

# Chapter 2

## Role of Networks Operators and Manufacturers in Building a Globalized Wireless World

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### 2.1 Introduction: Trends and Developments

One of the most popular situation that the telecommunications market is experiencing is the merging of operators vendors and manufactures. The list of famous mergers is not limited to the list below; it is extended into a large number that has both advantages and disadvantages. It is difficult to judge the result of a merger as this should cover all aspects and sides, including financial results for the stakeholders, new workplaces (or number of laid-off employees) and future potential. The motivation is simple: Better financial results in a very competitive market, aiming for sustainability and more promising future. As it is proven, brand name of the interested parties is a key role for mergers; and this is often very expensive.

This chapter is organized as follows. [Section 2.1](#) is an overview of current trends and developments in the area of telecommunications. More specifically, famous mergers are discussed presenting both the benefits, as well as the socioeconomic impact. In [Section 2.2](#) two giant international operators are compared in terms of networks, management and results. [Section 2.3](#) presents different aspects of globalization in wireless systems. This includes short description of technologies they share. [Section 2.4](#) concludes the chapter, where the future of wireless telecommunications is predicted. The projection considers the current trends, as well as the technological enablers and barriers.

#### 2.1.1 Nokia Siemens Networks

Nokia Siemens Networks is currently a leading enabler of communication services. The organization comprises the former Networks Business Group of Nokia and the carrier-related businesses of Siemens. The net sale for the calendar year 2009 was

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approximately €12.6 billion. The company is one of the top vendors in the telecommunications infrastructure industry and continues the legacy of two industry champions, namely Nokia and Siemens.

The target group definition for NSN is based on the assumption that 5 billion people, around 70% of the world's population, will be connected by 2015; while billions will be connected by broadband. In the current market only 400 million out of the 2.6 billion people who are connected also have a broadband connection. The estimation is very promising and NSN has the background, the customers and the potential to be a major stakeholder in the coming years [1].

### ***2.1.2 Deutsche Telekom – OTE***

On March of 2008, Deutsche Telekom – Europe's biggest telephone company – acquired 20% of Hellenic Telecommunications Organisation (OTE) shares from Marfin Investment Group (MIG) for €2.5 billion. A few weeks later, Greek Government came to an agreement to sell another 3% of the Greek state's share to the German buyer in the context of its decision to secure the German provider as a strategic partner. Deutsche Telekom will have the management of OTE, while the Chairman of the Board of Director will be from the Greek Government and will have a say in critical decisions.

This deal is not only for the 3%, as the Greek State has supported the negotiations and is an interesting case study, as it involves the State and it bridges the mentality gap of two nations, namely Greece and Germany. On the other hand side, OTE is a key player in the Balkans with presence in several countries, owing both fixed and wireless networks, e.g. RomTelecom – Romania, Armentel – Armenia, Cosmote – Greece, Cosmote – Romania, Globul – Bulgaria, Cosmofon – FYROM, AMC – Albania and other infrastructures and assets. OTE has the potential to make its position even stronger the coming years; while the support of a strategic partner as Deutsche Telekom, will minimize the risk of facing issues with the competitors that still have privileges compared to the incumbent operator [2].

### ***2.1.3 AT&T – Cingular***

In the beginning of 2007 AT&T, the standard bearer of communications excellence for more than a century in the US, fold the 6 year-old Cingular wireless name into the iconic AT&T brand. AT&T Inc. launched a multi-media campaign to begin transitioning the Cingular brand to AT&T in advertising and customer communications, throughout Web sites and nationwide retail stores, and on company buildings and vehicles. "Around the world, our customers recognize the AT&T brand for meaningful innovation, a commitment to customer service, high quality and

exceptional reliability,” said Edward E. Whitacre Jr., chairman and CEO of AT&T. “AT&T, BellSouth and Cingular are now one company, and going to market with our services under one brand is the right thing to do” [3]. This is another example of cooperation between operators that aims to make both stronger base on the experience and the significance of the AT&T brand and the potential of Cingular.

#### **2.1.4 *Telia Sonera***

TeliaSonera is the result of a 2002 merger between the Swedish operator Telia and Finnish operator Sonera. Before that, Telia has not succeeded the merger with Norwegian telecommunications company Telenor, that is now a major competitor in the Nordic countries. Telia is a telecommunications operator with famous as a state telephone monopoly. Sonera on the other hand used to have monopoly only on trunk network calls, while around 75% of local telecommunication was provided by telephone cooperatives. The brand names Telia and Sonera have continued to be used separately in the Swedish and Finnish markets respectively. Of the shares, 37% are owned by the Swedish Government, 13.2% by the Finnish Government, and the rest by institutions, companies, and private investors worldwide [4].

#### **2.1.5 *Alcatel Lucent***

News of the proposed \$13.4 billion merger with Alcatel sent some at the U.S.-based Lucent Technologies polishing up their French while others updated resumes. The new joint company worth \$25 billion plans a European headquarters and an 8,000-person job cut. While CEOs of the two companies focused on the synergistic benefits of a “merger of equals” between wire-line Alcatel and wireless Lucent, analysts and others point out this new marriage could have a rocky start [5].

#### **2.1.6 *SONY – Ericsson***

Sony Ericsson Mobile Communications, a joint venture between Sony Corp and Ericsson, began operations on 1 October 2001 with a capitalization of US \$250 million each, an Ericsson spokesperson said. Sony and Ericsson agreed to merge their mobile phone units in April. In a statement today, Ericsson said that after “necessary approvals”, both companies will start to consolidate their respective operations. The joint venture started with 3,500 employees in product, marketing and sales [6]. According to Ericsson Asia Pacific spokesperson, Arthur Huang, only the management team is based in London.

### **2.1.7 International Telecommunication Union – ITU**

In the 1995–1999 planning period, “globalization” was more a slogan than a reality, since it referred mainly to alliances between major operators to provide end-to-end services to multinational enterprises. Public networks and residential customers were relatively unaffected by this kind of globalization, although various forms of “alternative calling procedures” provided consumers in countries, which allowed such practices a “poor-man’s version” of the benefits enjoyed by big business users.

In the 1999–2003 planning period, globalization is likely became much more of a reality. The WTO agreement made it possible for foreign operators to have direct access through interconnection and interoperability to public networks in most of the world’s major telecommunication markets, as well as to make direct investments in the development of those networks [7].

## **2.2 Case Study: Vodafone and Telefonica**

An interesting study is the comparison of Vodafone and Telefonica, as both operators are widely spread; owing a large number of networks; while they have both similarities and differences.

Vodafone Group Plc is the world’s leading mobile telecommunications company, with a significant presence in Europe, the Middle East, Africa, Asia Pacific and the United States through the Company’s subsidiary undertakings, joint ventures, associated undertakings and investments. On 31 March 2008, based on the registered customers of mobile telecommunications ventures in which it had ownership interests at that date, the Group had 260 million customers, excluding paging customers, calculated on a proportionate basis in accordance with the Company’s percentage interest in these ventures [8].

Vodafone holds interests in 33 licensed network operators located in 27 countries (Fig. 2.1).

Vodafone has centralized many of functions in Newbury in the United Kingdom. There is of course a distributed management mechanism; however networks that fully belong to Vodafone report to Newbury.

On the other hand, Telefónica is one of the world’s leading operators with presence in Europe, Africa and Latin America. Telefónica has more than 60% of its business outside its home market and a reference point in the Spanish and Portuguese speaking market. In Spain the Group is providing services to more than 46.4 million customers while in Latin America, Telefónica gives service to more than 134.1 million customers as of the end of December 2007 becoming the leader operator in Brazil, Argentina, Chile and Peru and has substantial operations in Colombia, Ecuador, El Salvador, Guatemala, Mexico, Morocco, Nicaragua, Panama, Puerto Rico, Uruguay and Venezuela. The Group stands in 4th position in the sector worldwide in terms of market capitalisation the 1st as an European



Fig. 2.1 Vodafone's presence world-wide [8]

integrated operator and 2nd in the Eurostoxx 50 ranking, composed of the major companies in Europe (31 December 2007). The Group is listed on the main Spanish and foreign stock markets and has over 1.5 million direct shareholders according to separate records in favour of individuals and corporations [9]. As of December 2007, Telefónica's total number of customers amounted to 228.5 millions.

The contrasting approaches of Vodafone and Telefonica show the importance of getting the globalization model right. This requires the right balance between global integration and local management.

In Fig. 2.2 the stock of Vodafone and Telefonica are compared for a period of 4 years. One can see that even the pattern of their stock behavior has similarities, although the figure shows a higher increase for Telefonica (Fig. 2.3).

## 2.3 Aspects of Globalization

Aspects of globalization are discussed in the previous section, mainly with examples and success stories. In this section the technical aspects of achieving globalization of wireless network is presented. The technical aspects are classified into following categories:

- **Network sharing:** Describes the situation where two or more operators are sharing networking resources, whether these refer to antennas and base stations, or even core components.

## Market Size

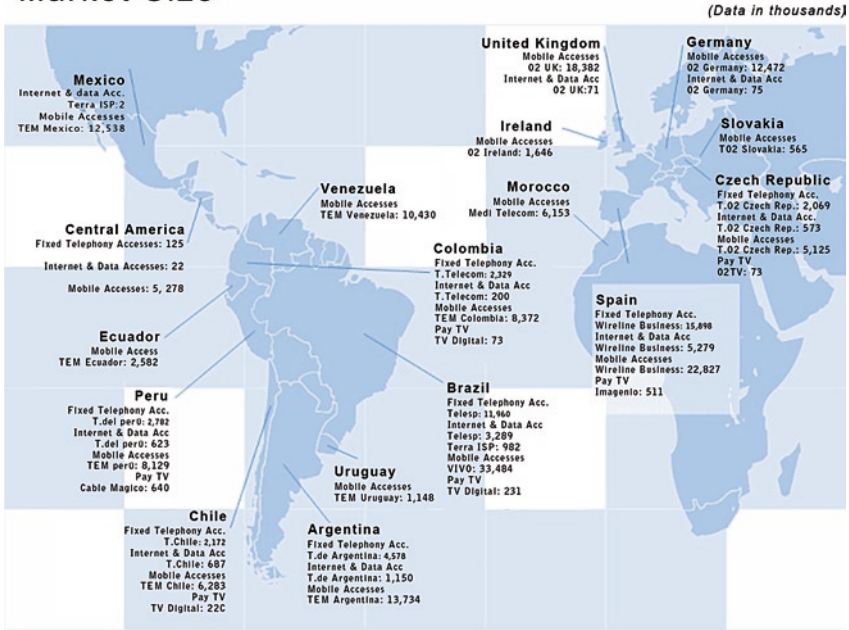


Fig. 2.2 Telefonica's presence world-wide [9]



Fig. 2.3 Comparison of Telefonica and Vodafone stock for the last 4 years [10]

- **Site co-location:** Use of the same site for more than one operator to host its antennas and base stations. This is a typical situation, especially in urban areas, where sites are difficult to be found.
- **Base station hotels:** This is a new trend, where a third party offers space for base station subsystems and can offer resources based on SLAs to interested operators. This is mainly applicable in 3G systems.
- **Intersystem handover:** Handover between heterogeneous systems that belong to the same or different operator. The handover should be as seamless as possible; in any case the sessions/call should never be interrupted.

- **Roaming agreements:** Roaming agreements plays a significant role in the globalization world, as it is mainly linked with prices that the end user pays when using networking resources of different operators in the converging world of telecommunications.

In the following section, one of the technical aspects, namely network sharing, is discussed.

## 2.4 Network Sharing

As presented in [Section 2.3](#), network sharing, in any way it is applied, is a situation that is required to bring operators closer, allowing them to use their resources in a more efficient way and achieve their goals. Often this is the beginning of a stronger relationship that leads into mergers as described in [Section 2.2](#).

Network sharing has already been applied in several cases and according to [11]:

- “The impact is uncertain”
- “The benefit is a reduction in CAPEX”
- “Sharing does allow operators to potentially realize the value of their assets but by sharing they are degrading the value of a potentially valuable tactical asset”
- “Sharing could potentially be negative for an incumbent with a strong tactical asset in terms of the network which is costly and increasingly difficult to replicate”
- “In general the pros and cons of sharing is not clear although the immediate city reaction to a sharing agreement is likely to be positive

In general, the objectives of such collaboration are to reduce network cost or spread investment in time to improve balance sheet and enhance ability to raise finance and to reduce time to market and start to recoup from investment as early as possible. This helps to rollout “environmentally friendly” networks and enhance 3G footprint even if at present the industry emphasizes services instead of geographical coverage as for 2G.

Following figures present different approaches to network sharing (Figs. [2.4–2.7](#)).

## 2.5 Future of Wireless Telecommunications

The future of wireless telecommunications is unforeseen. From a technological point of view it is very promising and definitely “globalized”. This will involve all combinations presented above, in order to provide services by exploiting new technologies in the most efficient way.



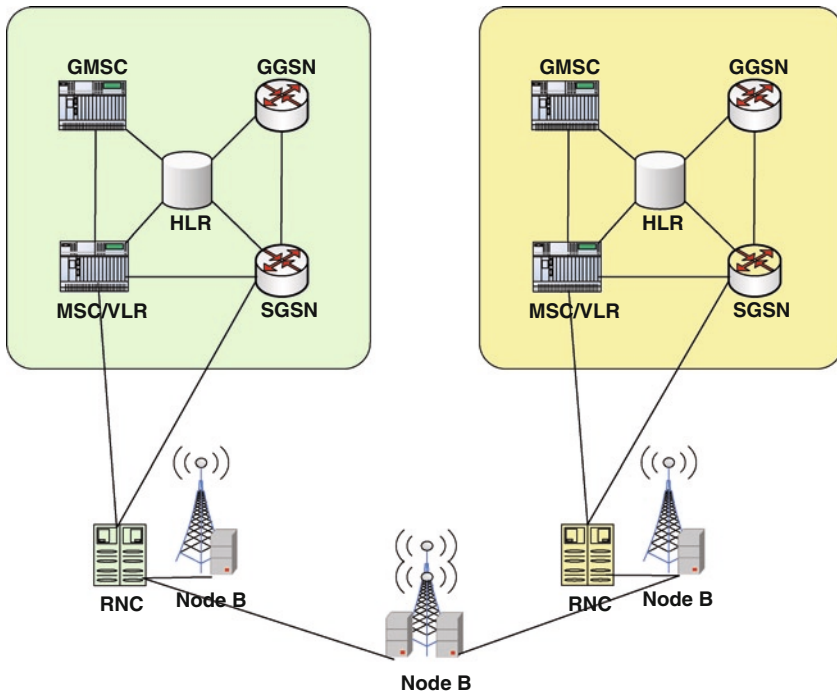


Fig. 2.4 Site sharing

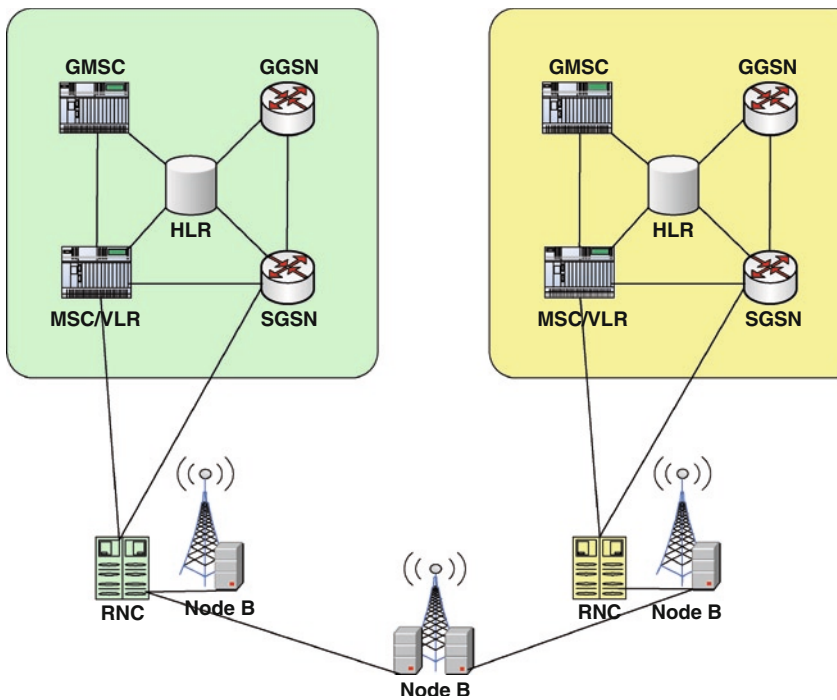


Fig. 2.5 Antenna sharing



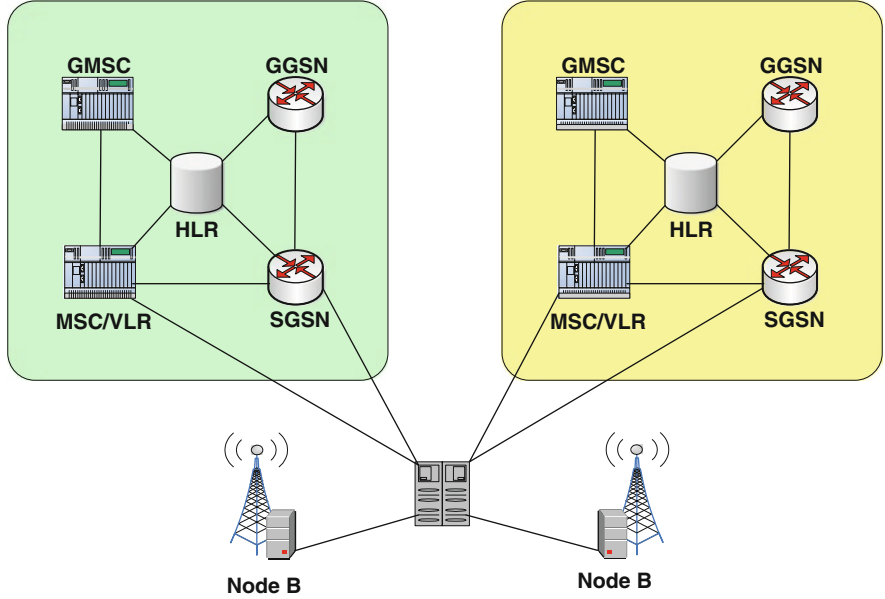


Fig. 2.6 RAN sharing (NB and RNC)

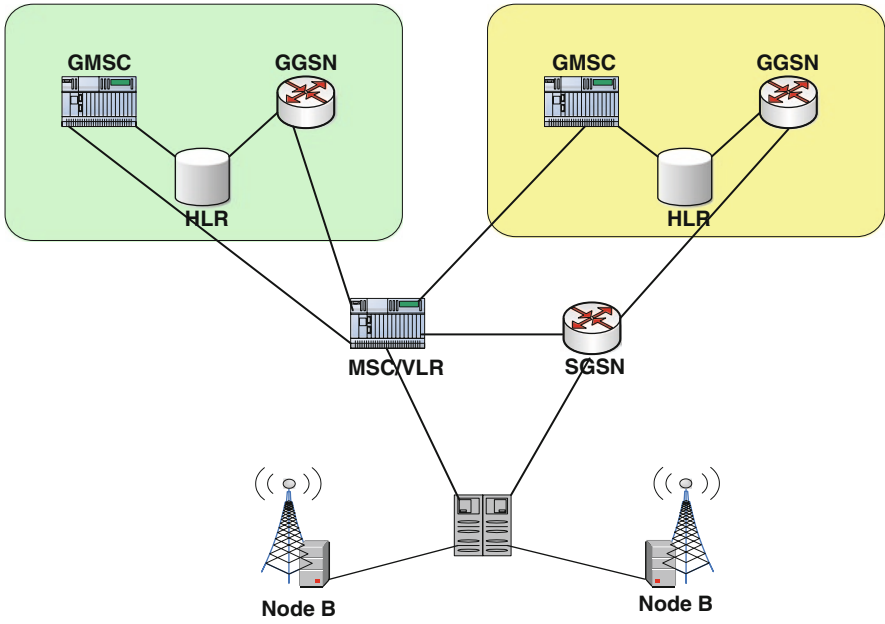


Fig. 2.7 Full MVNO scheme

From a socioeconomic point of view the future of wireless telecommunications is expected to be globalized as well. This means that more mergers and acquisitions are foreseen, common backbone infrastructures and more effort on negotiating SLAs among operators and infrastructure owners.

It is expected to have and even higher competition among very strong partnership schemes with decreased CAPEX for the operators and lower costs for the end-user. These benefits may however have as a negative outcome the decrease of workplaces in the “globalized” economy, which makes the need for new businesses and paths mandatory in order to avoid such situations.

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