

# Challenges and issues facing Smart Signage

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**Abstract.** Emerging as a new form of media, smart signage has been drawing attention as an attractive presentation technology, joining TV, internet and smart Phones. Combined with IT technology, it is expected to replace traditional advertising methods and lay a foundation for new trends. However, to appeal to both users and advertisers smart signage still faces various challenges which must be addressed, and as a result, new models are needed to provide desirable alternatives.

**Keywords:** Smart Signage, mobile advertise

## 1 Introduction

This After experiencing the social changes brought about by new digital and IT technologies during the preceding decade, we now face yet another dramatic change. The keyword which has been most frequently used and will be used in the years to come to describe this change is "smart." Leading current trends, smartphones allow us to search and utilize information at any time and any place. Smart IT technologies provide convergence services, enabling us to continue personal and business activities even while on the move.

Very soon, we will live in smart homes, watch smart TVs, drive smart cars and live in smart cities. In this smart environment, we are exposed to smart signage every day, which will affect the forms of advertisements, the delivery of public service announcements, and commercial activities. Emerging as a new form of media, smart signage has been drawing attention as an attractive presentation technology joining TV, internet and smartphones. Combined with IT technology and based on the current trends of media convergence, smart signage is expected to replace traditional advertising methods and create new trends.

Although smart signage is not lacking in its role as a next generation media technology, there is still a need to identify challenges regarding whether the technology and services meet users' needs and to provide solutions through case studies. From that perspective, this study presents the concepts of smart signage, detailed examples and current issues, alternatives

## **2 The concepts of smart signage**

The term “smart” can mean many things, such as intelligent, cool, neat, fashionable and quick. Recently, it has come to mean “computer controlled” to represent the current social changes. The concept of smart signage can be defined as upgraded and “smarter media capable of delivering information, messages and ads through a smart technology platform,” differentiating it from existing digital technologies and products.

Smart signage is digital media which presents diverse information and advertising content through display panels, such as LCDs, PDPs and LEDs, in public and commercial areas. Unlike DID (Digital Information Display) which is centered on hardware functions, smart signage leverages various aspects of IT technology in combination, such as software, hardware, content and networks (Popsign, 2010). It differs from TV shows: it is advertisement, it is a signboard and it is art created with method-of-display in mind. Smart signage holistically embraces all such media (Nakamura Ichya and others, 2010). From a technical perspective, smart signs are devices that display digital images, comprehensively referring to a management platform and operating software to control the major functions related to the display.

Smart signage can be used in public facilities such as transportation, education, hospitals and banks; and commercial facilities such as shopping centers for the purposes of advertisements, promotions and the delivery of real-time information. This information may include commercial ads, product information, public service announcements and general information for using facilities such as businesses, schools and libraries. The primary advantages of smart signage are as follows:

First, HD ads and content, previously available for home TVs, can now be displayed in targeted public areas at targeted times to targeted audiences. Second, content is interactive, particularly with technologies such as touch screens, facial recognition and iris recognition, which enables customized information and advertisement (Changhoon Lee and others, 2010).

## **3 Examples of smart signage**

### **3.1 Case #1: FamilyMart convenience stores**

At FamilyMart, smart signage has been used as a promotional advertising channel to establish its image as the leading convenience store over its major competitors, GS 25. It is not intended to generate profit, but to establish leadership and there was no advertiser investment. The ads have been running to attract advertisers, while the hardware manufacturer is responsible for the monthly advertising costs. In the early stages, the ads were broadcast free of charge in the form of music videos, movie previews and sporting event. Currently, FamilyMart utilizes this signage for its own promotions.

FamilyMart employs outdoor displays, as suggested by the hardware manufacturer, while it designed and currently operates its own content and system. FamilyMart has yet to secure enough advertising content, and therefore, continues its effort to expand

the media until the initial costs are paid off by the advertisers. From a user perspective, it is running non-interactive ads, which restricts development as smart signage.

### **3.2 Case #2: E-Mart stores**

CJ PowerCast planned a large investment business and E-Mart provided venues to operate the business. Starting initially with E-Mart signage service, E-Mart consolidated its image as a leader by securing media through direct investments at COEX shopping mall<sup>i</sup>. Recently, a newspaper company capable of outdoor advertisement won the contract to replace the existing fluorescence black-light signboards at Incheon International Airport with smart signage boards. CJ PowerCast won the SI project bid to perform sales activities, including hardware investments, systems operations and content development and advertising.

Signage has been used as a tool for promotions and advertisement by installing it above the checkout counters in all E-mart stores, visible to shoppers queued at the counter. It is also attached to the walls next to escalators and against the ceiling above main display stands to advertise products. Manufacturers of consumer goods sold at E-mart stores have utilized small signage displays to promote their products on display stands. Without user interaction, this is only a one-sided way to display advertisements.

## **4 Challenges and issues facing smart signage**

Even though smart signage has been a hit in the advertising media market, there is still a need to identify the challenges and issues from various angles through case studies. First, the biggest problem is that the concepts of smart signage are not well understood by the public. The public may be familiar with it in the restricted sense of store signboards. It can be expanded to include indoor and outdoor digital media panels that provide advertisements and information. Second, smart signage fails to keep up with the radical changes occurring in ways media is being used. Smart signage is certainly an advertising media which can easily approach customers.

However, the existing signage which has so far provided only non-interactive advertisements and information must evolve to the next level where smart signage can generate greater interest and provide entertainment through interactive touch tools and approaches; furthermore, users can make purchases and payments through the smart signage platform. Third, due to a lack of communication among stakeholders, such as advertisers, hardware manufacturers, content developers and service providers, it has been impossible to adopt proper solutions for displays, operational software, content, installation and service, resulting in repeated failures in terms of costs and business effectiveness.

Lastly, advertisers have been hesitant to allocate advertising budget due to a lack of confidence in the advertising effectiveness of smart signage. Along with the internet and mobile advertisements, which have replaced TV commercials, smart signage has been attracting growing interests. In line with current trends, advertisers have rapidly shifted their views on smart signage, and advertising agencies and

system operators shifted their advertising focus from existing media to smart signage media.

As an alternative to resolving issues arising from companies independently pursuing their own business interests in the early stages of the signage business, a standard model is required to create a successful business ecosystem. The structure of the smart signage business model should include “the system allowing stakeholders (corporations) to secure and use resources to provide more value to users, and accordingly, to earn profits (Heesang Lee, 2006)” and allow businesses to be competitive and out-perform their rivals in the long run.

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