# Designed through and for co-design: case Urban Mediator

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## ABSTRACT

In this position paper for the Designed for Co-designers workshop, I present the case of Urban Mediator design and development, highlighting the efforts of our design team in developing flexible and generic tools for users, which make it possible for both citizens and city administrations to make use of the same platform for creating, sharing and obtaining location-based information, for various goals. In the later stage of development of the software it was possible to use Urban Mediator in public projects set up in collaboration with various interested parties (city administrations, communities, museum). The co-design efforts that prepared Urban Mediator for public use offered opportunities for collaboratively developing Urban Mediator in such a way that it would be a co-design platform in itself, offering flexible tools for interested parties to use it and adapt it.

## Keywords

Co-design, citizen-city interaction, software

## INTRODUCTION

Urban Mediator (UM) is a server-based software that provides a way for communities to mediate local, location-based discussions, activities, and information. Its goal is to provide users (citizens as well as city administrations) with the possibility to create, obtain, and share location-based information (*Points*), which is organized according to topics of interests (the Urban Mediator *Topics*) set up and maintained by the users themselves. Urban Mediator uses a map-portrayal service as means for representing location-based information and complements it with a set of *Tools* for users to process, share and organize this information. The Urban Mediator software, once installed on an appropriate server, provides a customizable instance that is accessible and usable online, through the web, using a normal PC or any browser-enabled mobile device.

Urban Mediator was developed throughout the EU-funded ICING research project (Innovative Cities for the Next Generation, 2006-2008). It is since June 2008 available as an Open Source software package [3]. UM development

has, since the start of the project, followed an iterative, co-design approach, where various stakeholders (e.g. active citizens, schoolchildren, local developers, city planners) have been involved in the design process by taking part in a variety of co-design activities, such as workshops and use of prototypes. [2]

The latest co-design activities, which I present in more detail here, have very much focused on the development of UM features and tools that offer flexibility in the use of the Urban Mediator platform, e.g. the possibility for users to set up a topic on Urban Mediator, create various web widgets, import news feeds, export data in specific formats and so on. The goal was to create tools rather than fixed solutions for encouraging public participation in urban issues.

## BRIEF OVERVIEW OF INITIAL CO-DESIGN ACTIVITIES

The first co-design activities started with the identification of relevant communities and establishing co-design relations with them. We held meetings and/or workshops with some of them at that stage, such as active residents communities from the area of Arabianranta in Helsinki, in order to map relevant issues related to the needs for sharing location-based information. We also established connections with various departments of the City of Helsinki. These initial steps helped us in conceptualizing Urban Mediator and coming up with scenarios of its possible use, grounded in concrete examples of need for citizen-city interaction. We also identified three main areas for development of UM services: in-situ access and contribution to information, harvesting of relevant location-based information existing on local websites, and tools for citizen-driven interaction.

We then moved to a second phase of co-design activities that started with the development of initial prototypes (starting with adaptations of existing software and moving to a working prototype of what we refer to as Urban Mediator Stage 1), and experimentation with them. We had several little projects in Arabianranta, involving active residents, schoolchildren, and the local development company, for testing and developing various prototypes, focusing first on in-situ possibilities for marking location-based information, then on harvesting possibilities [2]. In further efforts, we addressed the possibility of providing tools for citizen-driven interaction. We had ourselves experimented in internal design workshops with the idea of UM providing users with the possibility to create 'collections of points' related to issues of interest. We

explored this idea then in more detail in a workshop with active citizens who were lobbying for converting an existing city-owned building in Arabianranta into a locale for community art activities. The results of this workshop permitted us to take further the idea of the collection of points, which we started referring to as '*boards*' and later '*topics*', and include it as a main feature of Urban Mediator. With that, we got Urban Mediator alpha version ready, which could be tested and shown as a concrete artifact to any interested party, such as the city administration. With this version, the main idea of a local Urban Mediator being a set of user-created topics was established. Each topic then would consist of collections of points, which could be further processed and shared. Further iterations of the software then followed, with UM version 1.0 (beta) then UM version 2.0, which were part of the development efforts intertwined with the public use of Urban Mediator.

## EXPLORATORY CO-DESIGN WITH CITY ADMINISTRATIONS

The first case for using UM by the general public came up in summer 2007, when a park manager from the Public Works Department was interested in developing a participatory research inquiry to ask citizens to report sightings of bunny rabbits in Helsinki, as well as damage done by then, in an effort to research this new urban problem [1]. Through the intermediary of the ICING project partner from the City of Helsinki who had been informing about Urban Mediator inside the city administration, he got interested in trying it. A '*board*' section (later called '*topic*' in the v2.0 version) for the "bunny rabbit case" was created in Urban Mediator Helsinki, which at first was using the alpha version, then the version 1.0 beta. As we did not want to make any custom solution for this particular case, in terms of functionalities required for asking citizens to report particular information, we came up with the idea of creating Urban Mediator web widgets. These web widgets could be created using a '*widgetizer*' tool on Urban Mediator then embedded in any web page as a piece of code to be added the webpage's HTML code. The widgets would provide the needed UM functionalities from the desired webpage, such as having a button that would make it possible to directly add a *Point*, i.e. marking a location on a *Topic* map, giving it a title, a description, and tags (all of these functionalities had been already developed in Urban Mediator Stage 1) [2]. This solution permitted us to focus on developing the widget idea as a generic solution, while testing it against a case of concrete requirements for this particular participatory project. The co-design activities with the city department were not in themselves intensive because of limitations in the time they could give to this project, but included a series of meetings where the Urban Mediator web widgets to be used were discussed. The widgets in that case were an "*Add a Point*" button, and a "*Point List*" window displaying newest additions to the *Topic*. The message on the button could be customized, as

well as the fields on the page that open after clicking the button. The idea of the widgets was then adopted afterwards in other projects using Urban Mediator and that permitted to develop them more, stressing on the flexibility they can offer to users.
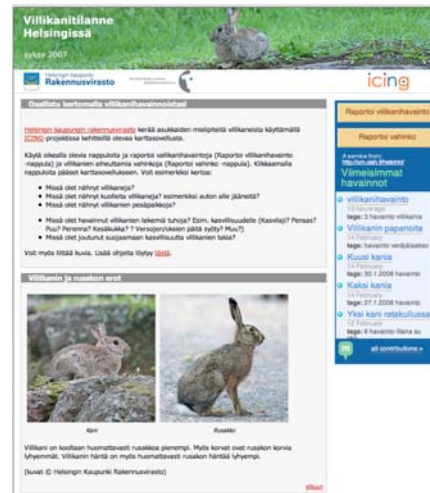


*Figure 1. the city info page showing the Urban Mediator widgets used on the right hand side of the page*

The wrap-up meeting we had at the end of this project triggered the development of a feature that also proved to be useful in future public trials with the city: the possibility to export material gathered using UM in a CSV (Comma Separated Value) format. This format can be used in Excel documents as well as by the City of Helsinki's own GIS services. The "*CSV Export*" therefore became one of the UM tools.

## REFINING THE METHODOLOGY: PAPER AND PEN WORKSHOPS

The success of the use of Urban Mediator in gathering citizens' reporting of rabbits and damage done by them triggered the interest of other departments of the City of Helsinki, especially the Planning Department. Furthermore, the Museum of Contemporary art of Helsinki, Kiasma, also informed us of their interest in using UM.

### Malminkartano traffic safety project

The City of Helsinki ICING partner organized for collaboration to happen between us and the Planning Department, in order to set up the use of UM for what they referred to as the Malminkartano traffic safety project, for mapping residents opinions, ideas and complaints regarding the Malminkartano area traffic safety plans.

Meetings started in January 2008 to discuss about what it is exactly that the planning department wants and also to explain what can be achieved using UM. A co-design workshop was organized with members from the Planning Department in order to set up a suitable UM topic and design the widgets to be used for this case. We used paper prototypes and Post-it notes to help the participants understand what kind of design decisions they had to take, such as: the main information to appear on the *topic* page,

the web widgets to be generated and used, the information that should be shown on the *Point list* widget, the title and tags examples that appear on the *Add point* page, and the information that would appear on their own website and explanation for the users to use the widgets embedded there. Also, in a previous meeting with them we had understood that, as they wanted to gather information related to different themes, a way to filter the collected information would be useful. We therefore proposed to them the idea of using "*hidden tags*" (as opposed to the visible tags created by users), which they would choose according to terms that made sense to them, and that would help them filter the information gathered. These *hidden tags* would be attached to users' contributions depending on the widget they used to submit their information.



*Figure 2. showing the paper and pen toolset used during the workshop and the planners working on a paper prototype*

The workshop helped the participants understand what was possible to do with UM, what it is that they needed to think about to set up the participatory project with the UM topic features and the possibility to customize and make use of the web widgets. It was decided that three Urban Mediator widgets would be used to a) report dangerous places b) make improvements in the traffic and c) report parking problems. The *hidden tags* associated to each widget, as well as the examples of titles and tags that would show on the *Add a point* page were also decided. The idea of having also pre-defined tags, for users to choose from, was first proposed by the planners but was later abandoned by them. The feature was however implemented and proved handy in other cases of UM use.

We then set up the topic and sent the web widgets' code generated by UM to the Planning Department's webmaster, who included them in the web page she had prepared on their website, explaining the traffic safety project and how one could take part in it. An interesting detail to note is that the Webmaster edited some of the widgets' appearance to best fit the planning department's web pages. This was in our opinion a good example, even if small, of independent and direct design action from a collaborator outside the design team, reinforcing our hopes of designing for adaptation.

The trial was started by introducing the plans and the department webpage where the UM widgets were embedded, in an event organized by the city of Helsinki, with the Lord Mayor present. At the end of the trial, which lasted about a month, there were 101 contributions by citizens on the UM topic.

**The Kiasma museum "Fluid Street" exhibition tours**

The Helsinki museum of contemporary art, Kiasma, was planning an exhibition on the theme of the city and urban life, which was to open in May 2008. Along with exhibited artistic material in the museum, they were going to organize a series of workshops and happenings, inviting the public to take part in documenting various aspects of the city such as: art and artistic expression in the city, nature in the city etc. These workshops and seminars were to be lead by artists or experts. Kiasma got to know about Urban Mediator through a colleague at our university, and were interested in using it for these happenings in order to augment the possibilities of public action, by offering possibilities for workshop participants as well as the general public to send their own documentation of the city, as related to the workshop themes.

We organized a workshop for the Kiasma people involved in coordinating the tours. The workshop was similar in format as the one organized with the planning department. The tours started before the Kiasma web pages were fully ready, and they only had some of the needed widgets embedded. This was due to the fact that their Webmaster had fallen sick at that time. This was probably one reason why the project was less successful than the traffic safety one, with much less contributions. A more important reason however could also be the lack of co-design effort, from our side and Kiasma's side, in addressing the ways for inviting people to contribute. For example, the computer set up in the museum was showing the Urban Mediator Helsinki main page and not Kiasma's own pages where the widgets and some explanation about the project should have been showing. Also, we did not collaborate enough with the people leading the tours (who were not from Kiasma but were invited by Kiasma to take on this task) and did not manage to encourage them in creating initial content that would act as example for the visitors. Probably a workshop with them would have been fruitful if it could have been organized. Effort could have also been put in addressing the particular challenges posed by attempting to engage people to interact with an online system, in a museum space, and to trigger their interest in participating, maybe through games or competitions. The Kiasma case, didn't address everyday concerns in the way the traffic planning case did, and probably would have needed a little more 'push'.

**URBAN MEDIATOR: TOOLS IN USE**

The co-design activities revolving around the public use of UM have helped refine the UM interface and the set of features, especially the UM tools that are meant to provide the required functionalities for users so that they

themselves can further develop possible uses of UM, adapting them to their needs and situation. Once a certain amount of these tools was available and accessible on the Urban Mediator instances, it was possible for interested parties to use them, with various degrees of assistance from the researchers and developers, in order to set up their own projects.
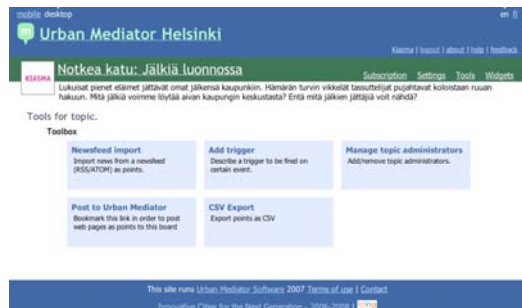


*Figure 3. showing the UM tools available for a topic administrator*



*Figure 4. showing the UM 'widgetizers'*

In Helsinki, there were many cases of semi-independent Urban Mediator use. They can be viewed by exploring the various topics on UM Helsinki (http://um.uiah.fi/hel). The most important and fruitful encounters with the communities that decided to either try out or use UM were the following:

a) Birdwatchers community in Helsinki

The birdwatchers community wanted to investigate the possibility of using UM for reporting sightings of birds, especially the few eagle owls that have settled in the city center. We decided to assist one of their members who had contacted us to inquire about UM, in creating a test topic on UM Helsinki, instead of explaining in words how UM could be used. Even though the birdwatchers did not, at least until now, decide to use UM, one of the interesting results of this exercise was how it highlighted the flexibility of the use of tags. The possibility to tag information submitted to UM using freely chosen keywords was available since the first UM prototypes, on an experimental basis. In this case, it occurred that it would be important for the reporting of birds, to indicate the time of the sighting (which can be different from the time of creating the UM point). Proposing the practice of adding tags indicating time, by the users, solved this. These time tags could be written using an agreed upon format, such as for example 20032008 for indicating the date (20th of March 2008) and 1330 for the time (1:30 pm).

b) The Media lab community

The University of Art and Design's Media Lab department is where Urban Mediator is being developed. The community of students, teachers and researchers are active users of their own Intranet, where they share various kinds of information and engage in discussion on the discussion forum. It was decided, together with the Intranet maintainer to try out various Urban Mediator widgets on the Intranet pages. One of the trials was an attempt to take the practice existing at Media Lab of sharing places of interest in Helsinki by using small post-it notes to annotate the map of the city hanging in one of the lab's corridor, and to translate it to the intranet by providing UM widgets that made it possible to create a point on the UM topic entitled "Must-see places in Helsinki". The trial was not particularly successful, with very few contributions. As one staff member put it: it was just too much to ask to first log in to the Intranet and then having to log in to Urban Mediator, with another set of username and password. This proved however to be valuable exercise as it got us to think of solutions for that problem, which was to occur again later as one important aspect of UM is that it can plug in to other systems.

c) Volunteers for trash collection in Helsinki

One of the volunteers who collaborate with the City of Helsinki for cleaning up parks especially after public events, was interested in testing Urban Mediator as she believed it could help the volunteers' work in indicating the spots where trash has accumulated. We briefly helped in creating the trash issues topic on Urban Mediator but she afterwards proceeded on her own, inviting other volunteers to collaborate to the trash topic. This was a good case of independent experimentation with UM.

d) Youth Center (Nuorisoasiainkeskus)

The Youth Center, *Nuorisoasiankeskus*, is a department at the City of Helsinki, addressing youth issues in the city. The Youth Center was interested in using Urban Mediator in June 2008, to ask young people to propose locations for a new skateboard park. We provided them with some instructions on how to create a topic and widgets, and their web editor took it from there. They themselves created a topic on UM, worked with the Urban Mediator tools and inserted widgets into their own website. The flexibility offered by the use of both free tags and pre-defined tags was also highlighted in this case: the Youth center wanted users to indicate the age group to which they belong. This was easily achieved by using the pre-defined tags feature, offering the possibility for users to choose between the following categories: 7-12 years, 13-17 years, 18-22 years and Above 22 years.

**DISCUSSION**

One of the concrete challenges that came up in this

particular case and was not fully addressed within the timeframe of the ICING project is the issue of user management: who has access to which tools and under which circumstances? In the current Urban Mediator version there is the possibility to have four main user groups: visitors, registers users, topic administrators (whoever creates a topic is its administrator) and the instance administrators. We have taken some preliminary decisions regarding the accessibility of tools to these various groups but have not researched it in depth. This issue touches on some of the core considerations regarding the idea of Urban Mediator, a system geared for use by both cities and citizens, and which gives them both enough flexibility for use. However, can this be always possible, considering the hierarchy and bureaucracy often associated with larger organizations (such as the city)? This I believe can only be researched through concrete cases were co-design collaboration with such organizations are tested. Those undertaken during the ICING project were just a mere start.

It is certain that these co-design sessions, as well as earlier ones not documented in this paper, helped us refine UM further in terms of features, user interface and flexibility. So far, we can say that the projects that were most successful in using Urban Mediator were those where the people involved in setting the projects understood Urban Mediator as a versatile tool rather than a fixed solution for a particular problems, which our original aim. As an open system, Urban Mediator can support collaborative design and presents opportunities for being shaped through use. How it can be taken further remains the question that needs to be addressed. Urban Mediator has been developed as a research project in a research setting. It is an advanced prototype and as such can't be scaled up for intensive public use. However, drawing on the series of successful concrete cases using it, it is possible to gather a set of 'best practices', including the importance of openness, adaptability and flexibility. These research and development (R&D) results can offer a basis for development and productification of similar systems. Also, the fact that the Urban Mediator software is available as Open Source software, on platforms such as Source Forge, might trigger the interest of the developers' community.

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