

Chapter X

From Fixed to Mobile Convergence

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ABSTRACT

The aim of Fixed-Mobile Convergence (FMC) is to provide both fixed-line and mobile telephony services to users through the same handset which could switch between networks and support both wide-area mobile network access and local-area connection to fixed-line technology, typically through a local wireless connection. An important feature of FMC is to allow users to access a consistent set of services from any fixed or mobile terminal via any compatible access point, independent of access network it is attached to. The chapter discusses the benefits and challenges of the FMC. It also analyse the efforts that have been put into realising the potentials that FMC promised in the nearest future.

INTRODUCTION

The introduction of wireless communication devices into the market, such as cell phones and PDA's, has significantly increased worker productivity, but has also increased costs, as cellular network usage has increased significantly.

Voice communication is one of the most costly pieces of an ICT service, and the costs are only growing as more employees become part of the mobile workforce. Fixed-Mobile Convergence (FMC) allows wireless users to utilise the enterprise's fixed line network to greatly reduce

the number of billable cellular minutes while adding additional functionality to their mobile devices. An effective fixed-mobile strategy provides increased workforce productivity and a more reliable communication platform, while reducing overall costs. With the obvious benefits of fixed mobile converged services, the question now is how to implement an effective fixed-mobile strategy [FMCC 2007].

This chapter focuses on the FMC strategies issue. It presents an overview of fixed-mobile convergence and outlines an FMC architecture that displays the technical structure of the FMC framework.

A second section of the report is dedicated to the technological challenges, the specific requirements of FMC and the differences and barriers that may hinder the progress of the technology.

The research also highlights the benefits of fixed-mobile convergence technology. A number of organisations and companies have already taken the initiative in terms of convergence development; details of which are presented later in the chapter.

FMC warrants full industry support which is fundamental for successful development and implementation of this breakthrough technology. Several key players such as network equipment vendors, handset vendors and applications developers are required to collaborate as they all play a significant role in the FMC niche. This will also be discussed in the convergence recommendations section.

This chapter concludes with a view of the future of fixed mobile convergence and details of the enhancements in FMC technology through different stages are discussed.

About two decades ago, the mobile industry got its start on the strength of early adoption of mobile phones by business users. Despite the size and heft of those early cellular phones, business users latched on to the benefits of mobility and gave the wireless industry the boost it needed to get up on its feet and drive continued success through eventual penetration into the mass consumer space. Fast forward to today and the telecom industry is on the verge of yet another major inflection point: Fixed-Mobile Convergence [Baw 2006]

FMC is a breakthrough technology in pervasive communications with the convergence of the wired and the wireless technologies into a single solution. It is an innovative approach towards implementing a ubiquitous network infrastructure.

The technology will allow network and service operators to make more efficient use of existing access technologies (GSM, DSL, Wi-Fi) as well as taking advantage of the new access technologies such as 2.5/3G, DSL, WLAN, Bluetooth, etc by launching new voice and multimedia service. The most challenging aspect of FMC is to combine 3G cellular and Wi-Fi wireless networking into a single mobile handset and to combine the two services into a single wireless plan.

Convergence almost always results in cost savings and efficiencies because converging the traditional voice network with the cellular voice network reduces the number of devices, maintenance, and the ongoing costs of delivering voice services. In addition, the ability to deliver data over the converged voice handset allows for tremendous efficiency gains for the mobile workforce [Harrell 2007].

The technology warrants a review of the current infrastructure along with the participation and full cooperation of the various stakeholders in the industry. For example, there has to be a wide development support and manufacturing commitment from handset vendors such as Motorola, Nokia, Samsung for a dual-mode handset that would meet the FMC criteria.

Telecommunication Issues: Problem Statement

There are currently a number of physical barriers that exist between wired and wireless networks that prevent telecom service providers from reaching all of their potential customers with a full range of services.

This is particularly due to infrastructure restrictions and an insufficient support for convergence from the various players in the market. Although a few companies have already taken the initiative in terms of prototype development and implementation, industry wide collaboration is important in order to achieve the core objectives of FMC.

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