SMSlingshot: A Shared Encounter in Urban Space

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This abstract outlines the usage of the mobile interactive system SMSlingshot.

Media façade. Mobile tangible user interface. Social Technology.

SMSlingshot is a media installation situated in Urban Space. The interactive system consists of a mobile device called SMSlingshot and a rendering PC. The slingshot allows users to shoot personal messages to media façades or projections and comment there with urban spaces. The device is equipped with an xBee transceiver, ATmega328 microprocessor, green laser and batteries. The text messages are typed on a wooden phone-sized keypad which is integrated in a wooden case. After a message is typed, the user can aim at a media façade and send/shoot the message straight to the targeted point. It will then appear as a coloured splat with the message written within. The text message will also ‘tweeted’ in real-time.

To create a smooth and magical user experience, most of the technology used recedes into the background. Also the projection integrates into the built environment by using the natural borders of the buildings, which it is projected onto.

The rendering PC is usually placed near the projector, because a connected camera needs to capture the projection space in order to determine the spot aimed at by the slingshot. The exact x/y position is recognized by the camera because of the green laser that lights up when a user pulls the sling.

To receive typed messages from the SMSlingshot, a custom made xBee modem is connected to the rendering PC. It receives the message, chosen colour and slingshot ID. Since the transfer speed of the xBee is rather slow (19200 bps) the communication between slingshot and render PC has been split into two phases – pull and hit. The entered message, colour code and ID are already sent when the user pulls the slingshot. This leaves less data to be transmitted when the actual shot is done (release sling) and thus guarantees that the splat can be rendered as close as possible to the point when the rubber band is snapping.

To prolong the haptic and physical feeling of the SMSlingshot on the screen, a splat has also physical properties and is rendered in different phases. There is a flight phase, which shows how a colour bag is flying towards the targeted point, an impact phase where particles spray over the nearby area, a phase when the splat colour drips towards the ground and finally a phase when it disappears from the screen.

The application is written in Java using the Processing library and is designed in a scalable way that allows easy integration for other input devices. Currently we are working on a distributed version of the installation that allows shooting messages from one place to another.

Figure 1: Distant and nearby people observing the performer (left). A performer is showing-off with extreme gesture (middle). Some splats shot by the slingshot (right).