



Gloucester House  
45 Gloucester Street  
Brighton BN1 4EW

T: 0870 0055 924  
F: 08701 315199

W: [www.futureplatforms.com](http://www.futureplatforms.com)  
E: [info@futureplatforms.com](mailto:info@futureplatforms.com)

## **Augmented Reality User Experience**

Position Paper submitted to the Mobile AR Summit @MWC 2010

**Presented by Sergio Falletti – [sergio.falletti@futureplatforms.com](mailto:sergio.falletti@futureplatforms.com)**

Tuesday, 09 February 2010

Augmented Reality on standard mobile devices has hit the headlines with hero applications like Wikitude's World Browser on Android and ARGH's Ghost Hunter for iPhone. These early success stories may lead to a misleading definition of Augmented Reality on mobile devices, where the mobile screen is turned into a widely available version of Robocop's visor – or Tom Cruise's glasses in Mission Impossible, to pick a friendlier example.

From a user's perspective, Augmented Reality seems to be better defined as a new form of interaction where the canvas is the real world around us and the mobile phone is our tool to interact with it.

There is an interesting parallel between this definition of AR and the evolution of Immersive Theatre in the last decade. I have followed with interest the work of companies like Punchdrunk, whose ground breaking productions took dramas out of purpose-built stages and set them in more open spaces, immersing the audience in the story, giving audience members "the freedom to roam entire buildings, to follow any theme, plot line or performer they choose". For mobile users, the screen has so far been the "stage" where information, entertainment and learning play out. Augmented Reality creates a more immersive experience where applications and services leap out of the screen and users interact with them through their physical environment.

At Future Platforms we have had the opportunity to touch on AR through our own R&D work, we have thought through specific challenges when working on concepts for our clients and have observed it in action thanks to the launch of Locomatrix – a multiplayer, location-based gaming platform. I can think of a few themes that have emerged from that work and closely relate to the user experience of augmented reality:

1. **Simple is harder than it looks.** The first game we designed on Locomatrix was a multiplayer game where players needed to pick up virtual fruits planted in their surrounding area. Game levels could also include barriers, virtual enemies and grids of variable size. When it came to playing the game levels "in the wild", the most successful ones were those with smaller grids and no obstacles at all. They looked too simple on the level designer, but the physical obstacles in the real world, the need to avoid innocent passers by and the physical effort made those levels surprisingly entertaining.
2. **Glancing is the main mode.** The same obstacles and passers by that make simple games challenging can also influence the way mobile phones are used to interact with augmented reality. The predominant behaviour when playing games in real space or using more serious applications is consistent: the phone is mostly

in the pocket or in hand, often glanced at to check on progress and only occasionally stared at. Audio and tactile feedback are therefore just as important as on-screen visualisation.

3. **Expect emergent behaviour.** One of the best experiences with Locomatrix happened when we arrived at the designated park and found it occupied by lorries setting up a fun fair. The multiplayer game had usually been a mix of tactics and speed, because you could see the other players and guess which route they were going to take. The visual barriers created by the lorries changed it to a hide and seek game where one could stand near a fruit, wait for other players to get near to it and then jump out at the last minute to take the point. Augmented reality will often expose the unpredictability of the environment and people.
4. **It's not just about location.** The spread of GPS-enabled mobile devices is clearly the main enabler for augmented reality applications. Mobile devices can however bring to bear a wider range of sensors: the microphone, Bluetooth, their camera and accelerators. Could an AR experience be mainly based on immersive sounds? Could we create a game based on the user's heartbeat? Couldn't we use image recognition to blend reality and fiction?

As a developer we will take the above lessons and look forward to applying them to the next projects. A few of the challenges we will then face rely on the growth of the AR sector:

- **Managing social interaction** – augmented reality will often involve a social element, but the fact that users are more likely to meet each other in person has significant implications on privacy. Social platforms like Facebook will need to support that extra level of control.
- **Liability** – using services while they moving in the real world can lead to accidents. Mapping applications may serve as a precedent, but how can the industry define what a reasonable level of user immersion is? Would warnings and instructions count as 'reasonable effort'? Industry standards would be useful here.
- **Device fragmentation** – the eternal bugbear of the mobile industry is here to stay, with competing operating systems and device manufacturers. Platform providers like Wikitude and Cloudmade will hopefully continue to develop device-agnostic solutions that developers can integrate into AR experiences.