ABSTRACT

This study demonstrates that an integrated operator can benefit from cost savings, customer retention and prevention of revenue erosion by FMC migration strategy with introduction of advanced service packages. This development is driven by increasing importance of mobile network capabilities and services, as well as the lessening gap between fixed and mobile systems, in terms of technological models and prices, resulting in greater market-pull and commercially feasible FMC offerings. FMC is expected to offer benefits for network and service operators as well as businesses and consumers. We have also analyzed the operator’s dilemma in selecting an appropriate migration strategy to exploit the benefits of cost savings and generating new revenues, while exposing oneself to the risk of substitution effects among its fixed and mobile products. The objective in this article has been to provide quantitative comparison of some strategic scenarios utilizing techno-economic case study methodology in modeling an integrated operator business in the Western European context. [Article copies are available for purchase from InfoSci-on-Demand.com]

Keywords: Fixed-Mobile Convergence; FMC migration; Integrated Operator; Internet Service Provider; IP Multimedia Subsystem; Techno-Economic Modeling; Telecommunication Services

INTRODUCTION

Next Generation Services delivered via Fixed-Mobile Converging (FMC) networks are under discussion and consideration for several years. Though concepts and experimental implementations are widespread, truly operational experience is still lacking. Various players in
the telecommunications value network follow different definitions of the FMC concept. Convergence may start either with common terminal equipment providing access to both fixed and mobile networks or with a common billing and customer care center offering the user one-stop shopping. Various stages of convergence may be achieved on access and core network technology level, management, service enabling and content and application level with own or shared platforms.

In this article, we broadly define FMC as the end-to-end provisioning of unified services accessible by the end user independent of the underlying access and core network technologies. To enable an efficient realization of such an ecosystem, convergence has to occur at multiple levels, namely at the network, service, terminal and commercial level. One major enabler to achieve a seamless interconnection between all entities included in this picture is the use of a common underlying protocol infrastructure which nowadays still seems to be the Internet Protocol (IP). An overarching control platform for both services and underlying resources and transmission capacity is the IP Multimedia Subsystem (IMS) as standardized and agreed on in both fixed and mobile standardization organizations.

The study elaborates on a migration concept for an integrated operator from current separated traditional fixed and mobile networks towards FMC and IMS at different levels of service provisioning. The model investigates the impact on the overall profitability. The investigation considers different players in the FMC ecosystem, namely, the operators of access and core networks, service and content providers, hardware and software manufacturers, also vendors and legal authorities. Key drivers for industry development, for technology evolution and market demand are taken into account. The work is based on European CELTIC co-operation project ECOSYS (ECOSYS, 2004-2007) with partners from operators, universities, vendors and SMEs.

The article is structured as follows: After description of the players and the drivers in the FMC ecosystem, an operators’ motivation as well as strategic considerations for FMC migration are compared. FMC framework and required investments assumed for the study are introduced, and considerations on OPEX (operational expenditure) are presented. Afterwards, the composition of FMC services offered is described and an elaboration of the common underlying geographical-economic model is given. The results for an integrated operator with and without FMC service provisioning are analyzed. The article concludes with an outlook on the potential impact on a next generation operator’s future strategic decisions.

PLAYERS IN THE FMC SERVICE GAME

The highly complex FMC environment comprises the following players, who all are eager to gain a share of the value generated by FMC:

- Access and core network operators
- Transport network operators
- Service delivery platform developers
- Content providers that may produce content applicable for FMC devices
- Service operators offering value-added services to the end-users
- Software manufacturers providing client software for efficient switching between multiple radio technologies, terminal operating systems, and desktop SW vendors
- Handset manufacturers producing multi-radio handsets or smart cards
- Network vendors
- National regulatory and competition authorities

The expected gain can be achieved within different areas so that the need for FMC deployment is driven from these sectors. Some of the key drivers are described here:

- **Industry drivers:** From the industry’s view-point some of the main drivers are: cost and investment savings, by eliminating
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