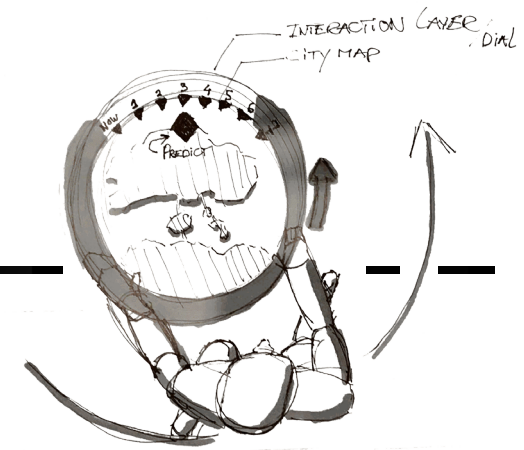




Interactive Event Map



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Abstract

The interactive event map gives event organizers a novel way to promote their events to people in public spaces [3]. Users physically interact with the installation to receive information about events that are occurring at different venues in the city. Our intended target group are people in public spaces, with a particular focus on travelers and visitors that are new to the city. We think they will be most interested in participating in events that the map can inform them about. We strived to create an aesthetic tangible user interface using computational bits [1] and wooden materials. We reflect upon the feedback we received from our users during a public event where we exhibited the event map.

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Author Keywords

Tangible user interface; embodied interaction; public installation; event promotion;

Keywords

H.5.2 [Information interfaces and presentation]: User Interfaces

Introduction

We start off explaining the overall interaction flow of the EventMap, then discuss the decisions we have made based on conclusions that our project group has drawn from user testing and prototyping.

To give event organizers an effective and unobtrusive way to promote their events, our prototype should give actionable event information while creating an enjoyable experience. To this end, knowing the advantage of natural materials on unique affordances, qualities and aesthetics [4], and benefits from embodied interaction on enhancing experience, we scope our design problem as follows:

How can we promote events in a tangible and enjoyable manner to people in public spaces?



Figure 1-4: Interaction Flow

Interaction and Design

The event map has several controls that users can engage with to retrieve event information. We give user control over the date, event type and location of an event through the rotatable outer dial of the map, the color of the LEDs and buttons under the buildings (see *figures 1-4*). The outer dial is connected to a rotary encoder which senses discrete stops of rotation. We use this rotation as an input to change the day for which event information is shown. The color of the LEDs represents the type of event that is taking place. The buildings act as buttons. Users can push these buttons, which activates the printer to print out the date and

location to remind the user about the event. These inputs get processed by an Arduino which communicates with the Raspberry Pi that retrieves JSON data regarding events from an event website (see *figure 5*).

Working with wood allowed us to create an aesthetic design while also creating a robust prototype. To strengthen the feeling of a tangible physical device we choose to use the thermal printer over using digital displays to convey the event information to the user.

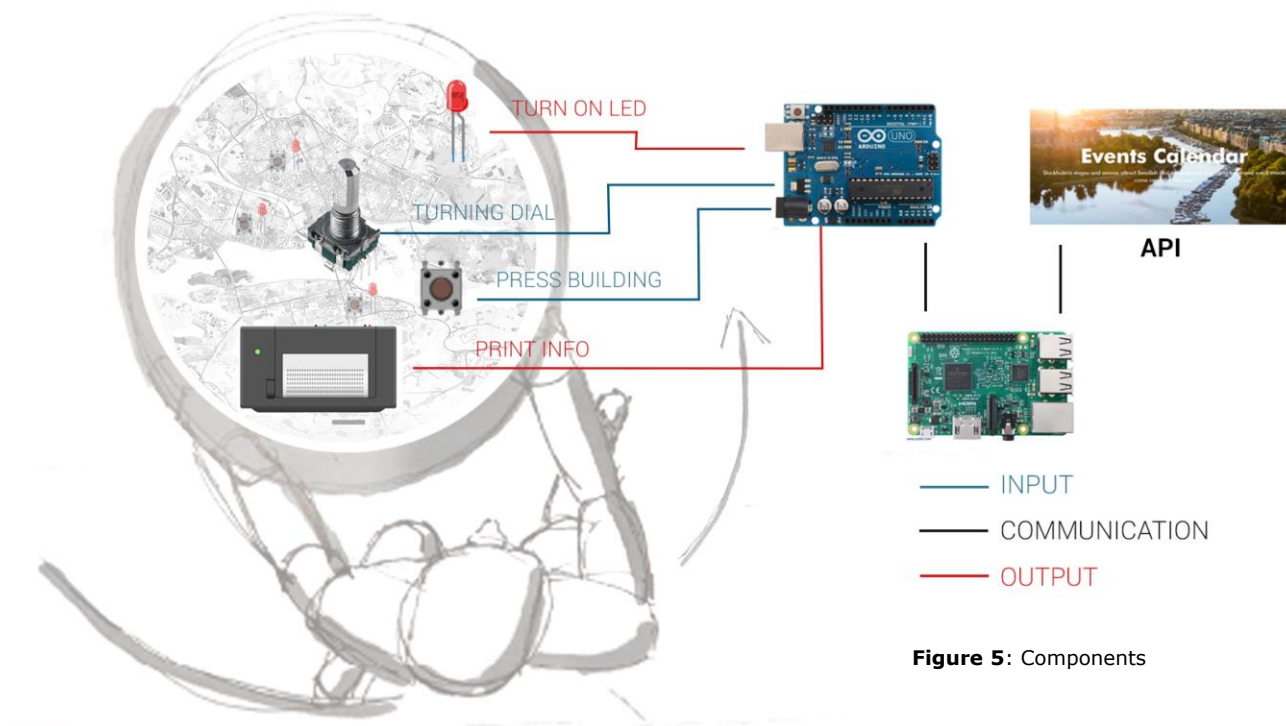


Figure 5: Components



Sources of inspiration

Kulturhuset in Stockholm exhibits an impressive large map that users can walk on. Particularly looking at their approach to modeling the map helped us understand what should be prioritized in the design. Furthermore we came up with the idea to create buildings on our map by looking at old maps that featured the most important buildings in the city on a large scale relative to the other graphic design elements.

Use-case

Our table gives event organizers another way to promote their events to users in public spaces. This physical interactive setup is distinctly different from online ads or posters, therefore we believe it will be a positive experience for people interacting with the installation and the organizations who want to promote their events.

Design for a public space

We designed the table for the public space in which it is intended to function. Designing for a public space has informed several choices that we have made.

First off we thought about the initial interaction between the user and the table. We wanted the table to be usable for people coming from any direction. Therefore we decided to create a circular design for the outer dial, which is one of the main inputs of the map. Anyone can turn the dial, whether you stand in front, next to or behind the map. We believe that making the table approachable and usable for multiple users around the table is an important quality that can also facilitate interactions between people. Furthermore we wanted to let the user know that the table has detected his or her presence. We printed a welcome message for

users that approached the table by implementing a distance sensor that detects proximity.

After initial contact with the table we wanted the table to communicate clearly how to use the controls to extract the information from the table. Besides the instructions on the welcome message we implemented use-cues in the outer dial, buildings and lights that we used. We fixed a wooden handle to the outer dial to indicate it could be rotated. We fixed a pointer on the opposite end of the table to indicate which day was selected by the user. We detached the buildings from the map, so that the user can see there is space for the building to be pushed downward. The baseline requirement for the table is that all users should be able to finish the interaction cycle with the table from beginning to end. We have thought a lot about how to communicate the function of our controls to users. While there are many potential improvements to be made we have witnessed during a public exhibition that users understand many parts of the interaction because of the use-cues that we have implemented.

To finish the interaction we wanted the user to have a reminder of the event to take with him/her when leaving the table. We decided to print the event's date, location and trivia on a receipt that users can take with them. For us the most important action at the end of the interaction is to give the user a way to look up the event information again after they walk away from the installation. Giving the user a tangible receipt as a reminder makes it easy for users to look up the info again.



Figure 6-9: Public Exhibition

Limitations

The main interaction design challenge we faced was to invite users to physically press the buildings. There is a common understanding in musea that users should not touch any of the exhibited pieces. Since our installation looks very crafted it sends the same signal to users: “Do not touch”. This stands in stark contrast with our goal to let users freely explore by clicking on buildings and rotating the dial. We received feedback from users during our public exhibition that the need to push the buildings was not well communicated. In hindsight we think visible real buttons are the best way for users to understand how to interact with the installation [2], rather than using the buildings as buttons themselves. We chose to hide the buttons by placing the buildings on top of them, thinking it would be more aesthetic. However, this reduced the clarity of the intended interaction of the installation. Another point of feedback was the confusion about which buildings our models were supposed to represent, as the building names we printed on the map were not clearly linked to them.

Further work

An important feature for this installation to have is a simple interface for event organizers to upload their event information. We have set up the infrastructure for this by creating a mock-up website from which we retrieve JSON event data. As a real product we can give event organizers the ability to share the information they wish to convey.

An additional feature we would like to explore is to convey event information by sending it to a user's phone. It was not feasible within the scope of our project to create a user-friendly manner in which users

would be able to store, retrieve, and update event information on a digital device.

As a closing thought on design we envision the event map being displayed below the floor, while users are interacting with it by walking on top of it similar as Kulturhuset's exhibited map. Combined with the interactive elements we have explored we believe users will be excited to interact with such an installation.

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