

# Implicit Participation from a Glance

Darius Garnham  
University of Wales, Swansea  
FIT Lab, Computer Science  
Swansea University  
Wales, U.K.  
[csdg@swansea.ac.uk](mailto:csdg@swansea.ac.uk)

## ABSTRACT

In this paper, we describe studies which have looked at the value and comparison of group participation methods considering mobile interaction with Large Public Displays

## Keywords

Public Displays, Mobile Interaction, Social Dynamics.

## 1. INTRODUCTION

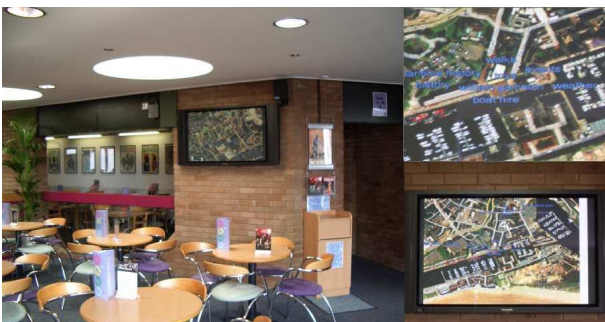
Large Public displays are slowly embedding themselves around us in our everyday activities, but how can we use current mobile devices to augment/extend these possible avenues of interaction.

Group participation with large displays, has many benefits and avenues to consider such as detection of users and reflecting choice through collective decisions/influence [3]. Our research looks at how best this is this achievable with current mobile devices and in what ways it changes the interaction model between mobile and public displays.

## 2. Case Studies

### 2.1 Asynchronous Interaction

This involved a study which considered the use of information previously captured from mobiles of users unconcerned with how their content would later be repurposed for the large screen, which we then repurposed for displaying their mobile activity. Large screen displays were used to show bystanders the search queries made by other users while mobile [1].



"Public displays in a cafe showing search terms made by mobile users in the area"

### 2.2 Synchronous Interaction

When we consider previous work, we discover that camera usage [2] of mobiles phones can allow a more personal connection with user and the display, but what happens when we consider developing world situations? These contexts are often less technically developed and where several people may share one

phone. This leads us on to the display itself and possible sensors around it. We will have to consider in less technically sophisticated (fortunate) situations, how to use current technologies present to help them.

For this study we will consider how implicit actions of groups can influence to the visualisation of information present upon the display. We will consider the use of computer vision techniques to detect crowd numbers for real time update and reconfiguration of information being displayed.

We will be evaluating algorithms developed for effectiveness and comparisons with others. The detection of crowd numbers and the impact they have on the display, could give an interesting view of how people interact and could propose new ways to augment interaction in the future bridging mobile and public large screen synergy.

From these observations we plan to understand possible future mobile device interactions which could be revealed through gestures exhibited while present at the display.

## 3. Future Work

These studies will have revealed certain aspects of the problems and needs required for the combination of both forms of communication, taking group (social awareness) into consideration. The next work would be to combine (develop), find a need which could be fulfilled by this combination of technologies. Whether it is to help the cohesion of different social groups, or even promote awareness within a location, hopefully these issues, coupled with discoveries of these studies can lead us to some answers, and possible avenues.

## 4. REFERENCES

- [1] Garnham, D., Buchanan, G. & Jones, M. (2008). Incidental Mobile Information and Large Public Displays. ACM Computer Human Interaction conference 2008 Workshop on Designing and Evaluating Mobile Phone-Based Interaction with Public Displays.
- [2] Miyaoku, K., Higashino, S., and Tonomura, Y. 2004. C-blink: a hue-difference-based light signal marker for large screen interaction via any mobile terminal. In *Proceedings of the 17th Annual ACM Symposium on User interface Software and Technology* (Santa Fe, NM, USA, October 24 - 27, 2004). UIST '04. ACM, New York, NY, 147-156. DOI=<http://doi.acm.org/10.1145/1029632.1029657>
- [3] Tang, A., Finke, M., Blackstock, M., Leung, R., Deutscher, M., and Lea, R. 2008. Designing for bystanders: reflections on building a public digital forum. In *Proceeding of the Twenty-Sixth Annual SIGCHI Conference on Human Factors in Computing Systems* (Florence, Italy, April 05 - 10, 2008). CHI '08. ACM, New York, NY, 879-882. DOI=<http://doi.acm.org/10.1145/1357054.1357193>