

## **Grasping users' Quality of Experience of a location-based mobile MMORPG played in a city context: a multi-method approach**

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Quality of Experience (QoE) has become an important research topic in the contemporary ICT environment (Reichl, 2007, De Moor and De Marez, 2008, Kilkki, 2008). It is embedded in research traditions (e.g., Telecommunications) that tend to approach QoE and its measurement from a narrow, service and performance-oriented perspective. Influenced by the strong emphasis on user involvement in ICT innovation and the increased interest in the (quality of) users' experiences in other fields (e.g. Human-Computer Interaction, Social Sciences) however, this narrow interpretation has been broadened over the last years. Various authors have pointed to the multi-dimensional character of human experiences when interacting with technology (e.g., Forlizzi and Ford, 2000), thus emphasizing the importance of e.g., expectations, previous experiences, contextual aspects. In Geerts et al. (2010), an integrated, multi-disciplinary framework was linked with relevant methods for QoE-measurement.

This paper discusses the results of an empirical study in which this framework was used as a conceptual ground to investigate users' perceived Quality of Experience when playing 'Parallel Kingdom' (PK) on an Android Smartphone. PK is a location-based, mobile real-time massively multiplayer online role-playing game (MMORPG) that links users' real world physical locations to actions and challenges in a parallel, virtual world. The aims of the study were (1) to refine the conceptual framework by identifying overlaps/gaps, (2) to grasp the aspects that influence the test users' QoE and (3) to evaluate the methodological approach (i.e., a combination of objective and subjective methods). In the full paper, the outcomes of the study are discussed, with an emphasis on the relation between the empirical findings and the theoretical model.

The field trials were conducted in a city context at three different locations (Ghent, Etterbeek and Leuven) with 28 test users (with no experience with the game nor the device). The study consisted of 3 successive stages. During the first phase (pre-usage), the participants were briefed in small groups and asked to fill out a general questionnaire inquiring their socio-demographics and their previous smartphone and gaming experiences. Finally, every user was provided with an Android device and asked to wear a Sensewear body monitoring bracelet. Thereupon, the players went outdoors to play the game for 1 hour in a city context (second phase). During the gaming session, objective and subjective data were collected

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through the Sensewear bracelet and a QoE monitoring agent (installed on the Android mobile devices). Additionally, 2 short questionnaires were displayed on the device when playing PK. During the third phase (post-usage) a final questionnaire probed the test users' actual experiences and emotions, perceptions of the game, device and context. To finalize, 6 semi-structured focus group discussions were organized.

The results show that the overall QoE of the participants was negatively influenced by the lack of a clear goal and story, slow gameplay, low sensitivity of the touch screen and bad synchronization between the physical and virtual world. Despite reported feelings of frustration, most participants perceived the experience as pleasurable and immersive, mainly due to the multiplayer aspect and the context of use.

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