

# Asymmetrical Gameplay Across Heterogeneous Devices: Designing a Lexicon for Cross-Platform Development

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Figure 1. Heterogeneous experience mockups

## 1. Introduction

Mobile devices have become a major market consideration for developers in recent years, as smartphones and tablets become part of a new technological and social space. However, game experiences on mobile platforms still don't offer an acceptable level of interconnectivity across diverse ecosystems.

This project aims to demonstrate that it is possible to develop a compelling multiplayer game experience that works in a heterogeneous environment. It explores the potential of cross-platform development tools to create asymmetrical gameplay between different devices, and seeks to develop a set of techniques and guidelines to be used in designing heterogeneous gaming experiences. Research has been conducted into existing solutions for cross-platform play.

## 2. Approach

Methods to address the limitations of current cross-platform ecosystems have been explored. In support of this research, a multiplayer collaborative game experience

has been created, featuring an emphasis on seamless design and user interactions tailored to device features and constraints. The game joins players wirelessly and examines the role of users and user interaction techniques in a collaborative and/or antagonistic experience. Current trends in game design for popular mobile games has been noted and integrated into the prototype experience, and used as a basis for examining the impact of the presence of mobile devices in a shared game experience.



Figure 2. Representative prototype images (PC, tablet, smartphone)

As a result, I have defined the issues in the development of heterogeneous gameplay: hardware constraints, game experience, network communication, and development considerations. Different approaches to solving these issues have been explored.