

Chapter V

The Impact of Government on the Evolving Market Structure of the U.S. Wireless Telephony Industry

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ABSTRACT

The United States' wireless telephone industry has evolved from a minor segment of the communications industry to a major provider of voice, and increasingly data and video communication. The industry uses radiowaves to transmit signals, and radiowave spectrum is regulated by the federal government. Moreover, local transmission requires unobstructed antennae, which in rural and suburban areas has led to the construction of wireless towers. States and municipalities have sought to regulate the construction of such towers, citing issues of aesthetics and health. The development of the wireless industry has been constrained by such government regulation. This chapter discusses the impact of government on the market structure of the wireless industry.

INTRODUCTION

Wireless telephony has evolved from a minor component of the telephony industry to a ubiquitous component today. In the developing world, wireless communication provides access to telephony services without the cost of building out landline infrastructures. Mobile phone penetration rates, which measure the number of mobile phones

per 100 population, are high in industrialized nations and lower in less developed areas. (Table 1). These numbers often reflect multiple phones per wireless subscriber.

Governments, at the federal, state, and local levels, have had a major impact on the structure of the wireless industry, through policies on licensing, mergers/acquisitions, pricing, and tower construction. This chapter discusses the impact

Table 1. 2007 Mobile phone penetration rates

Luxembourg	158%
Hong Kong	140%
Western Europe	110%
Europe total	95%
United States	85%
China	50%
India	23%
Worldwide	13%
Sources: BBC News, 11/07; Informa, 2007; Wikipedia; Fortune, 5/26/08	

of U.S. government policies on the structure of the U.S. wireless telephony industry.

EARLY HISTORY OF THE WIRELESS INDUSTRY

Because wireless telephony uses radio wavelengths for transmission, government regulation and distribution of wavelength affects competition in the industry. Internationally, the radio frequency (RF) spectrum is allocated by the International Telecommunication Union (ITU). Governments globally have taken on the assigning of frequencies, and this can be a highly political decision.¹

Within the United States and its possessions, the RF spectrum is further allocated to non-Government and Government users. The Federal Communications Commission (FCC), acting under the authority of Congress, allocates frequencies to

non-Government users. The National Telecommunications and Information Administration (NTIA) manages frequencies to departments and agencies of the U.S. Government. Table 2 details information on the allocation of RF spectrum in the United States.

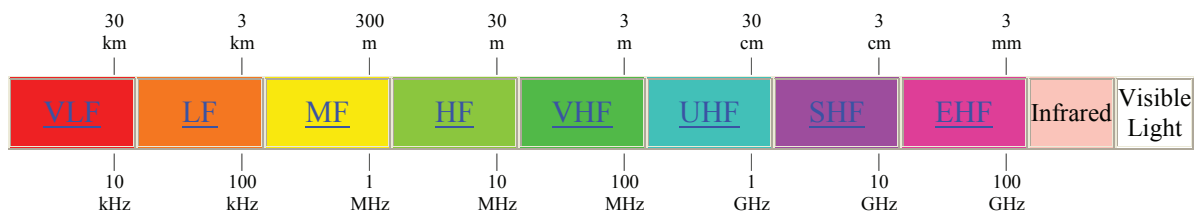
In the United States in the 1970's, the FCC planned to license a single cellular system in each area, operated by the local wireline phone company. Experimental wireless licenses were granted in several areas. In some European countries, government-owned telephone companies, known as Post, Telephone, and Telegraph (PTT) companies, provided early wireless service.

In 1981, the FCC altered the cellular structure to a duopoly. 50 MHz of spectrum in the 800 MHz frequency band were set aside for two competing systems in each market, one for the local wireline telephone company and the other for a nonwireline company. In each of 734 cellular markets (306 Metropolitan Statistical Areas (MSA) and 428 Rural Service Areas (RSA)), the FCC used non-revenue generating processes such as comparative hearings and lotteries to select a nonwireline company. The FCC started to license cellular companies in 1982 and had essentially completed the licensing process by 1991.²

Similarly, the wireless industry in Canada, regulated by Industry Canada, expanded to two cellular telephone carriers in 1984.³

Another earlier form of mobile telephony is enhanced specialized mobile radio (ESMR), developed by assembling frequency bands originally allocated for two-way dispatch services. In the United States, ESMR operates in the 800MHz

Table 2. Allocation of radio spectrum in the United States



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