media, ubiquitous computation, pervasive computation, ambient intelligence.

1 Introduction

Ambient media are media that are embedded throughout the natural environment of the consumer. The idea of media becomes a matter of a media ecosystem, rather than providing the consumer with a single stream of content. As each new form of media, ambient media are based on a new technology – in the case of ambient media, the media form is based on ubiquitous and pervasive technologies, thus miniaturized computer systems distributed throughout the consumers' natural environment. One simple example are smart wallpapers, that adapt their presentation to the mood of the consumer. The technical infrastructures for presenting ambient media content currently are wide spread – they are many times developed by entrepreneurs or for specific purposes acting as enriching the main content stream. A good example are TV shows such as big brother, with an associated community of consumers following the show via mobiles or websites. However, for further reading about ambient media we would like to refer to [4] [3].

A the product 'media' is driven by the rapid changes of technology, the management of companies face a huge challenge to cope with the rapid development of innovations. Media can be either a single creation product, which is idea driven and unique (e.g. movie); or a continuous creation product, which is on-going and managed like a process (e.g. TV series) (see [5] [6]). In the case of ambient media the questions are manifold. Firstly – what is the actual main product – the technology? – the technology combined with the content? – the technology and content as add-on feature to other content? – what are ambient media in the context of media innovations? – what are ambient media as media product? An excellent overview of innovations in the media landscape can be found in [8].

2 Research Problem

Currently traditional media companies are learning how to cope with social media as new technology for their media products. However, ambient media based on ambient intelligent technology is the next natural technology to be considered for advanced media products. Currently ambient media are still an innovation, and solely a few products are mature. This implicates a few research questions, which are attempted to be answered within the scope of this research work:

- How do currently existing ambient media products fit into the phases of the innovation processes?
- How did the ideas for currently existing ambient media products emerge?
- How can the new products be evaluated on their innovativeness?
- What were the steps for idea implementation and how can they be commercialized?
- How could a model for innovations in ambient media look like?

To answer these questions, ambient media products submitted to the Nokia Ubimedia MindTrek Awards 2008-2010 are analyzed on their innovativeness. Winners of the competition as well as special mention were considered as cases to derive conclusions. They re-present min-cases. An overview of the competition can be found on [1].

3 Research Design

Despite the theories around the process of innovation are rather well developed, ambient media and their impact are rather new. For this purpose the research design is based on an empirical approach. This allows coping with the currently unstructured problem structure of ambient media. However, note that general theories around innovations are well developed, and provide a more structured approach. But the research design for the scope of this work shall allow the gathering of more additional observations and considerations that have not been thought about beforehand.

To cope with this fact, the approach is designed as mix between exploratory and descriptive research, with emphasize on an exploratory approach. An exploratory approach allows flexibility and as ambient media are currently newly emerging, their innovativeness and innovation character is poorly understood. This can be e.g. seen when attempting to find a coherent definition for this media form. This approach enables also to add additional observations and pieces of information while conducting a qualitative research approach to develop a more theoretical model – or a generalized theory. However, as research is rather well developed in the general theories around innovations e.g. on organizational-, macro-, micro-, and individual level, theories from this side will enrich the performed research work. Thus they will provide the general input with a-priory knowledge from general theories. However, this study excludes cause-effect research approaches, due to a lack of structure, cause-and-effect characteristics, and a difficulty to isolate specific causes (as e.g. the impact of the innovation).

The evaluation criteria are enlisted in Table 1. To answer the research questions, interviews/questionnaires with a selected set of winners and special mention of the Nokia Ubimedia MindTrek Award are selected (e.g. Donkeybedia (1st price, 2009), myGreenSpace (1st price 2010), and Point-to-Discover (1st price, 2008)).

Table 1. Evaluation criteria on the product innovativeness of ambient media services and products.

	Type	Criteria
V1	Innovation process [7]	Invention, innovation, imitation
V2	Degree of novelty [2]	Radical, adaptive, imitation
V3	Innovation form [7]	Product innovation, market innovation, process innovation, social innovation, method
V4	Innovation management [8]	Organization, efficiency, relationships, market, structure
V5	Media characteristics [5] [6]	Single creation, continuous creation, processes
V6	Impact on ambient and ubiquitous environments	low, medium, high

4 Discussion

This research work is still in progress, and shall present solely the first problem definition as well as the basic research design. The interviews will be still conducted during the year 2010, and shall allow further insight in innovation research of ambient media. The appendix section of this paper gives an overview of interview questions acting as starting point for interview preparation.

Appendix: Preliminary Interview Questions

1. Which business benefit does your product have? [free form/submission]

2. Which impact has your product on ubiquitous media environments? [free form/submission]
3. Can you formulate an elevator pitch for your entry? [free form/submission]
4. How did you have the idea for this product? [free form]
5. Is your product already a marketable product? [yes/no]
6. How long would it take to make it to a real product? [months/years]
7. How much resources in terms of mmths or funding would be required to make it to a real marketable production? [free form]
8. , or how long would it take to make it to a product? [free form]
9. How does society benefit from your product? [free form]
10. At which stage would you see your product? [it is an imitation/improvement of an existing one; it was never here before; it is an innovation]
11. Which degree of novelty do your product? [it's a radical innovation and was never here before; it imitates an existing product; it is an improvement of an existing product]
12. What does your product improve? [a consumer product; processes to create a product/used in production; it is a social innovation; it's a method contributing to the theoretical research of ambient media]
13. How do you manage your innovation inside your affiliation in terms of organization, efficiency, relationships, market structure? [free form]
14. How would you characterize your media product? [easy to replicate; it can be used only on a one-time basis; it's a process]
15. How would you see the impact on ubiquitous environments? [free form; low, medium, high]

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