Chapter 9

View and Share:
Exploring Co-Present Viewing and Sharing
of Pictures using Personal Projection

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ABSTRACT

Co-present viewing and sharing of images on mobile devices is a popular but very cumbersome activity. Firstly, it is difficult to show a picture to a group of friends due to the small mobile phone screen and secondly it is difficult to share media between multiple friends, e.g., when considering Bluetooth usage and technical limitations, limited input and repeated user interactions. This paper introduces the View & Share system which allows mobile phone users to spontaneously form a group and engage in the viewing and sharing of images. A member of the group has a personal projector (e.g., projector phone) which is used to view pictures collaboratively. View & Share supports sharing with a single user, multiple users or all users, allows members to borrow the projected display and provides a private viewing mode between co-located users. This paper reports on the View & Share system, its implementation and an explorative user study with 12 participants showing the advantages of our system and user feedback.

INTRODUCTION

We share photos to communicate our experiences; we use the task as a mediator to re-create the past and re-live the experience with others. The co-present viewing and sharing of media between friends provides communication of this experience between several people and often results in a collaborative task, lending to storytelling often with those who were there at the time the photo was captured. Frohlich, Kuchincky, Pering, Don, and Ariss (2002) suggest that the co-located sharing of photos, face to face, is a desirable activity and is the most common and enjoyable method to share photos.

Typically sharing a photo with multiple co-located people requires users to gather around a single mobile device, or requires the device to be passed from person to person. Although this fulfills the requirement of sharing, one could argue that
this experience is not exploited to its full potential. The experience represents a distributed nature and is not consumed by all simultaneously. Ah Kun and Marsden (2007) presented a prototype application which supports the sharing of photos between multiple devices. Here the devices were synchronized to support co-present sharing between users. Although this is a great step in alleviating the need to pass the device between users, the sharing semantics (used here and also described in similar work) require that content is shared with everyone in the group and the small screen problem is still evident. It could also be argued that users are directly engaged with their own mobile device rather than with each other, thus limiting the social interaction between users.

Using additional displays or large screens in the environment are alternative solutions to view media between several people (Taylor & Cheverst, 2009). Unfortunately such displays are neither readily available nor easily accessible, and certainly destroy the degree of portability that the mobile phone provides. These alternative solutions do not often reside in the comfort of our own personal spaces or our working environment. Taylor and Cheverst (2009) also report on a lack of willingness in participants interacting with a situated display and often needing encouraging doing so. This suggests that an element of social embarrassment could be the underlying reason. Interactive surfaces are another solution, which amongst other things, support the viewing of pictures by multiple people, provision novel and easy user interactions. However, they are deficient in availability, restrict the user to a certain environment, prove costly and lack portability.

Personal or pico projectors have recently become commercially available in two forms. Accessory projectors are small battery powered handheld projectors which can be coupled with mobile phones and devices, for example the Optoma Pico DLP Pocket Projector. Projector phones are mobile phones with embedded pico projectors, for example Epoq EGP-PP01. It is expected that consumers will see widespread emergence of these devices by 2010 (McGregor, 2009).

Personal projection significantly changes the way we can view and share media between groups of friends. The large projection affords simultaneous viewing of content by many co-located users. In doing so, it is not necessary to transfer content between devices, which can be problematic. Users simply have to look at the projected image in the comfort of their current surroundings. The sharing of pictures with friends depicts the transferring between two devices, the large display removes the need to transfer content between devices to achieve sharing and permits co-present sharing through viewing. Here several users are simultaneously engaged with a single display, rather than isolated with their own devices. We believe that the co-located viewing of content in this way enhances the viewing experience and social interaction between friends.

In this paper we present and describe View & Share, a mobile application which supports the co-present viewing and sharing of media between friends (Greaves & Rukzio, 2009). A personal projector is combined with a mobile phone and is used to project a large mobile display allowing users to simultaneously view media. For the majority, the task of sharing is focused on and orientated around the owner of the content being shared. We introduce an alternative sharing style which changes the typical role of sharing. Here we focus on the intended recipient as the one to infer sharing rather than the owner. Using View & Share, sharing content between mobile devices is simplified; it is quick and effortless, whether sharing with a single recipient, multiple or all recipients. We also introduce two novel concepts; the viewing of private images in public considering the high degree of attention that a mobile projected display attracts, and allows other users within the group to borrow the projected display which allows sharing of their content without having to own such a device. We report the findings of an explorative user study whereby 12 participants
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