

Mobile Internet -- Research Toy or Product Vision?

Hans-Peter Schwefel
Siemens AG,
Hofmannstr. 51, 81359 München
Hans.Schwefel@icn.siemens.de

Abstract

In the past, two separate network types with very different architectures existed: mobile networks on one side, which initially were used exclusively for speech; on the other hand, data-networks with the Internet as its most important representative. A trend for convergence of these two network types can now be perceived. IP technology is gaining more and more relevance in mobile networks, starting in the backbones but now also extending to the radio access networks. Regarding the evolution of data-networks, solutions for wireless access and mobility support are highly demanded.

This trend for convergence has strongly encouraged the vision of researchers and product managers that in the future, the separation between data-networks and mobile networks will cease to exist, and instead both networks types will be unified within a single concept, here called 'Internet on Air'.

This talk provides a brief overview of the history and the architecture of mobile networks, in particular their evolution from GSM (Global

System for Mobile Communication) to GPRS (Global Packet Radio Service) and UMTS (Universal Mobile Telecommunication System). A potential continuation of this evolution, the Siemens' vision of 'Internet on Air' (IoA), is then presented in detail: the IoA network is designed based on an end-to-end IP architecture. In correspondence to the IP paradigm, the intelligence of the network (e.g. application servers and network services) is pushed to the network edges, allowing flexible third-party application provisioning.

However, the IoA network poses many challenges to the engineer as well as the researcher: combined concepts for the support of real-time applications (Quality of Service), terminal and user mobility, and last but not least network security are required. A selection of research topics will be identified and two examples within the areas of Quality of Service and network reliability will be discussed in more detail.