Chapter III
Reforms in Spectrum Management Policy

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ABSTRACT

Wireless/mobile technologies are absolutely necessary for any agent who wants to participate in the new information and communication technologies market playfield. The means for the deployment of the wireless/mobile technologies is the radio spectrum. Thus, a rational assignment and an efficient use of radio spectrum become sine qua non condition for the sector development. The objective of this chapter is to present the reforms in the radioelectric spectrum management mechanisms that are currently being drafted (or that are even being applied) as well as to assess their advisability and timeliness. In particular, the chapter assesses the three deepest changes that are being considered: authorisation of the secondary market, usage of auctions for primary allocation and full liberalisation of spectrum usage.

INTRODUCTION

As users' demand for access to contents and applications moves towards a scenario characterised by mobility and ubiquity, the aim of integrating the provision of services and business models into a single structure becomes increasingly both necessary and attractive. This is the idea that lies behind the concept of *Next Generation Networks* (NGN). Very simply speaking, a NGN is a single network that delivers multiple applications (voice, data, video) to multiple devices, whether fixed or mobile.

Therefore, the deployment of the NGNs is the technical and business element around which the future evolution of the information and communication sector revolves. This upcoming scenario will be characterised by the fading of the boundar-

ies between previously separate markets, because no access technology by itself (at least with the technical conditions expected as of today) could present the optimal characteristics for satisfying all the requirements involved in the NGN concept. In particular, wireless/mobile technologies are absolutely necessary for any agent who want to create (or to update) technological platforms capable of thriving in the new playfield.

The means for the deployment of the wireless/mobile technologies is the radio spectrum. Thus, a rational assignment and an efficient use of radio spectrum become *sine qua non* condition for the sector development. The management of spectrum (the set of rules that govern the conditions to access it, the requisites for its usage and the rights it entitles) will define the characteristics and sustainability of future information and communications technologies (ICT) markets.

Moreover, the consequences of the decisions about spectrum planning and management go beyond the sector. The innovation introduced in ICT markets regarding new services and applications hugely depends on the strategy followed by the operators which is reliant on market conditions. As just said, those strategies are conditioned by the spectrum regulatory framework. The knock-on effects, undoubtedly, will affect general users and, particularly, business organisations for which communications services are becoming a key strategic asset, no matter the sector of economic activity.

The objective of this chapter is to present the reforms in the radioelectric spectrum management mechanisms that are currently being drafted (or that are even being applied) as well as to assess their advisability and timeliness.

The paper is structured into six sections. Section 2 details what could be considered as the "traditional spectrum management model". Next, the reasons that make advisable a change of model are analysed and the most outstanding features of the transformation are summarised. Sections 4 and 6 describe and assess the three deepest changes that are being considered: authorisation of the secondary market, usage of auctions for primary allocation and full liberalisation of spectrum usage. The paper ends with the conclusions that result from the previous analysis as well as with a few personal recommendations serving as a guide for change.

THE TRADITIONAL SPECTRUM MANAGEMENT MODEL

The traditional regulation of the radioelectric spectrum is conditioned by two assumptions: the radioelectric spectrum is a scarce resource (or at least a limited one) and it is also a valued good which is used in services that are essential to society: applications connected to security, defence and response to emergencies, telecommunications and radio broadcast, transportation, scientific research, etc.

With these assumptions, the radioelectric spectrum is considered as a public domain good by practically all administrations worldwide. As a consequence, the procedures for granting the right to using it are strictly regulated. Basically, after planning the usage given to each frequency band and specifying the service that can use it and the necessary technology, the right of usage is granted to certain agents through administrative decisions detailing the obligations of the licensee .

This system resolves the problems that may rise due to interference. Additionally, since the first step of the process, planning, is coordinated in supranational organisations, an acceptable (not always complete) global compatibility is guaranteed of the communication systems which also generates important economies of scale in the electronic device market.

As compensation for the rights of usage granted to the licensees, they are usually expected to pay an annual fee (fixed or subject to their results) and, frequently, to meet other commitments (usually regarding network deployment or level of coverage).