

# Demo: Mobile Interaction with Ads on Public Display Networks

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## ABSTRACT

In public places we can observe that many conventional displays are replaced by digital displays, a lot of them networked. These displays mainly show advertising in a similar way to television's commercial break not exploiting the opportunities of the new medium [1]. Several approaches of interaction between mobile devices and public displays have been investigated over the last 15 years. In this demo we concentrate on challenges that are specific to public displays used for advertising. In particular we focus on how new approaches for interaction with content, means for content creation, and tools for follow-ups can be implemented based on mobile devices. With Digifieds we present a research system that has been used to explore different research questions and to showcase the potential of interactive advertising in public space.

## Keywords

Digifieds, public displays, interaction, urban computing

## Categories and Subject Descriptors

H.4.3 [Information System Applications]. Communications Applications— Bulletin Boards

## 1. RESEARCH CHALLENGES & GOALS

When designing and implementing public display networks, the research challenges span from technical issues related to display technologies and networking to challenges in HCI and user acceptance. The central goal is to create an infrastructure valuable to the users that has at the same time a valid business model. This can be achieved by creating systems mixing information and ads.

In order to do this, very basic challenges have to be addressed:

- **How to capture a user's attention?** In order to be of any value it is essential to make the user aware of displays and to communicate that there is something to see. Without mobile devices this is usually done by graphical means (e.g., eye-catching content). When using mobile devices these can also be used to draw the users' attention towards the display.
- **How to communicate interactivity?** Given current installation users do not expect interactivity; hence it is a challenge to show the users that there is an opportunity for interaction. This can be supported via mobile devices, e.g., by providing messages that offer direct means for interaction or by providing a generic mobile client as means for interaction.
- **How to support workflows across devices?** In many cases the interaction should not be limited to a single point in time. Supporting interactivity over time and with different devices provides new opportunities. Relating advertising content to search carried out on the mobile device or to activities is one option. Another challenge is to provide means for users to take content and interaction with them, e.g., interaction on the public display while waiting for the bus and then taking the content with them on the bus.



Figure 1: Digifieds can use the mobile phone to attract attention and enable content exchange with public displays.

- **How to lower the bar for users to become advertisers?** Advertising on public displays is so far restricted to big players. By integrating mobile devices it may be feasible to make such systems more open, similar to public bulletin boards. How users can create and post content and personal ads as they are on the move is a resulting question.

## 2. ARCHITECTURE

The Digifieds platform used to carry out our research consists of four components: (1) a central server back-end for the data, (2) a web-based display client for visualizing information and direct interaction, (3) an Android mobile client, and (4) a web client.

To tackle our research challenges we aim at using the mobile client in the following ways. The *user's attention* can be raised through push-based notifications as they enter the display vicinity. *Interactivity* can be communicated through attract sequences showing how to interact. *Workflows across devices* are supported by Digifieds through enabling the exchange of content via QR and alphanumerical codes. Digifieds is targeted at individuals who want to advertise items through classified ads, as well as to retailers and event organizers to post professionally designed content.

## 3. DEMO SETUP

Our demonstrator consists of a display node that is connected to the Digifieds network. Visitors will be able to install our Android application, (available from the Android Market) or use one of our demo phones to try out the system and interaction techniques. By showcasing ways of raising the users' attention, communicating the interactivity of our application, and different interaction techniques we aim at triggering a discussion about how to best implement future advertising applications for public displays.

## 4. CONCLUSION

Advertisements on public displays need to become more attractive in the future in order to raise the interest of passersby. Attracting the user's attention, communicating interactivity, and supporting intuitive interaction techniques are essential. The Digifieds installation shows how the mobile phone can be used to achieve this.

## 5. REFERENCES

- [1] Alt, F., Schmidt, A., Müller, J. Advertising on Public Display Networks. In: IEEE Computer (to appear), 2012.