

BUSINESS CASE: DIGITAL MAP SERVICES FOR OUTDOOR LEISURE

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ABSTRACT

This paper presents a collaborative project, where novel business opportunities for new kinds of map services are explored. The companies involved are facing a challenge: how to survive in the change of fundamental structures that underlie their business? The project will explore opportunities related to a new kind of service platform, which enables new places for organisations and users to encounter in fruitful collaboration. Due to the extensive complexity of the networked situation, good planning is very valuable in order to discover feasible business opportunities in the whole. The paper introduces the partners including their motives, the new platform, and the intended overall process.

INTRODUCTION

MenoMaps II – (Map services for outdoor leisure activities supported by social networks) is a 2,5-year project, which aims at creating a novel map-based platform to support outdoor leisure activities. The platform was designed conceptually in the MenoMaps I project, which focussed on the construction of a new service concept on the basis of multi-channel map publishing. During the MenoMaps I the design concept was articulated

through a user-centred concept design approach.

The platform is based on the idea of multichannel publishing. A channel is an information instrument, such as a mobile application, touch-sensitive wall, or a printed map, which enables the delivery of an interactive map to the users. Technical prototypes were built on a MultiTouch wall display and on the iPhone. Data matrix technology was tested to link printed maps, the MultiTouch map and the mobile

application (a functioning prototype is shown in Figure 1). With the background of the MenoMaps I project new funding was received to develop the platform further. The key challenge in the further conceptual development of the system is the integration of business thinking into the whole.

The MenoMaps II project features in total 10 industrial partners, two cities, two research organisations, and an association for outdoors enthusiasts. This combination of organisations establishes a setting, where potential for several new kinds of business opportunities may be discovered. Some of the partners are commercial, some public, and some third party, and all of them may provide services for each other and for the map users engaged in 'outdoor leisure activities'. However, a subset of organisations was selected for making the effort, which is addressed to the PINC conference contribution, manageable within the time. The subset comprises four organisations that could be easily seen as potential collaborators in realising a functioning service for outdoors leisure activities.



Figure 1. A functioning prototype of the users' task flow was developed in the *MenoMaps I* project. The user is transferring the planned route from the MultiTouch wall onto her mobile device through UpCode link.

THE FOUR PARTNERING ORGANISATIONS

AtlasArt Corporation is a Finnish map publisher. It has a long tradition of publishing printed maps and wall maps that are utilised e.g. in schools. Recent advances in accuracy and visualisation techniques are making increasingly vivid and detailed maps possible for emergent purposes. Also the ways of delivering the maps are increasing. Current products include map books, historical maps, novel 3D-shaded landscape imprints on custom locations anywhere in Finland, which may be ordered by individuals, associations and corporations. Maps may be delivered on different materials and also framed like paintings. The business challenge for *AtlasArt* is entering the digital realm and interactive publishing: How should the maps and their potential additional content be delivered to the users in order to ensure that they would also be 'happy consumers'?

Metsähallitus (Forest and Park Service) is a public utility that provides services for nature conservation and for hiking areas, it controls hunting and fishing rights and promotes conservation and recreational use of lands and waters that are the property of the State of Finland. *Metsähallitus* is providing an increasing amount of services in digital form. The rapid development

of demand and application platforms, however, outpaces the creation of well-functioning applications across platforms. Hence *Metsähallitus* is facing an increasing pressure to finance parts of the digital services on the basis of individual payments to ensure proper resources for the development of digital services. The question is, how would people be 'happy to pay' for the additional services?

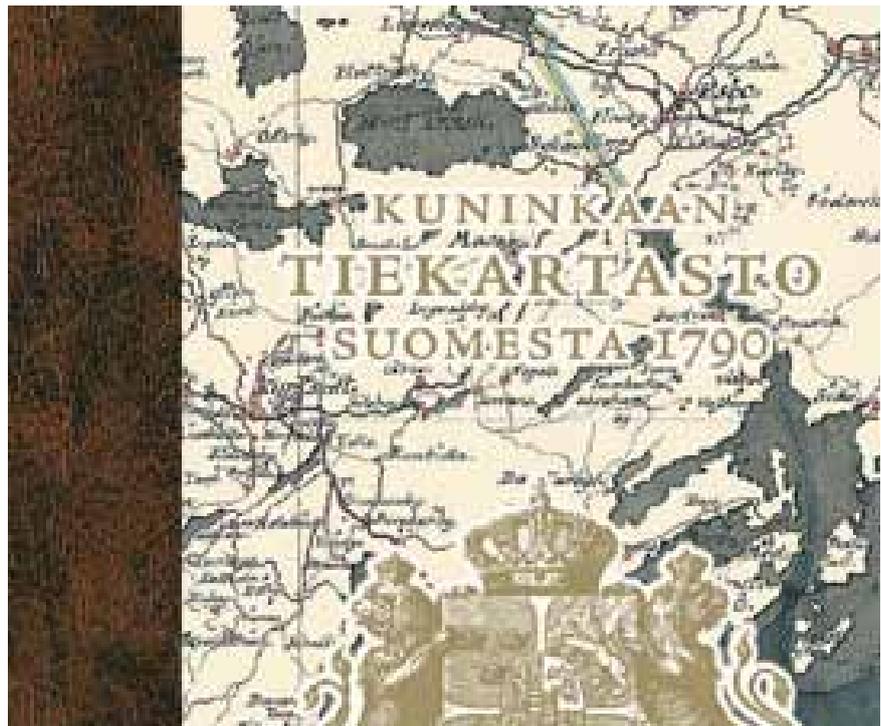


Figure 2. The map of the 1790s King's route map is an example of the kinds of products *AtlasArt* has developed.

Tracker Software Inc. is a Finland-based company that focuses on tracking and telemetry systems. A special area of expertise is the tracking of animals, such as hunting dogs. *Tracker's* products and systems are sold in Europe, North-America, Australia and Asia. The products include a mobile phone application for hunting and team tracking, and several GPS and RF-based products for locating hunting dogs. The challenge for the *Tracker Software Inc.* is that the users of the hunting systems tend to be aged people. Currently this user group has not yet well adopted novel methods for paying, even the credit card is too much of a novelty for many. The systems should be highly accessible and easy to use, and be weather proof in environments ranging from the Finnish forests to the deserts of Australia. The development costs of every new piece of service is currently rather high as compared to the revenue per user, whereby, the services should be easily extendable across the globe.

UpCode Ltd. is a globally operating company, based in Finland, providing services to integrate diverse organisations through a technology called UpCode™. The technology is based on a data matrix, which may be optically read by mobile phones, and thus provide linkages across the physical and

digital realities. Despite the technology may be conceived to parallel RFIDs and bar codes, the ways the whole is integrated into a wide variety of business functions makes a difference. On a generic level the technology enables organisations to move from value-chain-based models ('horizontal integration') into network integrations of heterogeneous and multi-layered activity systems ('vertical integration'). The central challenge for the UpCode Ltd. is the discovery of proper position within the novel structures that are currently emerging to uphold new kinds of digitally mediated human practices. One potential technology, which is integrated into the UpCode already, is called 'micro payments'.

THE INTENDED PROCESS

The track-based model, which is adopted in the MenoMaps II project, resembles the 4th generation innovation process as outlined by Rothwell (1994). According to him (ibid.) the 1st generation models (1950 – mid-1960s) were based on a linear structure and were highly driven by technology push. The 2nd generation models (mid-1960 – early 1970s) were affected by the increasing value that marketing provided for companies. Hence the models in this period are characterised by the market-pull that advertising of products set forth. The 3rd generation models emerged at the times of global energy crisis in the beginning of the 1970s. Companies were forced to develop new models to survive. Rothwell



Figure 3. Metsähallitus provides facilities and information for people to enjoy the state-owned sceneries and landscapes. The 'outdoors.fi' and 'excursionmaps.fi' are examples of the new digital services by Metsähallitus.

(1994) states that the best practice adopted a coupled process, where communication and integration of internal and external parts of the innovation process was promoted. However, the overall process still remained essentially a sequential. The economic recovery that marks early 1980s gave rise to the 4th generation innovation process. What differentiates the 3rd and 4th generation processes is the transition from a sequential process into parallel development. The parallel development processes were integrated through joint group meetings of engineers and managers. Rothwell (ibid., p. 26) characterises the 5th generation model "as a process of knowledge accumulation, or learning process, involving elements of internal and external learning." Rothwell (ibid.)

perceives the key aspects of this learning process to be:

- integration;
- flexibility;
- networking; and
- parallel (real time) information processing.

The MenoMaps II project is planned in the form of parallel tracks, which will be coordinated through integrative workshops. Hence, the overall conceptualisation of the process resembles the 4th generation process. It should be noted that the MenoMaps II project is a project, not a process. A project has a beginning and an end unlike a process, which progresses in cycle. Also projects, which are embedded in the 5th generation innovation process setting, need to be planned in a timely chronology. It is now left up to the concrete arrangements taken place in the project to realise the process towards the ideals of a 5th generation process.

The tracks in the MenoMaps II project will be integrated through co-design workshops. In these workshops the people working on the different tracks will meet and contribute to the particular agenda set for the workshop. The project may be considered as an example of what Brandt (2001) calls event-driven. The events form milestones, where information is exchanged between the tracks.

The main development tracks are the following:

- T1. Concepting interactions and developing related user requirements
- T2. Concepting the social data gathering and developing related user



Figure 4. Tracker Software Inc.'s new MyWaytm product family addresses the needs of people who love to make their own paths.



Figure 5. The Minister of Justice of Argentina presents a driving licence that features the Up-Code data matrix, which enables the linkage of the physical card to virtual services.

requirements

T3. Concepting business opportunities and new services and outlining related requirements

T4. Technical implementation and integration

Track T1 focuses on the novel forms of map-related interactivity on the MultiTouch platform. The platform allows for many simultaneous users on a shared screen while recognising each user's detailed hand gestures. Task T1 is set to explore alternative ways of interacting with the map content and plans through MultiTouch display and to define requirements for the implementation of the prototype.

Track T2 develops new models for users to interact with the multi channel system where they may contribute to the map data. This track addresses a problem with the accuracy of map information. Current map systems pro-

vide map data for users on a level of accuracy that fits well activities, such as car navigation, but which is poorly suited for the needs of people on the move by foot. The micro-level information of the pathways in forests is a potential area, where the users of map systems could benefit and contribute to more fine-grained information about the areas outside road networks. Track T3 explores the opportunities for developing new businesses in the new combination of technical possibilities and of practical uses that the multichannel network of interactive maps may facilitate. The methods for developing concrete visions of such opportunities that will be employed in the project, are tangible business modelling (may be explored at the PINC conference), interpretation frameworks, which are used to analyse business opportunities, and critical design

methods, which aim at distilling the relevant by exaggerating ideas about reality.

Track T4 is the backbone that will function as a measure for what will actually make sense for the actualisation of the plans. In this track, four channels, the MultiTouch wall, the iPhone application, the Web 2.0 service, and printed maps, will be developed into an integrated and functioning prototype of the service. Also during this track one additional channel with a novel interface will be explored.

IN SUM

The MenoMaps II project provides a real life setting, where a novel network of organisations will explore the new business opportunities that an emerging multi-channel map service may provide. The project has just started and will be carried out in co-operation between the Finnish Geodetic Institute, Department of Geoinformatics and Cartography, and the Aalto University, School of Art and Design, the Department of Design.

ACKNOWLEDGMENTS

The research conducted in the MenoMaps II project is funded by TEKES (the Finnish Funding Agency for Technology and Innovation), the partner companies, and is a joint venture of the FGI and the Aalto University School of Art and Design.

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