

## Chapter 3.33

# The Design of Mobile Television in Europe

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### ABSTRACT

*Mobile television is potentially the most anticipated mass-market mobile application across Europe. This chapter examines the business model design of mobile TV by the various stakeholders currently piloting mobile broadcasting in the European national markets. It adapts a generic business model framework to systematically compare five recent pilots of the two mobile broadcasting technologies that are currently trialled most intensively in Europe, that is, digital video broadcasting-handheld (DVB-H) and digital audio broadcasting-Internet protocol (DAB-IP). The article illustrates the cross-impact of cooperation agreements between the various stakeholders with technological, service-related, and financial design choices. It also provides insights as to the likely business models in the upcoming commercialisation phase of mobile broadcasting in Europe.*

### INTRODUCTION

One of the most anticipated applications in Europe's mobile commerce and multimedia landscape is mobile TV. It is widely argued that mobile digital television has the potential of becoming one of the next high-growth consumer technologies (Kivirinta, Ali-Vehmas, Mutanen, Tuominen, & Vuorinen, 2004; Södergard, 2003), provided it is able to master its inherent complexities in terms of the various stakeholders required to cooperate (Shin, 2006). It has a clear and easily understandable value proposition towards the majority of end users: TV on a mobile device. Also, the technology lies at the crossroads of two powerful socio-technical trends: the ubiquity of mobile phones, and new forms of accessing media content.

In the European mobile market, digital TV on a mobile device is not a novelty. Initial TV services on mobile phones consist of streaming video over the cellular network. Third generation

(3G) cellular networks (i.e., Universal Mobile Telecommunications System [UMTS]) already allow for streaming video for a considerable time. In several European countries, a wide selection of rich video content is available over UMTS, with large markets such as Italy, the UK, and France as front-runners. The downside of this solution is that without network capacity investments the video images degrade in quality if there are too many simultaneous users, since content needs to be streamed to each user in a point-to-point fashion. Therefore, streaming content over cellular is a costly option for serving a mass audience. The Multimedia Broadcast Multicast Service (MBMS) standard could circumvent this by offering a multicast and a broadcast mode for existing cellular networks, but its implementation time path is currently unclear.

An alternative is offered by new point-to-multipoint digital TV standards such as DVB-H, DAB-based standards, and Media-FLO. These are able to offer high quality live broadcast TV, allowing mass-market service delivery in a more scalable way and at more attractive operational costs (but still considerable capital expenditures). However, since the current uptake of mobile video content over 3G is quite slow, some operators have expressed doubts as to whether investments in these new network technologies are necessary and are counting on the fact that their 3G property will be sufficient for the coming years.

Other major technology choices faced by prospective European mobile TV operators include whether or not to combine any new mobile broadcasting technologies with uplink technologies such as *global system for mobile communications* (GSM) and UMTS in order to ensure more flexibility and interactivity in the service offering, and whether new mobile broadcast standards should “piggy-back” on top of existing networks—*digital video broadcasting-terrestrial* (DVB-T) and DAB networks, respectively, - or whether they should be built as stand-alone networks.

The technological outlook on mobile broadcasting will be sketched briefly in the second section of this chapter. However, we aim to demonstrate that the main design choices to be addressed are not only, even not predominantly, techno-economic in nature. It is our assertion that the cross-impact of strategic cooperation and competition issues (e.g., related to control over this new market by broadcasters, content aggregators, or cellular network operators), market expectations (e.g., related to speed of uptake, service offerings, degree of interactivity), and legacy situations (e.g., related to existing networks and customer relations) will to a large extent determine the outcome of mobile digital TV in Europe (see Shin, 2006 for a similar argument on digital multimedia broadcasting [DMB] development in Korea). A four-level design framework, along with a detailed enumeration of mobile TV design issues, is presented in the third section.

To test both technological maturity and marketability of the new service, many mobile broadcast test and experimentation platforms (TEPs)<sup>1</sup> in the form of field trials and market pilots have been started in Europe since 2004. Two multicasting standards are being trialled quite intensively in the European area, that is, DVB-H and DAB-IP/DMB. Their commercialisation is expected to start in earnest from 2007 on, with small-scale commercialisation already available in 2006 in a few countries..

We selected and analysed five of the largest and most documented pilots (four DVB-H pilots and one DAB-IP pilot) using publicly available info, telephone interviews, and e-mail interactions with key pilot participants. The fourth section contains the results of the case analysis in terms of the design choices made, how these were interlinked, and which cooperation schemes were devised. Where possible, the consequences of the design choices for the commercialisation phase are indicated. Finally, the final section offers some concluding remarks in terms of the

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