

# A Review on Use of Public Displays in Location - Based Service

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**Abstract:** *Public displays are increasing in public places to support community and social activities. However, a major problem notices with this emerging public display is the resistance by the public to participate and interact. A major reason is due to feelings of social embarrassment that often act as a barrier. This paper is concerned with why this scenario is and how this can improve the design of public interaction. It focuses on how researcher is working to improve the design of public interaction as well as a group of people socialize and participants on public display. Similarly, how it influences for better location based service It will be described how this public display perceived by users as well as the researchers works for better involvement of public participation.*

## 1. Introduction

Recent years have seen the spread of public displays are commonly used to inform the public in airports, campus, shopping centers, office buildings, and subways. This public display is rapidly growing to public use with the purpose of displaying awareness and other types of information. The aim of this work is to offer researchers and designers, concrete, ecologically valid knowledge about the use of large ambient displays in public settings based on actual practices that can be used to grind and inform the design and deployment of future large display information systems. This work reports on the findings of field observations of 46 large public displays located in Western Europe by examining current and public large ambient information displays [1]. The researchers tried to answer from the evaluation of public displays based on different objectives such as audience behavior, user experience, user acceptance, user performance, effectiveness, privacy and social impact [2]. Identifying the rate with which information is updated in public displays, also actions major kind of information chunks to support, together with planning and opportunism as strategies to deal. A workflow of how people deal with actions that show tasks and resources that need to be supported and including a reconstructed information flow model that drives system design. An information system consisting of news and reminder displays, which integrates findings and was successfully deployed and evaluated in university settings [3]. In this paper, they describe a public navigation system which uses adaptive displays as directional signs. The signs are position aware and able to adapt their display content in accordance with their current position. The advantages of such navigation system include improved flexibility, dynamic adaptation and ease of setup and maintenance [4]. The exploring of how an interactive display can be used in the background

to enrich casual interactions of the people nearby, by seeing the presence of those people, looking up profile information about them and displaying selected information as they are gathered next to the display [5].

The plasma posters are plasma displays with interactive overlays, orient in portrait format, that enable direct touch interaction, designed for placement in public spaces to facilitate multimedia information sharing. The design goal is to provide an easy, socially acceptable way to share multimedia content, and thus to promote polite, non-intrusive, "walk-by" information encountering [6]. By using semi-public displays can make certain types of information visible in the environment, promoting collaboration and providing lightweight information about group activity. It supports and enhances the interactions and information that group members, utilize to maintain awareness and collaborate [7]. The investigation into public display research by advocating the use of public display of stimulating passive engagement, active engagement, and discovery. Their model is based on own observations of people engaging with and around the Fun square over two days at two locations in a city center [8] With a goal for a single display to fluidly serve the dual role of public ambient or personal focused display depending on the context that is inferred from a few key variables, including an individual's level of attention to the display, and the relationship of available information to an individual currently near the display [9]. They present Eye guide, a wearable system that allows the user to obtain information quickly from a public display without sacrificing privacy. To this end, Eye guide employs a lightweight head-worn eye-tracker for hands-free object selection and an earphone for private communication [10].

## 2. Evaluation

**Table 1:** Evaluation of different research article on Public Display

Citation	Summary	Main goal	Relevance	Future work
Huang, Elaine M., Anna Koster, and Jan Borchers. "Overcoming assumptions and	This research result suggests that the ultimate position and context of the display should be taken into account during the design phase rather than after	The target audience and locations should be considered for the content of public displays. Field studies of 46 large displays in Western Europe	It examines sorts of large displays and display content as well as perform case studies in different	Use of micro shadowing technique in a crowded area because this technique was not able to catch all the people's response. Unable

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uncovering practices: When does the public really look at public displays?"	the fact.		locations.	to handle large, crowded people interacting public display at the same time
Alt, Florian, et al. "How to evaluate public displays".	This work suggests for understanding the environment and its challenges before the deployment of public display is crucial. Behavior in public space may be very different than what is expected from lab studies. Help researcher practitioners to choose an evaluation method for their public display.	In case of public displays is, by their nature, a very social phenomenon. Behavior in the public space may be very different than what is expected from lab studies. Therefore, ecological validity is often prioritized over internal and external validity.	This paper extracted the most common research question, research types, and methods and presented selected examples. It also provides guidelines for researchers to help inform the design of public display studies.	Measuring the effectiveness of public display is difficult.
Joerg Mueller, Oliver Paczkowski, and Antonio Krüger. "Situating Public news and Remainder Displays."	The goal of their system was to provide useful information for large user groups	To understand the values of their users towards a Situated Public Display system, they conducted a laddering analysis, interviewing 24 students. They decided to focus on the value of success first and build a system that would provide useful information for students on a daily basis.	It presents the concept for and experiences with a situated public display system deployed in a university setting. They identify the rate with which information is updated as an important property to distinguish different kinds of information.	They have found many well-known lessons approved in the context of situated public displays such as deploy or die, do requirement analysis, provide immediate benefit for all stakeholders, provide 24/7 reliability by using standard hard and software, the update rate of information is especially important. Identify sources, filters and forwarders and win
Kray, Christian, Gerd Kortuem, and Antonio Krüger. "Adaptive navigation support with public displays."	In this paper, they describe a public navigation system which uses adaptive displays as directional signs. Each sign is autonomous wirelessly networked digital displays connected to a central server. The signs are position-aware and able to adapt their display content in accordance with their current position.	The advantage of such a navigation system includes improved flexibility, dynamic adoption and ease up setup and maintenance. It enables untrained users to easily setup a set of dynamic signs that will automatically adapt to their current location.	The displays are mounted to walls where they provide passersby with directional information.	The system unable to support multiple concurrent targets as well as individual routes.
McCarthy, J. "Using public displays to create conversation opportunities."	Exploring how an interactive display can be used in the background to enrich casual interactions of the people nearby, by sensing the presence of those people, looking up profile information about them, and displaying selected information as they are gathered next to the display.	Group cast explores what kinds of content would create opportunities for informal interactions in open areas in the workplace. Map often acts as attractors: people naturally gravitate toward maps, especially they are mounted on walls, and even more so when they are large.	Two applications/ installations of public displays are described in this paper: Group cast and the interactive wall map.	For further public displays need to address this issue: identifying people or objects nearby, acquiring profiles, acquiring and maintaining content, determining the interaction.
Churchill, Elizabeth F., et al. "Sharing multimedia content with interactive public displays: a case study."	The plasma posters are plasma displays with interactive Overlays, orient in portrait format, that enable direct touch interaction, designed for placement in public spaces to facilitate multimedia information sharing.	The design goal is to provide an easy, socially acceptable way to share multimedia content, and thus to promote polite, non-intrusive, "walk-by" information encountering.	Plasma posters are large screen, digital, interactive poster-boards situated in public spaces, designated to facilitate informal content sharing within teams, groups, organizations and communities.	Further design includes personal and online community web pages; offering a provision for directed content posting to specific plasma posters; and collecting ratings and mining logged activity data for automatic reposting of popular content and as feedback for content authors.
Huang, Elaine M., and Elizabeth D. Mynatt. "Semi-public displays for	Their design addresses the largely unexplored space of shared public displays to support small, co-located	By using semi public displays can make certain types of information visible in the environment, promoting	It supports and enhance the interactions and information that	Their future evaluation plans include the continuing administration of questionnaires to understand

small, co-located groups."	groups, delineated by the box in the central.	collaboration and providing lightweight information about group activity	group members, utilize to maintain awareness and collaborate.	its effects on awareness and collaboration over time.
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### Response

Public displays are often assumed to eye-catching and appealing to people, but research shows that glancing and attention at large displays is complex and dependent on individual usage and demands. I fully agree with target audience should be taken into account when- ever possible while creating the content, application and presentation of public displays [1]. Researchers need to clear about their research questions and should then decide whether to run a description, relational, or experimental study [2]. Obviously clear vision and goals should be decided first to initiate public displays. Similarly, consider their impact on the context and understand the users demand. They have suggested issue to be addressed such as identifying people or objects nearby, acquiring profiles, acquiring and maintaining content, determining the interaction [5]. suggestion also given by them which are as deploy or die, do requirement analysis, provide immediate benefit for all stakeholders, provide 24/7 reliability by using standard hard and software, the update rate of information is especially important. Identify sources, filters and forwarders and win their support [3] which I fully agreed. Every design is a success and even grab people's awareness, but still this all design have learned a lesson which needed to address to make it more interactive and involving the public. Also, plasma posters are a success, but also need some point to be added to it like the participatory design, means not ends, low effort to use, fit with existing practices and so on [6]. So, in my point view the display should be regularly monitored and update their information. Otherwise, in Oulu, one of the displays from the library to be removed due to display to be disruptive, mainly used for gaming purposes than its intended one [11].

### 3. Conclusion

This paper has presented evaluation essay from a different research papers about using public displays in location based service. Based on reviewing the literature and findings, it discusses their goals, challenges, evaluation, and response. The result of this work gives the overview of public display, their current status, and scenario. Similarly provide the glimpse of applications in location-based service attached to public displays to aware and provide interaction on a public. It provides the general idea of public display and their status by a different literature which tries to support and make public display more interactive and use as their intended purpose. From [11] this paper, they have argued that even well-received prototypes that have been successful for years can see a drastic and an unwelcome decline in popularity and perceived usefulness of the general public after researchers actively surprising and promoting them. Therefore, the public display must have the notion of update rate as well as the distinction between actionable and non actionable information to categorize different kinds of information. In a particularly actionable advertisement can offer users diverse action opportunities like discounts, shows or special events [3].

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