Chapter 3.12
Ambient Media and Home Entertainment

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ABSTRACT

Media are "[media] means effecting or conveying something such as (1) a surrounding or enveloping substance; or (2) a condition or environment in which something may function or flourish; or (3) mode of artistic expression or communication." (Merriam-Webster, n.d.) In the case of ambient media, the humans' natural environment becomes to the "enveloping media" as an environment in which content functions. This work therefore deals with the development of ambient media, far beyond seeing TV as a major entertainment platform in consumers' homes. To satisfy the entertainment-hungry consumer, more and more advanced home entertainment (HE) systems and facilities are required to provide interactive and smart leisure content. This chapter glimpses the future of modern ambient HE systems. Experts in the field of ambient media discuss and contribute to four major lines of the future development of ambient media: (1) social implications, (2) converging media, (3) consumer content, and (4) smart devices.

INTRODUCTION

Rather than the consumer explicitly telling a computer system what to do, the system will act autonomously in the way the consumer desires. Natural interaction, personalization, smart metadata, wireless technology, ubiquitous systems, pervasive computation, and embedded systems are technologically enabled. The vision for *ambient media* or *ambient intelligence* has been developed by the European Commission as goal for research projects until the year 2010. The IST Advisory Group (ISTAG) developed the components (see Figure 1) contributing to this vision in their working documents in the beginning of this century (ISTAG, 2001, 2003). The goal of this book chapter is to look far beyond the scope of the utilization of compression techniques for transmitting content or digital television in consumers' homes (Lugmayr, Niiranen, & Kalli, 2004). Ambient intelligence or ambient media seek to make smart technology available for the consumer throughout their natural environment.

Figure 1. Components of ambient intelligence or ambient media according ISTAG
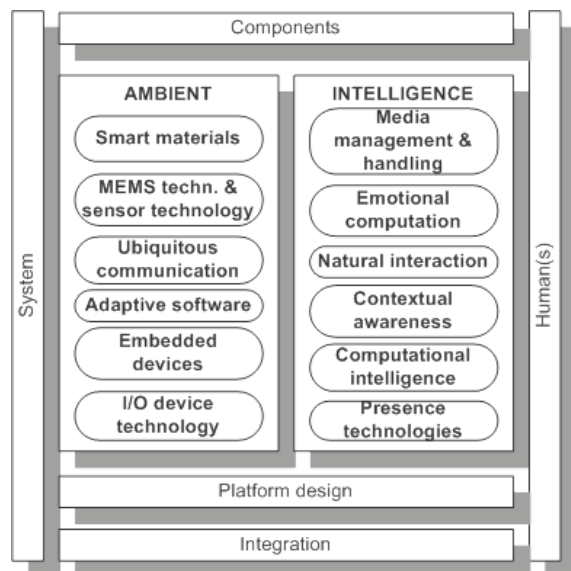
Currently many European projects are contributing to this vision with the realization of ambient-media-related projects ranging from digital TV, smart living spaces, media content management, and so forth.

Going further back in the development of multimedia systems, we see the following major development steps in media evolution (defined in Lugmayr, 2003; Lugmayr, Saarinen, & Tournut, 2006):

1. **Natural media:** Forms not requiring electronic technology (e.g., dances, songs, or cave paintings)
2. **Multimedia:** Integrated presentation in one form (e.g., TV, Web pages, interactive installations)
3. **Virtual reality:** Embedding the user into a computer generated world (e.g., CAVEs, computer games, immersive environments)
4. **Ambient multimedia:** The user is exposed to the actual media in their natural environment rather than to computer interfaces (e.g., smart home and spaces, intelligent mobile phones)
5. **Bio-media:** A fully real/synthetic world undistinguishable pure media integrating human capacity (e.g., as aspired by Hollywood films such as Matrix)

Figure 2 gives an overview of the overall chapter topics organized in the following sections:

- The first section focuses on new technology trends of the ubiquitous computing era fostering substantial changes in all application domains in *Home Entertainment: At the Intersection of Smart Homes & Ambient Entertainment.*
- The second section focuses on media convergence, especially on the future of digital TV with a rather consumer-centered viewpoint in *Beyond Usability, Broadcast, and TV.*

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