Chapter 13

Quality of Perception in M-Commerce

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ABSTRACT

In an m-commerce setting, the underlying communication system will have to provide a quality of service (QoS) in the presence of two competing factors—network bandwidth and, as the pressure to add value to the business-to-consumer (B2C) shopping experience by integrating multimedia applications grows, increasing data sizes. In this chapter, developments in the area of QoS-dependent multimedia perceptual quality are reviewed and are integrated with recent work focusing on QoS for e-commerce. Based on previously identified user perceptual tolerance to varying multimedia QoS, we show that enhancing the m-commerce B2C user experience with multimedia, far from being an idealised scenario, is in fact feasible if perceptual considerations are employed.

INTRODUCTION

Business-to-consumer (B2C) applications represent a particularly high-growth area of electronic commerce. As these B2C applications evolve, it is the users who would determine the success of such applications and of the B2C sector as a whole. While general user concerns in B2C environments relate to
issues such as trust, privacy, and convenience (Ackerman, Cranor, & Reagle, 1999; Basso, Goldberg, Greenspan, & Weimer, 2001; Callahan, & Koenemann, 2000; Spiekermann, Grossklags, & Berendt, 2001), in a mobile communication context, considerations of user satisfaction are further hampered by matters relating to the relatively constrained input capabilities, as well as the limited size, processing capabilities, and battery power of the devices themselves.

A central issue to the acceptance of B2C applications is the one of quality—and this shall be the main theme of the chapter. As Figure 1 details, m-commerce B2C applications can be approached from three main, sometimes overlapping, perspectives, and with each, one can associate a notion of quality. In this chapter we shall, however, be concentrating primarily on the user perspective, showing how knowledge about perceived quality can be exploited from a data transmission viewpoint. Accordingly, quality, in our work, has two main facets in an m-commerce environment: of perception and of service. The latter characterises the technical side of computer networking and represents the performance properties that the underlying network is able to provide. The former is a novel term coined by us and gives a more complete characterisation of the human side of the m-commerce experience.

In this chapter, we present an overview of QoS-related issues and how they impact on the user experience, with particular emphasis on m-commerce. Accordingly, the structure of the chapter is as follows. Section 2 looks at QoS issues in m-commerce from the prism of e-commerce. While section 3 reviews research in the area of the perceptual impact of varying QoS and shows its

![Figure 1: The different perspectives of multimedia-enhanced B2C m-commerce](image-url)
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