Chapter 35
Dual-SIM Phones:
A Disruptive Technology?

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ABSTRACT

Dual-SIM mobile phones utilize technology that permits the use of two SIMs at a time. The technology permits simultaneous access to the mobile network services. Its disruptive nature is with reference to the mobile phone market in Nigeria and other parts of the world. Earlier market trend was inclination to "newer" and "better" phones, in favour of established single-SIM mobile phone manufacturers like Nokia and Samsung. Introduction of dual-SIM phones mainly manufactured by Chinese mobile phone manufacturing firms propelled user preference for phones acquisition which permits dual and simultaneous access to mobile network. This technology has compelled its adoption by established manufacturing names in order that they may remain competitive. It is a clear case of a disruptive technology, and this chapter focuses on it need, effects, and disruptive nature.

1.0 INTRODUCTION

Christensen (1997) used the term "*disruptive technology*" in his book *The Innovator's Dilemma*. Such technologies surprise the market by generating a considerable improvement over existing technology, and this can be attained in a number of ways. This technology may not be as expensive as an existing technology or more complicated in nature but does attract more potential users (www.wisegeek.com). At times it may be expensive and complicated, requiring highly skilled personnel and infrastructure to implement. Two types of technology change have shown different effects on the industry leaders. *Sustained technology* sustains the rate of improvement in a

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product's performance in the industry. Dominant industry firms are always at the fore developing and adopting such technologies. *Disruptive technology* changes or disrupts the performance path and continually results in the failure of the industry leading firms. Few technologies are basically or essentially disruptive or sustaining in nature. It's the impact created by the strategy or business model that the technology enables that is disruptive (Christensen & Raynor 2003). The advent of Global System for Mobile communication (GSM) resulted in a major communication leap worldwide. Mobile phones actually became an indispensible electronic gadget defining the modern world (Sally, Sebire, Riddington, 2010). Mobile phone manufacturers continue to include different features on their mobile phone products in addition to basic functions of communication. This is with a purpose of sustaining the market for the products. The mobile phone has become a gadget with full range of services. Ranging from basic telephony to business and leisure or entertainment features. However, performance issues with mobile network services furnished further basis for multiple SIM (Subscriber Identity Module) acquisition by users, for improved access. The problems that led to this were initially poor network coverage and poor performance problems of mobile network service providers in the country and later lower call tariff. Mobile phone users acquired phones depending on the number of networks to which they were subscribed and the trend still exists today. An opportunity was created for a product that would satisfy user needs with regard to multiple SIM capabilities.

1.1 History of Mobile Phone

The history of mobile phone began in the 1920s. The very first usage of it was in taxis/cars where it was used as a two-way radio for communication. Cell phones evolved over time like any other electronic equipment, and each stage or era was most certainly interesting. From its first official use by the Swedish police in 1946 to connecting a hand-held phone to the central telephone network, modern cell phones evolved tremendously. Ring (1947) created a communication architecture of hexagonal cells for cell phones. Later an engineer discovered that cell towers can both transmit and receive signal in three different directions led to further advancement. Early cell phone users were limited to certain blocks of area often referring to base stations covering a small land area. It was not possible to remain in reach beyond such defined boundaries until Joel's development of handoff system. By this, users were enabled to roam freely across cell areas without interruption to their calls. Cell phone had analog services between 1982 and 1990. In 1990, Advanced Mobile Phone Services (AMPS) turned the analog services to digital and went online ("History of Cell Phone" 2010).

1.1.1 First Generation (1G) Mobile Phones

The USA Federal Communication Commission (FCC) approved for public use the first cell phone called Motorola DynaTAC 8000X from Motorola but was made available to the public market after 15 years and was developed by Dr. Martin Cooper. It was considered to be a lightweight cell phone of about 28 ounces. Its dimensions were 13 x 1.75 x 3.5 inches. First generation mobile phones worked with the Frequency Division Multiple Access (FDMA) technology. The first generation mobiles are large in size and heavy to carry. First generation mobile phones were used only for the voice communication purpose("History of Cell Phone" 2010).

1.1.2 Second Generation (2G) Mobile Phones

The second generation mobile phones were introduced in the 1990s. Second generation (2G) mobile phones worked with both GSM and CDMA (Code Division Multiple Access) technologies.