

Web-based GIS to support citizen interaction in land use planning

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Abstract

Interactive planning is an important trend in most developed countries. The idea is to encourage citizens to participate planning of their society and environment. In Finland the principle of interaction is written in the legislation of land use planning.

The paper describes an ArcIMS based feedback system used for regional planning in Finland. The system is used to publish the draft of a regional plan. It offers the citizens a chance to enter a comment attached to a location or geographic feature. The administrator's interface supports handling and analysis of the received comments.

Interactive Planning

The objective of interactive land use planning is to encourage citizens to participate in planning of their own society. The participative process is believed to increase people's satisfaction in their living environment and to decrease complaints in the last phases of the planning process. In Finland the requirement for enabling participation is written in the Finnish [Land Use and Building Act](#).

The traditional form of interaction has been information meetings where planners have presented a draft of a plan and invited concerned citizens to discuss it. Today web based interaction offers an additional channel for participation with many advantages. Web based participation is independent of place and time, complements the information meetings, supports dissemination of up-to-date planning information and allows people to study the planning information and to form opinion in their own pace. It is also expected to encourage participation of people that either find it hard to attend the meetings or are otherwise shy to do so.

Interactive regional planning

Regional planning, as an example of "upper-level" and more abstract type of planning, is the type of planning activity which is most likely to benefit from the implementation of

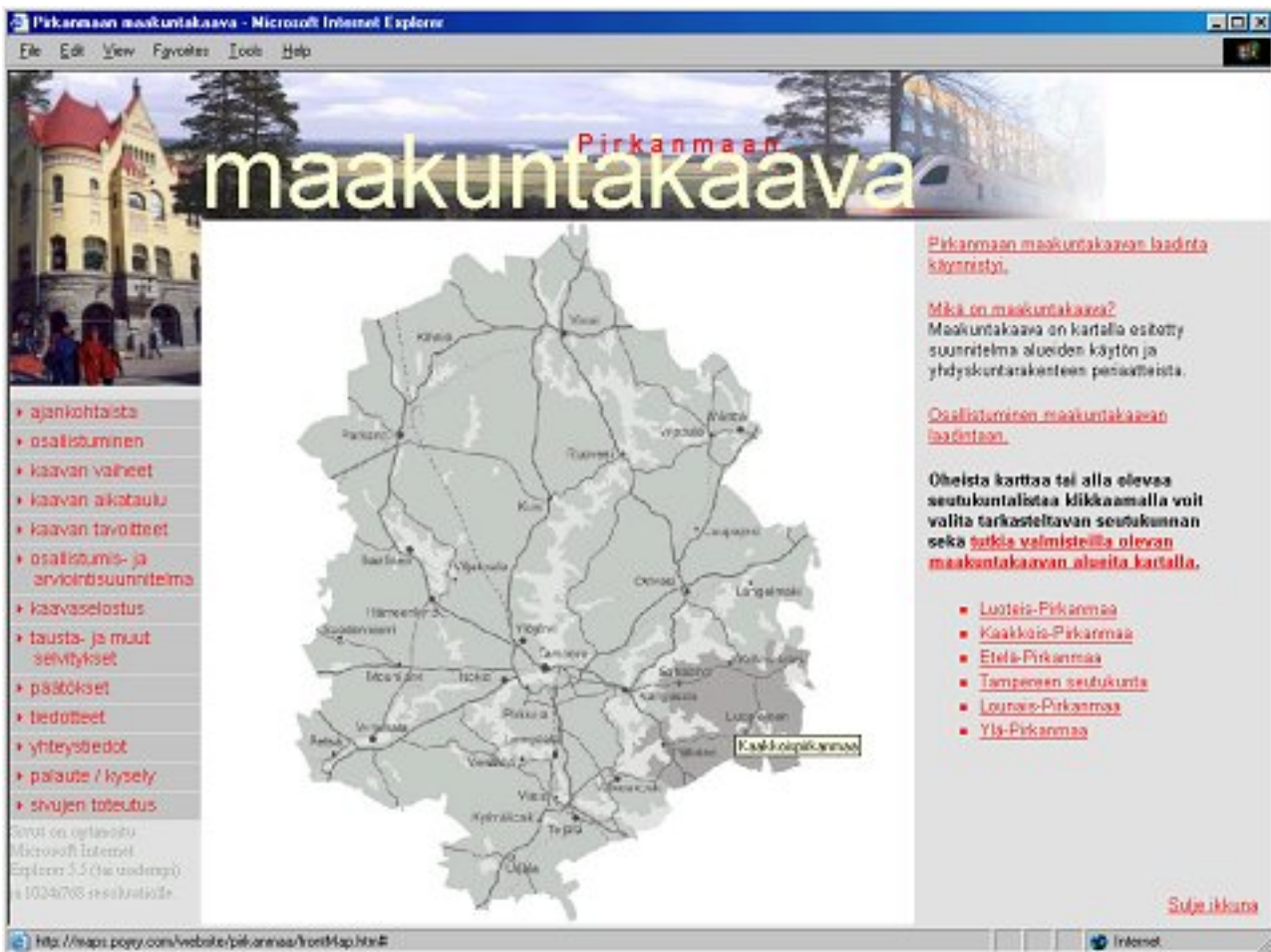
internet based technology. The complexity of planning issues and the significant role of political and logistical decisions together with the absence of familiar argumentation of urban design (“beautiful or not”) makes it hard for people without planning education to understand what regional planning is all about. By dividing the information to layers of e. g. transportation, housing and cultural heritage, a web based planning system can help citizens to see the “big picture” of the region by understanding it literally bit by bit.

The opportunity to give feedback, if used actively by citizens, is an important feature for the correct evaluation of plans in the process of environmental impact assessment. The social impacts of planning proposals cannot be accurately enough described only by using expert opinions. As an example, in the social context of a community there are several areas that are seen as distinct “places” in the local environment. Technically or purely ecologically these places don’t appear to be clearly different from others and they can only be identified by individuals who understand the history and the meaning of the neighborhood. At national level in Finland such "places" have been awarded the status of “national landscape” by the Ministry of Environment. Such information in the regional and local level is harder to collect without a feedback system. It has been often seen that people start actively protecting their environment only when they notice that there is a threat of change. Here a web based planning and feedback system can function as a messenger to both directions.

Through web based interaction tools regional planning can become much more sensitive to local environments and the planning organization can become more aware of the social landscape of their region.

Examples of interactive regional planning

The Council of Tampere Region is responsible for regional planning of the area around Tampere, one of the largest Finnish cities. The Council is preparing a draft of the third regional plan and currently publishes information about the existing plan. Tampere Region has a regional planning website that uses a map service from Soil and Water’s map server.



Picture 1: Tampere Region planning website

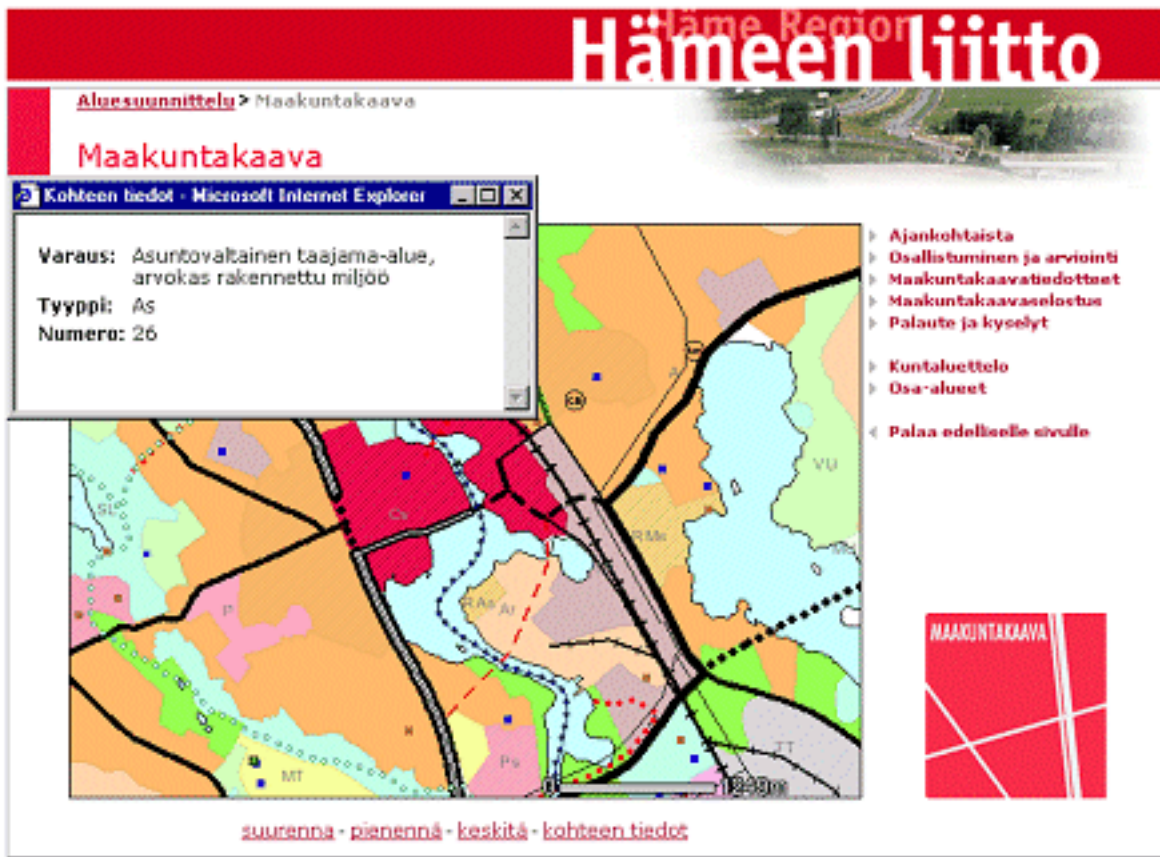
Besides an interactive map the planning web site presents a lot of other useful information about the plan: news, description and schedule of the planning process, documents, questionnaires, references to legislation etc.

According to Council of Tampere Region itself “The objective of the web based service is to organize interaction and participation of the planning work through the internet and to create a good basis for further development of internet based services during the planning process. We hope that this will encourage open and interactive working methods in land use planning.”

The neighboring Häme Region has a similar regional planning website. Besides other related information they use the web site to publish a draft of the Häme Regional Plan. Through an internet map service citizens can study the proposed draft and characteristics of the region and give feedback to the planners. In Häme Region development of participative planning links to the international Via Baltica Nordica Development Zone Project as one of its strategic subprojects.

Publishing of planning information

The planning information is published using an easy-to-use internet map server application. Citizens can study the information using a standard web browser. No plugins are required. The map server presents the data as an intelligent, interactive map on a web page.



Picture 2: Detail of the published draft of the Häme Regional Plan

With the tools below the map the user can select map content, zoom to desired area and query information about features shown on the map.

The interactive, web-based map has proven to be a powerful way to publish planning information to citizens. Especially in the case of a regional plan it makes the information more easily accessible to people than other channels. It is a good way to dynamically disseminate updated planning information to people throughout the whole planning process.

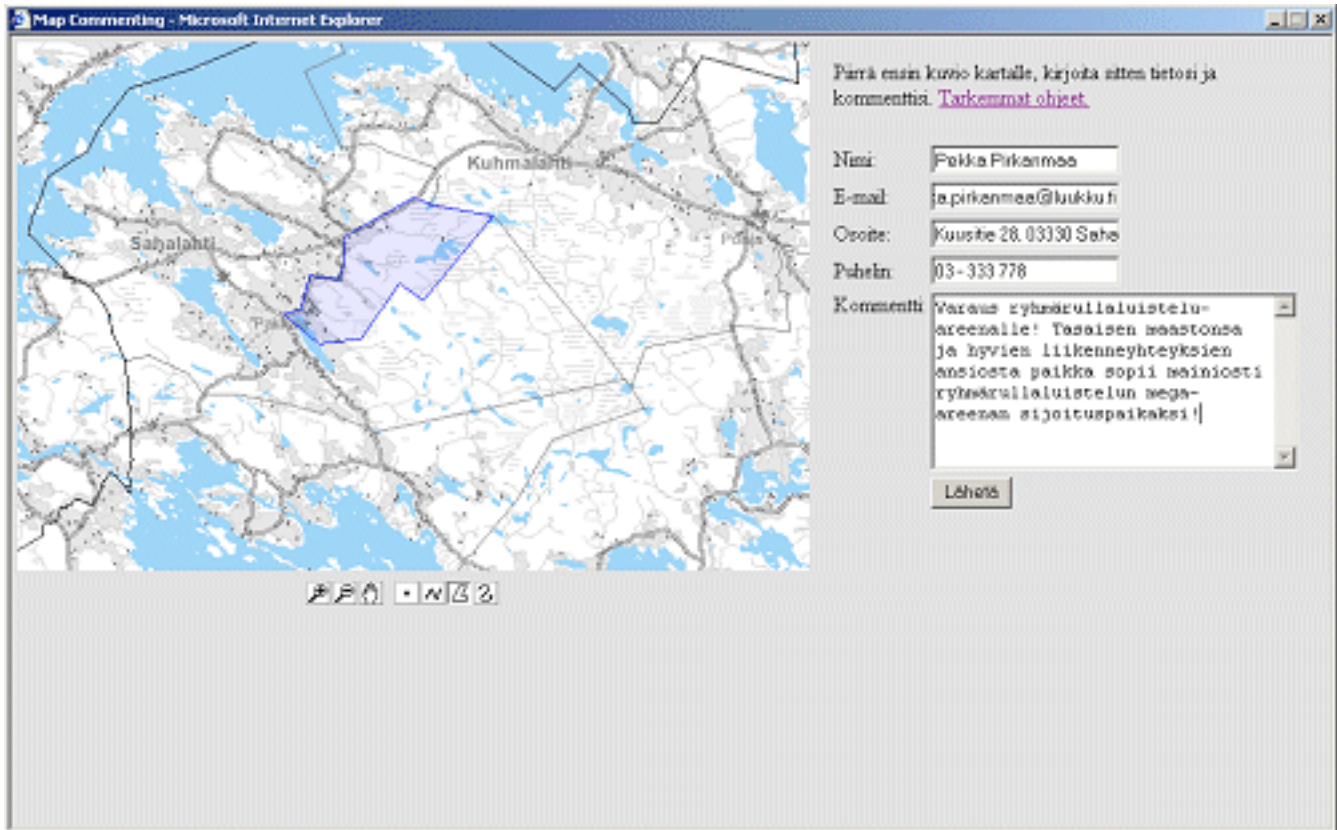
Tools for interaction

Citizens can easily participate by giving feedback and suggestions to the planners. In certain phases of the planning process electronic questionnaires are used for collecting people's opinions about the presented subjects. Receiving the replies in a digital table

format helps the planners in processing the feedback. The system also provides the planners convenient tools for analyzing and producing statistics and graphs of the data.

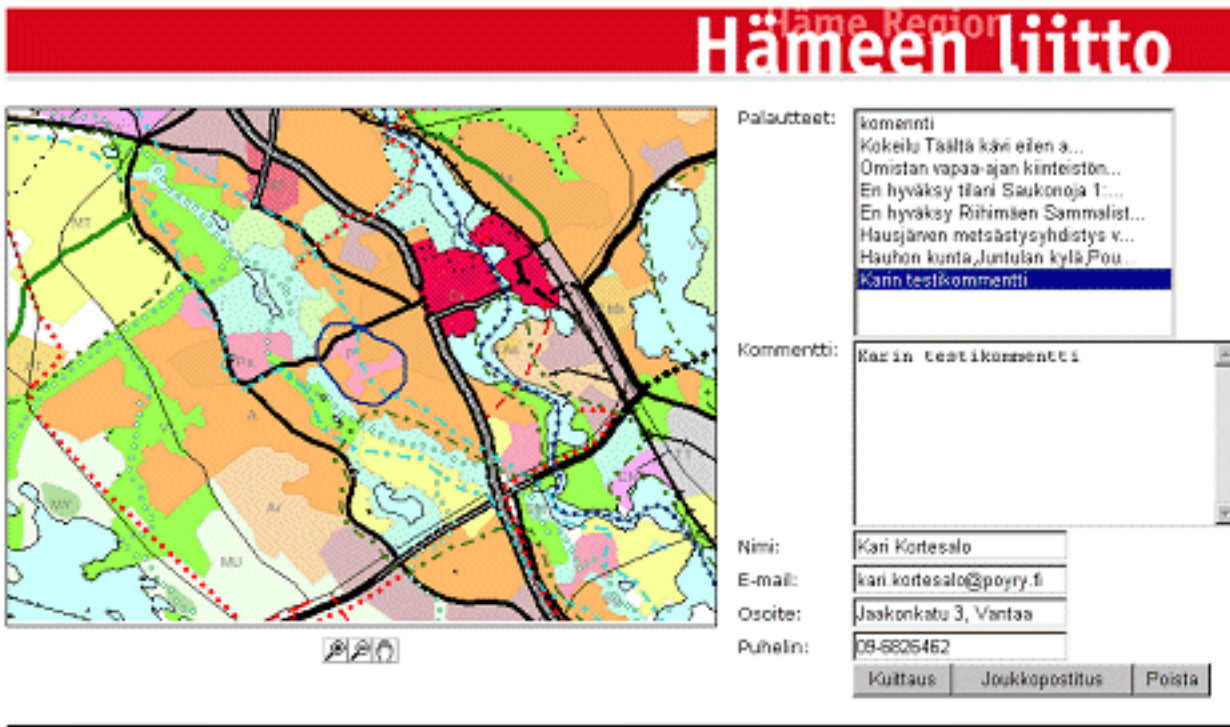
Citizens can also at any point of the process use the map to attach their comments to a certain place i.e. certain part of the plan.

The user picks one of the graphics tools and draws up a shape on the map. He then fills up the form on the right, leaving his comment and if so wishes also his contact data, and clicks on a button to submit his message.



Picture 3: Example of a map based comment (Tampere Region)

The planners have their own web interface that helps in managing the received comments. The comments can naturally be analyzed furthermore using GIS tools. Besides collecting citizen feedback the Council of Tampere Region has found that these “map stickers” support also communication between planners themselves.



Picture 4: Planners' interface for browsing the received feedback (Häme Region)

Activating citizens to participate

One of the crucial points in teaching people to use web based participation is to market it properly to the citizens. The first step is disseminating information through versatile media in the region, including internet and web based channels. The more ambitious and effective way is to widen the scope of the system and incorporate information of e.g. restaurants, events and recreational activities in the internet map server. If the system can help citizens in finding cultural events or the nearest beach it is likely to draw attention of some citizens almost unconsciously to the questions of regional planning. Soil and Water Ltd has been developing such "regional portal" in the region of South Karelia.

By and large, the internet based planning system can empower citizens to influence the regional decision-making and provide them with the intellectual tools needed in becoming an active, well-informed citizen.

Acknowledgements

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