

JatsiTatsi: Playful, Useful and Usable Public Information Visualization System

C. Coutrix¹, I. Avdouevski¹, K. Kuikkaniemi¹, E. Kurvinen², T. Laitinen¹, G. Jacucci¹

¹Helsinki Institute for Information Technology, Aalto University & University of Helsinki, Finland
²Elisa Oyj, Finland

Abstract

Traditionally, visualization systems were tailored for very specific work situation. Researchers have been trying to solve usability problems. However in public settings, we believe that a visualization system also has to be entertaining. In this poster, we present a system called JatsiTatsi for the visitors to visualize information related to a large public entertainment event, the Pori Jazz Festival. Our contribution is an interface that is tailored for this situation and takes into account a new dimension in the design of information visualization system: the fun users have with interaction, in addition to usefulness and usability. With the poster we present a video demonstrating the system.

Categories and Subject Descriptors (according to ACM CCS): H5.2 [Information interfaces and presentation]: User Interfaces—Graphical user interfaces

1. Introduction

Until recently, Information Visualization community has been focusing on the study of the visual representation of large-scale collections of non-numerical information related to particular work fields, e.g. software, physics, etc. The problem we tackle here is that the situation of use is not professional, but related to leisure. We present a system for the visitors to visualize information related to a large public entertainment event with 141,000 visitors last year, the Pori Jazz Festival (<http://www.porijazz.fi/>). Our aim is to allow festival's visitors to see, explore, understand and play with the information altogether.

The exact size of the database is not known yet at the time of the submission, but is expected to be similar to the previous year's festival: 160 concerts, 12 venues and 782 individual artists or groups. Each of these entries provide information with different media like text, picture, audio and video. Providing the festival's visitors with a visualization of this database has to take into account the situation of the interaction: leisure. Early iteration of participative design showed that "classical" visualization techniques, like treemaps, were not satisfying because they left the need of playfulness apart. The aim of the system we present here is to convey this large

amount of information in both a playful and usable way. We propose a visual representation and interaction techniques that take advantage of the human capabilities as well as the requirements defined by the particular situation.

2. Related Work

While entertainment events like the Pori Jazz Festival rarely provide their visitors visualization techniques apart from website with tabs, research has been carried out on visualization for non-work public settings. For instance *Memory [en]code* [SHDC07] is a tabletop system for a gallery, where displayed cells represent memory that users can read or create. We find another example in *Floating.numbers* (www.artcom.de) that was designed for museum settings to allow visitors to interact with a large list of numbers. [IHH*09] proposes a reflection on public information visualization systems. They point out their contextual, technological, perceptual and collaborative challenges. However, they only focus on challenges for usability and do not take playfulness into account, even though this was defined as a requirement in the case of our system.

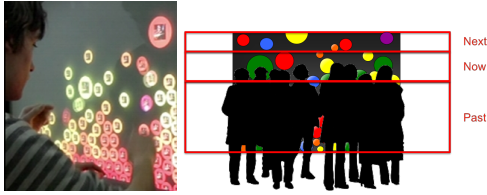


Figure 1: Users playing with the interface by throwing bubbles (left) and getting an overview of relevant data (right).

3. Design of Jazz Wall

We adopted a participatory approach for the design where stakeholders (researchers, users, business partners, etc.) gave input to the discussions.

On the information level, it pointed out the necessity to add practical information like places for food and drinks, public transportation or sponsors. Moreover, the information was tagged with time and location. We chose to use a large multitouch vertical display because of the opportunity it gives for a large dataset and simultaneous use by multiple people (Figure 1).

On the activity level, we designed the interface to support four activities: (1) Play with the interface, (2) Glance quickly to have an overview at new and close information, (3) Browse content in order find a particular information and (4) Add content by posting comments, pictures and videos. We adopted a "bubble" metaphor for its suitability the the four levels (Figure 1). Different type of bubbles corresponds to different type of information (artists, venues, map, clock, etc.) and relation between them is rendered through magnetic force that attracts them to each other if one is touched.

Firstly, the playfulness is provided through simple interaction with the bubbles encapsulating the information: thanks to the gravitation and magnetic forces applied to them, it is possible for users to only focus on throwing bubbles, dragging them in order to bump into others or using one to fire with another thanks to the repulsion force (see Figure 1, left). Early informal testing of the interface was encouraging and subjects reported the interface as engaging and fun. Secondly, in order to provide the ability to get an overview of recent updates and close upcoming information by quick glancing at the wall, a gravity force is applied to each bubble and the weight of each bubble is related to its timestamp. Doing so, relevant information is displayed in the upper area of the screen (Figure 1, right) and stays visible even if users are interacting in the foreground and occluding the rest of the display. Thirdly, browsing is possible by (a) touching a bubble, (b) enlarging it to expand/magnify its content and also by (c) combining bubbles together. For instance, in order to locate of a venue, users drag a venue and a map bubble on top of each other so that they become a single bubble displaying the venue on the map. More elaborate combina-

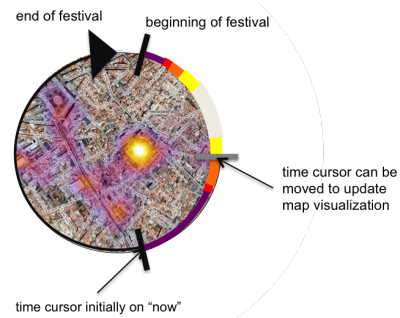


Figure 2: Map and Time bubble combined to get heatmap and time.

tion were defined like heatmap and timeline when combining map and clock bubbles (see Figure 2). Finally, we enable users to leave a personal trace on the wall by commenting or adding user-generated content like text or pictures. Messages can be sent through users' mobile phone to (1) react to a particular bubble or (2) react to the whole system. In both cases, a new bubble is created and drops down from the top of the interface. In the first case, the reaction (text or picture) is displayed as a bubble attracted to the main one and allows displaying a feed of reactions around the targeted bubble. In addition, this capability of the interface provides us with a tool to study users' interaction complementary to other methods like interviews or video analysis.

4. Conclusion

We believe playfulness has to be taken into account in order to entice potential users in a public place, in addition to usefulness and usability requirements. The JatsiTatsi system is meant to illustrate this idea. It will be installed at Pori Jazz Festival from July 17th to 25th where we expect thousands of visitors. We will then evaluate its use through usefulness, usability and playfulness. We would like to get feedback from the EuroVis community through our poster and our video demonstrating the latest version of the system.

References

- [IHH*09] ISENBERG P., HINRICHS U., HANCOCK M., TOBIASZ M., CARPENDALE S.: Information visualization on interactive tabletops in work vs. public settings. In *Proceedings of the Workshop on Collaborative Visualization on Interactive Surfaces (CoVis 2009)* (2009), Technical Reports series of the Department of Media Informatics of the Ludwig-Maximilians-University of Munich, Germany.
- [SHDC07] SCHMIDT H., HINRICHS U., DUNNING A., CARPENDALE S.: memory [en]code - building a collective memory within a tabletop installation. In *Proceedings of Computational Aesthetics in Graphics, Visualization, and Imaging (CAe'07)* (2007), Eurographics Association, pp. 135–142.