

# Mobile Gaming with Indirect Sensor Control

Daniel Böhrs  
bdaniel@tzi.de

Dirk Wenig  
dwenig@tzi.de

Rainer Malaka  
malaka@tzi.de

## Mobile Gaming Control Problems

- ▶ Software-button interfaces map traditional control concepts on the touch screen and limit the field of view
- ▶ Accelerometers are used to control a game by tilting to the sides which often results in a lag of overview

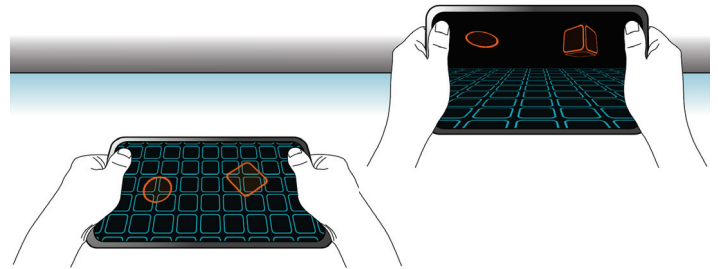
Traditional button interface



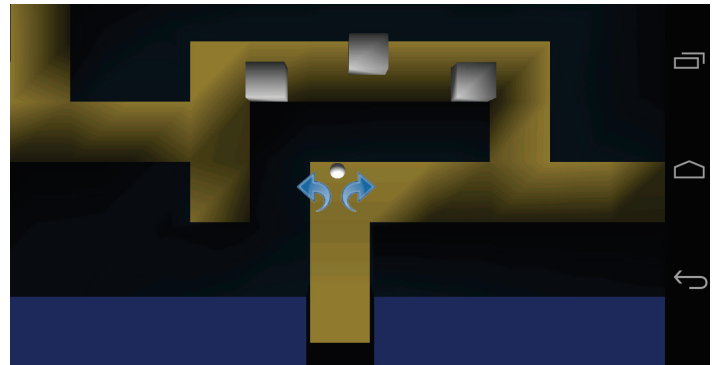
## Indirect Sensor and Touch Area Approach

- ▶ Combining proved touch and accelerometer control concepts to create a better user experience
- ▶ Invisible touch areas for providing a clean screen
- ▶ Accelerometers used as an indirect control mechanism to switch between different control and view layers

Pitch gesture



Top view



Third person view



## Prototype

- ▶ Time based ball-through-labyrinth game
- ▶ Typical maze layout with additional obstacles inside the corridors
- ▶ Two different perspectives and control layers switched using accelerometers
- ▶ Touch interaction using two areas with each a half of the screen (left and right)
- ▶ Top view for rotating by 90° to the left or right using touch
- ▶ Third person view for translating to the left or right using touch

## Evaluation

- ▶ Comparison with two alternative concepts
- ▶ In-game log data collection
- ▶ Questionnaire for Measuring the Subjective Consequences of Intuitive Use (QESI)
- ▶ Focus group interviews for additional comments