



Colegio de Estudios  
Superiores de Administración

## NOKIA ACQUIRES ALCATEL-LUCENT

### ACADEMIC CASE

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Academic Case

**NOKIA ACQUIRES ALCATEL-LUCENT**

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*Leonardo Semma wrote this academic case under the supervision of Dr. Roberto de la Vega solely to provide material for class discussion. The author does not intend to illustrate either effective or ineffective handling of a managerial situation. The information used to support this academic case is public, and it does not compromise the proprietary information of Nokia Corporation.*

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## **ABSTRACT**

In 2015, Nokia announced the acquisition of its French-based competitor Alcatel-Lucent in an all-stock agreement. By the end of 2015, Nokia announced the organizational structure composed of four business groups: Mobile Networks, Fixed Networks, Applications & Analytics, and IP/Optical Networks. After the acquisition, Nokia has been evolving its operational structure, with changes such as creation of new business groups and changes in the support functions, among others. But despite the natural evolution of the organizational design of a large corporation, the business group model followed the acquisition of Alcatel-Lucent was not only maintained but also strengthened with the creation of new BGs. In October 2019, however, Nokia announced the share payment policy to be paused until new notice, due to a lag in the race of the latest mobile broadband technology called 5G against its main competitors.

## **INTRODUCTION**

Everybody knows what Nokia is, a legendary brand in the mobile phone industry. But a telecom infrastructure equipment is not as exciting as a brand-new, wide-screen, integrated-camera cell phone for most people. During at least 30 years, Nokia has been part of that industry aimed to provide the communication service providers (CSP) the needed equipment to sell the services that people consume in a daily basis through its communication devices such as a cell phone, a desk phone, a laptop, or even a TV. Today, the telecom infrastructure equipment is Nokia's core business, but in the mid-2000s, that

portion of the Nokia business was handled separately from Nokia Mobile Phones. At that time, Nokia decided to join forces with the German giant Siemens to create a 50 / 50 joint venture named Nokia Siemens Networks (NSN) in 2006.

After a turbulent decade in the 2000s that brought troubles in both the declining Mobile Phone market (due to the lagging behind in the race of creating a thriving mobile phone ecosystem against Apple and Google) and the problems faced by NSN due to the “difficulty competing against mobile network giants Ericsson and Huawei Technologies.” (Lawson, 2013), Nokia started a restructuring plan of the NSN in 2011 aimed to emphasize on mobile broadband by focusing “on mobile network infrastructure and services market, targets significant operating expense and production overhead savings, and workforce reduction of approximately 17,000.” (Nokia Corporation, 2011). Under Rajeev Suri’s leadership, the CEO, NSN has been “turned from a lossmaking joint venture with Germany’s Siemens into a profitable, wholly owned subsidiary.” (The Economist, 2013). In July 2013, “Nokia agreed to buy back Siemens’ share of the company for \$2.2 billion and make it a wholly owned subsidiary.” (Lawson, 2013).

NOKIA announced the divestment from the Mobile Phone industry in 2013, and after the transformation of its core business from a handset device manufacturer into a telecom infrastructure equipment provider focused on Mobile Broadband Access, it announced the acquisition of its rival ALCATEL-LUCENT (from now on also referred as ALU) in 2015. The M&A process was planned to face fierce competition in the telecom infrastructure industry and put pressure over the main rivals Ericsson and Huawei. The main objectives of the acquisition were to “provide an end-to-end portfolio of products, software and services” and to “achieve approximately EUR 900 million of operating cost synergies in full year 2018” (Nokia Corporation, 2015).

By the end of 2015, Nokia announced the organizational structure composed of four business groups: Mobile Networks, Fixed Networks, Applications & Analytics, and IP/Optical Networks. In 2016, Nokia completed the acquisition of all the ALU shares. The new Nokia will be grouped in the Nokia Networks business (from now on also referred to NOKIA)

In October 2019, however, Nokia announced the share payment policy to be paused until new notice, due to a lag in the race of the latest mobile broadband technology called 5G against its main competitors. The market reacted negatively by dropping the share by up to 30%. Some analyst thinks there are more reasons behind this announcement than a pure technology race. Stefan Pongratz from Dell’Oro Group stated that:

Nokia is honing-in specifically on these increased costs of the FPGA versus ASICs. That can explain part of the story. But if you take the overall business, there is more going on here than just FPGA migration. (Hardesty, 2019)

## **TELECOM EQUIPMENT INDUSTRY**

The telecom equipment market revenues were USD 319 billion in 2016, but it is expected to grow up to USD 500 billion by 2022 (see Exhibit 1). This industry is targeted to run the back-end solutions, from hardware to software to services, needed to provide communication services to people, companies, and nowadays, things. The industry players design, develop, build, sell, implement, operate, optimize, and provide post-sales maintenance services to the equipment needed to build networks by the IT and the Communications Service Providers (CSP) operators. Marketwatch defines telecommunications equipment as a “general designation of hardware and software systems that transmit, receive, or transmit speech, text, data, images, or any other information of any nature by means of electromagnetic or light wired or wireless.” (Marketwatch, 2019).

Some analysts split the market into two main segments: wireless and wired telecom equipment. Dell’Oro, a reputed telecom market analyst, has segmented the market in seven domains: Broadband Access and Home Networking, Carrier IP Telephony, Microwave Transmission & Mobile Backhaul, Mobile Radio Access Networks (RAN), Optical Transport, Router and Carrier Ethernet Switch, and Wireless Packet Core. Also, the two largest equipment markets in 2018 were Mobile RAN and Optical Transport (Pongratz, 2019).

In 2018, 80% of the market revenue was accounted by the seven major manufacturers: Huawei, Nokia, Ericsson, Cisco, ZTE, Ciena, and Samsung (Pongratz,

2019). Huawei is the leader and accounts for 28% of the telecom equipment market share (3Q18 through 2Q2919) (Weissberger, 2019). Exhibit 2 shows the telecom equipment market share.

Over the Top (OTT) players such as Google, Facebook, Twitter, Instagram, and giants in the e-commerce such as Amazon, Alibaba, eBay, and many others, are the actors who are making more money in the telecom chain. Applications such as Whatsapp are reducing revenues from the telecom operators in SMS and phone calls. This pressure in the income of the operators is pushing hard to reduce their investments in CAPEX and OPEX. And that pressure is bypassed to the telecom equipment manufacturers. Due to that reason, consolidation is a significant trend in the telecom market, in both the operators (CSPs) and manufacturers. Nokia and Siemens in 2006, Alcatel and Lucent in 2006, Oracle and SUN in 2010, Ceragon and NERA in 2011, Ericsson and Telcordia in 2012, Tellabs and NSN Optical Networks (2013), Dell and EMC in 2015, Nokia and Alcatel-Lucent in 2016, Nokia and Comptel in 2017, Infinera and Coriant in 2018, Ericsson and Kathrein in 2019, and multiple small acquisitions and divestments in all the segments, are a sample of the dynamics of this sector in the manufacturer side.

Another central trend in the telecom market is the use of open hardware architectures to reduce the dependency of telecom manufacturers. Today, most of the applications run in cloud data centers powered by x86 architecture servers, where IT players such as HPE, DELL/EMC, Oracle-SUN, Lenovo, and other telecom manufacturers such as Huawei and Nokia have products. Other initiatives to have open hardware are under development in the industry including Open Switches, Open Routers, and Open RAN, among others. In that sense, the hardware is becoming a commodity, moving the industry to the software as the main differentiator. To overcome this challenge, Nokia announced four key priority areas, one of them was to build a strong, standalone software business in November 2016. In May 2017, Bhaskar Gorti, president of Applications & Analytics at Nokia, said:

As the next step in our strategy to build a standalone software organization at scale, we are making major investments in our software and service capabilities that will help customers build strong digital businesses. We want to eliminate the need for

customer service calls by avoiding issues in the first place. We also want to give service providers the ability to better understand and contextualize consumer needs. (Nokia Corporation, 2017)

## NOKIA COMPANY BACKGROUND

Nokia has a long-standing history of change. In fact, Renewal is part of its values. Nokia started as a pulp mill factory in 1865. In 1902, Nokia expanded its business to electricity generation. By 1967, Nokia had businesses in forestry, cable, rubber, and electronics. In the 80s, Nokia acquired many companies such as television makers, electronics and computer makers, and a mobile telephony maker, among many others (Wikipedia, 2019). That was the origin of the legendary Nokia Mobile Phones business.

In 2006, Nokia had four business groups, but three out of the four were focused on mobile phones (Mobile Phones, Multimedia, and Enterprise Solutions). The fourth business group was Networks, accounting for 18,12% of Nokia's revenues, but only 13,54% of the operating profit (Nokia Corporation, 2007). In June 2006, Nokia and Siemens announced the intention to create a joint venture by combining "Nokia's networks business and the Siemens' carrier-related operations for fixed and mobile networks in a new company owned approximately 50% of each Nokia and Siemens and consolidated by Nokia" (Nokia Corporation, 2007, p. 16).

In 2009, Rajeev Suri was appointed as CEO of NSN. In the same year, Nokia announced a plan to improve its financial performance, market position, and increase profitability.

By 2011, Nokia faced fierce competition in the mobile phone industry. Apple and Google were successful in creating a sustained ecosystem, and they gained business track and market share in that industry. Nokia recognized its mobile phone's operating system, Symbian, was not competitive enough in leading markets and signed a partnership with Microsoft to construct a new ecosystem for smartphones (Nokia Corporation, 2011). At the same time, Nokia announced that NSN had "received expressions of interest from private equity firms seeking to invest." (Nokia Corporation, 2011). In the same year, NSN

announced a turnaround plan to focus on mobile broadband and related services. The Nokia press release stated:

These planned measures are expected to include elimination of the company's matrix organizational structure, site consolidation, transfer of activities to global delivery centers, consolidation of certain central functions, cost synergies from the integration of Motorola's wireless assets, efficiencies in service operations, and company-wide process simplification (Nokia Corporation, 2011).

2013 was an exciting year for Nokia, announcing the acquisition of the Siemens stake in NSN (renaming NSN as Nokia Solutions and Networks) and the divestment of the mobile phone market. Nokia was a significantly different company, with a solid infrastructure business coming from NSN, the HERE location and mapping business, and the licensing and patenting business. Risto Siilasmaa, Chairman of Nokia, stated:

At the same time, we had a share in a network-infrastructure joint venture, NSN, which had been spun off some years earlier. Both Nokia and Siemens had, in effect, given up on the network business as noncore. As a stagnating joint venture, NSN and its management had been incentivized either to become an IPO or a trade-sale asset. At one point, each parent company funded NSN with \$500 million—and basically said that was it: “Go bankrupt if you will, but you will not get a penny more.” The fact that it subsequently became a vibrant business just emphasizes the fantastic turnaround that Rajeev Suri [now Nokia’s president and CEO] and his team pulled off there from 2011 on. (McKinsey, 2016)

In 2015, before the ALU acquisition, Nokia was a solid company, with revenues of EUR 12.49 billion by the end of that year (see Exhibit 3). The company accounted for net cash of EUR 7.77 billion, and more than 56,000 employees worldwide, spread in around 130 countries across the globe (Nokia Corporation, 2016). The company was expending about 18 percent of its revenues in R&D. In this year, Nokia sold HERE, its business related to digital mapping and location services to a German automotive industry consortium.

The two main businesses were Nokia Networks (former NSN), a leading infrastructure provider for mobile networks and related services, and Nokia Technologies aimed to leverage innovation and to manage its patent and licensing business (Nokia Corporation, 2016).

Nokia Networks represented 92% of the Nokia revenues. Nokia is denominated by itself as the world's mobile broadband specialist. It was segmented in two primary businesses: Mobile Broadband and Global Services. The most important region was Europe, followed by the Middle East & Africa (see Exhibit 3).

Mobile Broadband business unit provides solutions for mobile voice and data services through two clusters: Radio and Core. The Radio cluster covers all the technologies related to RAN and investing actively in the next generation of RAN technology: LTE-Advanced and 5G. The Core cluster includes the switching portfolio, voice and packet solutions. The Core cluster is also developing CEM (Customer Experience Management) solutions, virtualization and software-rich solutions (Nokia Corporation, 2015, p. 22).

Global Services business unit "provides mobile operators with a broad range of services, from network implementation to care services, managed services for network and service operations, network planning and optimization and systems integration." (Nokia Corporation, 2014).

A telecom solution in the mobile broadband industry requires both products and services. Despite there were two main businesses inside Nokia Networks, both were interdependent and closely linked. The Global Services provide both product-attached services and professional services, mainly for the products sold by Mobile Broadband. Although Nokia had two divisions, both were related to the same business, so it could be classified as a functional organization. Risto Siilasmaa stated:

Because even after moving entirely into networking, Nokia was a one-trick pony. We were mobile-broadband specialists, and we couldn't deliver an end-to-end experience (McKinsey, 2016)

## **ALCATEL-LUCENT COMPANY BACKGROUND**

Alcatel-Lucent (ALU) was formed after the merge of Alcatel (a France-based company) and Lucent (a United States-based company) in November 2006. It was headquartered in Boulogne-Billancourt, France. After the merge, “Lucent shareholders would own 40 percent of the combined company, with Alcatel shareholders owning 60 percent.” (Bajaj, 2006).

Both former companies had roots in the telecommunication industry since the late 19<sup>th</sup> century: Alcatel from La Compagnie Générale d'Electricité (CGE), and Lucent from the Western Electric Manufacturing Company (Wikipedia, 2019). CGE was a conglomerate formed in 1898 and businesses in electricity, transportation, electronics, and telecommunications. In 1991, CGE changed its name to Alcatel Alsthom (Wikipedia, 2019). From the Lucent side, American Telephone & Telegraph (AT&T) was created from the purchase of Western Electric by Bell Telephone Company in 1877 (Reference for Business, 2019). Bell Telephone Laboratories (Bell Labs) was established in 1907. AT&T was split into three companies in 1996, one of them was Lucent. Lucent also acquired most of the Bell Labs (Reference for Business, 2019).

Since the merge, ALU had been struggling with inefficiencies and cross-cultural differences, leading to six quarterly losses (Nordick, 2016). In 2011, ALU reported its first positive operating profit (EUR 921 million), in contrast with the operating losses of EUR 159 million in 2010 (El País, 2012).

In June 2013, ALU launched a three-year strategic plan called “The Shift Plan” designed to transform the ALU core business from an end-to-end telecom provider to a player focused on IP and cloud networking, and ultra-broadband specialist (Alcatel-Lucent, 2015, p. 12). The plan also considers the expansion “of the customer base to new emerging customer segments such as cable service providers web-scale, large tech enterprises or vertical business.” (Alcatel-Lucent, 2015, p. 17). Aligned with the strategic view of the ALU businesses, ALU created three main segments – Core Networking (IP Routing, IP Transport, and IP Platforms), Access (wireless and fixed networks), and Others – each with a tighter and more controlled portfolio (Alcatel-Lucent, 2015, p. 34). ALU also was structured with three organizations with specific focuses: Operations, Sales, and Strategy

and Innovation. Additionally, it was supported by three corporate functions: Finance and Legal, Human Resources, and Marketing.

2014 was “the first year of positive free cash flows (excluding restructuring) for the company since Alcatel and Lucent’s merger in 2006.” (Forbes, 2015).

By the end of 2015, ALU had revenues of EUR 14.3 billion, expenditures of around 17% of its revenues in R&D, and approximately 50,000 employees in more than 100 countries (see Exhibit 4).

The organization structure was aligned by the segments, and each segment had the following product divisions (Alcatel-Lucent, 2016)

- Core Networking
  - IP Routing
  - Terrestrial Optics
  - Wireless Transmission
  - Submarine
  - Network Build & Implementation IP
  - IP Platforms & Platforms Professional Services
  - Strategic Industries
- Access:
  - Wireless and Network Build & Implementation Wireless
  - RFS – Radio Frequency Systems
  - Fixed Access and Network Build & Implementation Fixed
  - Multivendor Maintenance
  - Leasing
  - Managed Services

The telecom equipment segment attended by each ALU product division is quite different, and according to the ALU internal division, each product division has its own services organization. In that sense, it could be classified as a multi-division organization.

## THE ACQUISITION OF ALCATEL-LUCENT

According to Michel Combes, CEO of former Alcatel-Lucent, “Nokia had initially approached Alcatel to buy only its wireless business but, after getting rebuffed, agreed to buy the whole company” (Forbes, 2015).

In April 2015, Nokia announced the acquisition of ALU in an all-stock deal, valuing Alcatel-Lucent at EUR 15.6 billion. It corresponds to a fully diluted premium of 34% (equivalent to EUR 4.48 per share) and a premium to the shareholders of 28% (equivalent to EUR 4.27 per share). After the acquisition process, ALU shareholders owned 33.5% of the combined company, and Nokia shareholders owned 66.5%. The target operating cost synergies announced was EUR 900 million to be achieved in 2019, plus EUR 200 million of reduction of interest expenses to be achieved in 2017 (Nokia Corporation, 2015).

Besides the announced financial benefits in terms of cost synergies and interest expenses, one of the most important objectives of the ALU’s acquisition was the complimentary portfolios to create a truly end-to-end network provider. Rajeev Suri stated:

In the face of fast-rising bandwidth and other performance demands, customers know they need to take an architecture-driven, end-to-end approach that Nokia offers, with a coordinated, holistic view across all elements of the network (Nokia Corporation, 2018)

Additionally, Alcatel-Lucent provided complimentary geography. Exhibits 3 and 4 show the revenues by geography, where it is evident that Nokia was not performing as well as Alcatel-Lucent in the highest profitable market of the telecom equipment industry, the U.S. Forbes stated:

It is pertinent to note that Alcatel-Lucent is a very strong player in the U.S. wireless equipment market, having long standing contracts with the major carriers- Verizon and AT&T, as well as in the global service provider router market with the second highest share after Cisco. (Forbes, 2015)

The market reacted positively to the acquisition announcement. According to the Financial Times, ‘Nokia’s shares rebounded on Wednesday, rising 4.7 per cent to €7.84 after falling 3.6 per cent on Tuesday. Alcatel’s suffered the reverse phenomenon, falling 9

per cent to €4.06 after a 16 per cent jump on Tuesday.” (Milne & Thomson, 2015). But not all analysts reacted positively. Juha-Pekka Helminen, Nokia’s former strategy director, wrote on Twitter “Doing merger with Alcatel crazy . . . Alcatel-Lucent is and will be a mess [plus the] French government” (Milne & Thomson, 2015)

## **ORGANIZATIONAL DESIGN IN A POST-MERGER INTEGRATION PROCESS**

Integrating a business into the acquirer’s operations involves six major activities that fall loosely into the following sequence: (i) Premerger planning; (ii) Resolving communication issues; (iii) Defining the new organization; (iv) Developing staffing plans; (v) integrating functions and departments; and (vi) building a new corporate culture.

Designing an effective organizational setup in a post-merger integration process requires knowledge of the target company’s prior organization, some sense as to the effectiveness of this organization. There are different organization structures, such as per functions, customers, projects, divisions, and matrix, among others. Although there could be different organizational setups, they could be summarized as:

- Functional organizations: organizations to be grouped as per functions. It is recommended for single single-business firms, and the main advantage of this setup is that “grouping together functionally similar tasks is conducive to exploiting scale economies, promoting learning and capability building, and deploying standardized control systems.” (Grant, 2016, p. 156). The functional structure is seen as a centralized-based organization, with tight control from the CEO and the leadership team.
- Multidivisional organizations: aimed to decentralize the decision-making process. Developed in the 1920s to overcome the challenges of diversification. The multidivisional structure is seen as a decentralized-based organization, letting the divisions full accountability for reaching the business targets of the organization. This setting facilitates the divest in case of needed. Matrix organizations: aimed functional structures to assign resources to different groups, and those different

groups could be either per projects, per geographical location, per customers, per divisions, etc.

Large, complex corporations use to have multi-dimensions organizations. Divisions (multidivisional structure) are grouped per functions (functional structure), and support functions could also be allocated to provide services and / or resources for different divisions, functions, customers, and projects (matrix structure). Thus, modern organizations are designed as a mix of structures. But the centralized and decentralized management style is empowered by the selected organizational design.

Hasperlagh and Jemison developed an integration matrix to analyze the autonomy needed by the acquired firm; the purchaser could choose between absorption, symbiosis, preservation, and holding (see Exhibit 5).

In a post-merger integration process, it is recommended to focus less in what the organization looks like and focusing more in how it works (e.g., the processes needed to accomplish the business objectives aimed in a merger or acquisition), which is reinforced by Bodner and Capron when stated that structure could influence strategy. DePamphilis also highlights “the benefits of a well-managed, rapid postmerger integration suggest a centralized management structure initially with relatively few management layers.” (DePamphilis, 2018) to pursue a common view of objectives and a unified strategy the acquisition process, and may gradually evolve to a more decentralized structure to take advantage of the benefits of the diversification.

## **THE ORGANIZATIONAL STRUCTURE OF NOKIA AFTER THE ACQUISITION**

Nokia decided to combine the Alcatel-Lucent into Nokia Networks by creating four business groups: Mobile Networks, Fixed Networks, Applications & Analytics, and IP/Optical Networks. Nokia Technologies would remain as a separate entity. Nokia stated that “Each business group would have strategic, operational and financial responsibility for its portfolio and would be fully accountable for meeting its targets” (Nokia Corporation, 2015). The combination of both Nokia and ALU business units into groups are:

- Mobile Networks (MN): include Nokia's and Alcatel-Lucent's Radio portfolios and most of their Core products including IMS/VoLTE, and Subscriber Data Management, as well as “the associated mobile networks-related Global Services business” (Nokia Corporation, 2015).
- Fixed Networks (FN): coming from Alcatel-Lucent's Fixed Networks business, aimed to provide both copper and fiber access products and services.
- Applications & Analytics (A&A): include the main software platforms from both companies. The portfolio managed by A&A includes “Customer Experience Management, OSS as distinct from network management such as service fulfilment and assurance, Policy and Charging, services, Cloud Stacks, management and orchestration, communication and collaboration, Security Solutions, network intelligence and analytics, device management and Internet of Things connectivity management platforms.” (Nokia Corporation, 2015)
- IP/Optical Networks (ION): coming from Alcatel-Lucent's IP Routing, Optical Transport, IP video business, and the Software Defined Networking (Nuage), combining with the Nokia's IP partners and Packet Core portfolio.

Additionally, Nokia appointed six units for the support organizations: Chief Financial Office (CFO), Chief Customer Operations Office (CCOO - responsible for customer interaction and sales), Chief Innovation and Operating Office (CIOO), Chief Human Resources Office (CHRO), Chief Strategy Office (CSO), Chief Marketing Office (CMO), and Chief Legal Office (CLO).

The organizational structure of Nokia Networks after the merge is shown in Exhibit 6. It followed the multidivisional structure drawn as Business Groups (BGs), and each BG had full accountability for meeting its targets. Each BG also had its own services organization.

## **LOOKING FORWARD**

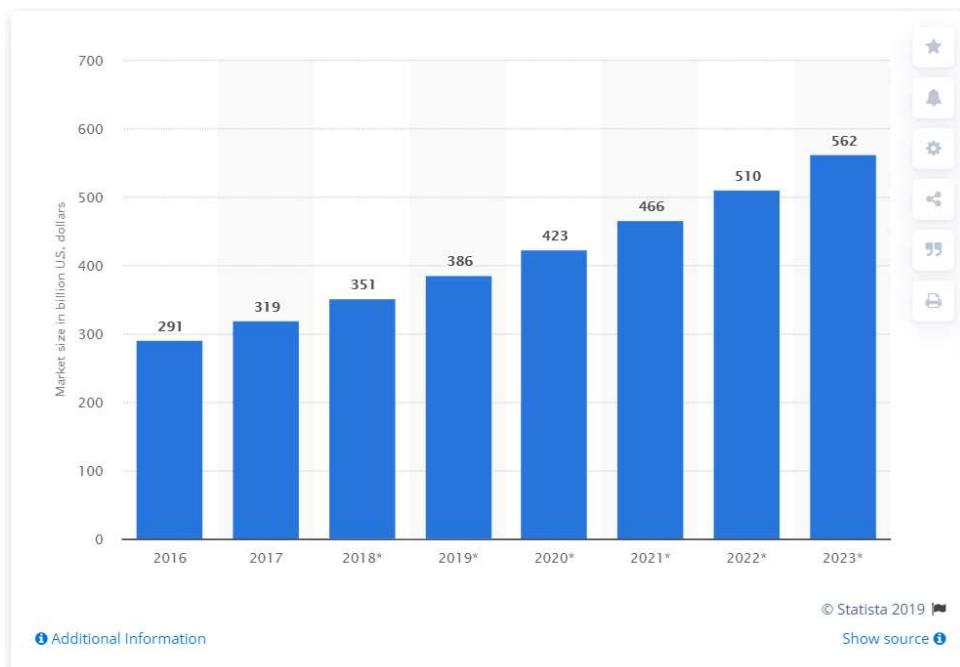
After the acquisition, Nokia has been evolving its operational structure. In 2017, Nokia announced the separation of the Mobile Networks in two closely linked business

groups: Mobile Networks (focused on products), and Global Services (focused on services related to Mobile Networks) (Nokia Corporation, 2017). In that new announcement, it was also informed the split of the CIOO in three organizations: a new Chief Operating Office (COO), innovation activities to Chief Technology Office, and incubation to CSO. In 2018, Nokia announced the renaming of the Applications & Analytics to Nokia Software “to better reflect our strategy and focus on building a strong, standalone software business.” (Nokia Corporation, 2018, p. 3). In the same year, it was announced a new business group, Nokia Enterprise, to “enhance our ability to capture higher-growth, higher-margin opportunities as companies progress with their digital transformations.” (Nokia Corporation, 2019, p. 5). In 2019, Nokia announced the discontinuing of the COO and the distribution of the organization in other groups. (Nokia Corporation, 2019). Both Nokia Software and Nokia Enterprise had their own standalone sales force.

But despite the natural evolution of the organizational design of a large corporation, the business group model followed the acquisition of Alcatel-Lucent was not only maintained but also strengthened with the creation of new BGs.

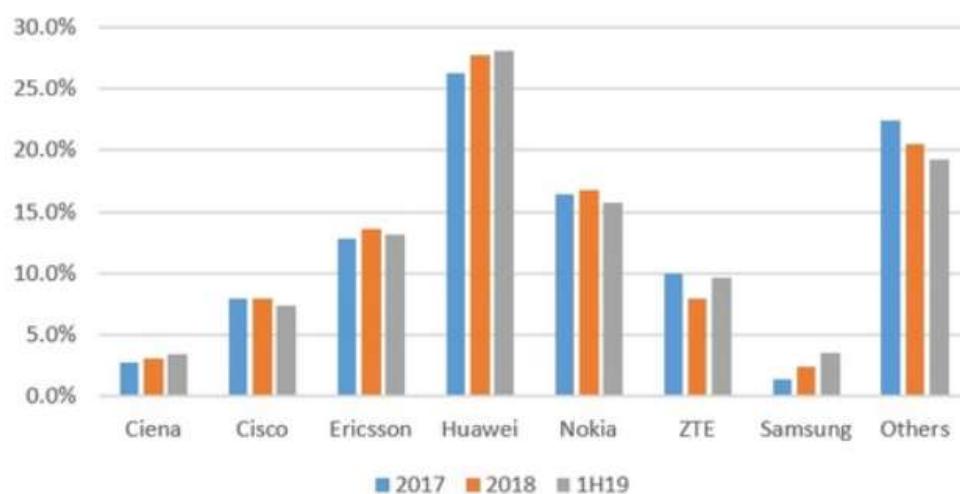
The cost pressure due to the 5G development made some analysts ask about the senior management stability in the Mobile Networks business group. According to Hardesty, “Nokia has had three different people head up its mobile networks division during a four-year time frame. About nine months ago, it replaced the former head of mobile networks Marc Rouanne with Tommi Uitto.” (Hardesty, 2019).

## EXHIBIT 1: TELECOM EQUIPMENT MARKET SIZE



Source: (Holst, 2018)(Holst, 2018) (Holst, 2018)

## EXHIBIT 2: GLOBAL TELECOM EQUIPMENT MARKET SHARE



Source: (Weissberger, 2019)

EXHIBIT 3: SELECTED NOKIA DATA

<b>End of December (million EUR)</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
<b>Revenue by segments</b>	<b>12.499</b>	<b>12.732</b>	<b>12.709</b>
Nokia Networks			
Mobile Broadband	6.068	6.092	5.528
Global Services	5.422	5.105	5.752
Technologies			
Technologies	1.009	565	515
HERE			
HERE	0	970	914
<b>Revenue by geography</b>	<b>12.499</b>	<b>12.732</b>	<b>12.709</b>
Europe	3.813	3.886	3.940
Greater China	1.712	1.410	1.201
Asia-Pacific	3.230	3.364	3.428
North America	1.594	1.919	1.656
Latin America	973	1.053	1.315
Middle East & Africa	1.177	1.100	1.169
Administrative and Selling expenses	1.652	1.634	1.671
Net Income (loss)	<b>1.194</b>	<b>1.171</b>	<b>41</b>
R&D	2.126	2.364	2.619
R&D/Sales	17,01%	18,57%	20,61%
<b>Cash and cash equivalents at end of</b>	<b>7.775</b>	<b>5.023</b>	<b>2.309</b>
Assets	20.926	21.063	25.191
Liabilities	10.402	12.394	18.531
Equity	10.524	8.669	6.660
Headcount (number of employees)	56.690	51.499	55.244

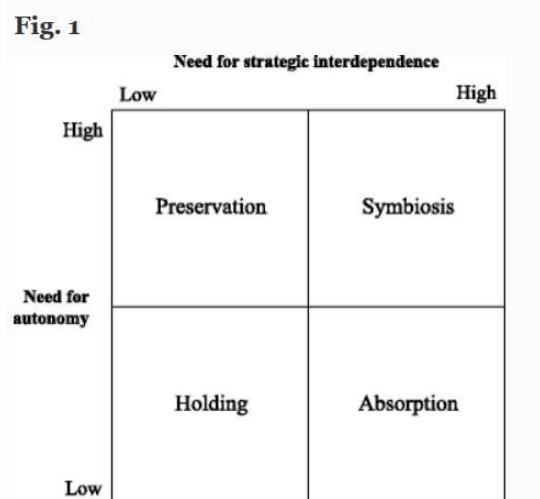
Source: Created by the author using data from (Nokia Corporation, 2014), (Nokia Corporation, 2015) (Nokia Corporation, 2016)

EXHIBIT 4: SELECTED ALCATEL-LUCENT DATA

<b>End of December (million EUR)</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
<b>Revenue by segments</b>	<b>14.275</b>	<b>13.178</b>	<b>13.813</b>
Core Networking			
IP Routing	2.669	2.368	2.253
IP Transport	2.450	2.114	2.120
IP Platforms	1.661	1.484	1.778
Access			
Wireless	4.896	4.685	4.510
Fixed	2.268	2.048	2.069
Managed Services	262	369	791
Licensing	56	55	77
Others			
Others and unallocated	13	55	215
<b>Revenue by geography</b>	<b>14.275</b>	<b>13.178</b>	<b>13.813</b>
France	817	771	798
Other Western Europe	2.101	1.929	2.125
Rest of Europe	281	282	361
China	1.459	1.342	1.097
Other Asia Pacific	1.499	1.289	1.230
U.S.	5.913	5.488	5.986
Other Americas	1.192	1.009	1.209
Rest of world	1.013	1.068	1.007
Administrative and Selling expenses	1.761	1.621	1.862
<b>Cash and cash equivalents at end of</b>	<b>251</b>	<b>-34</b>	<b>-1.269</b>
R&D	2.378	2.215	2.268
R&D/Sales	16,66%	16,81%	16,42%
<b>Net Cash</b>	<b>4.905</b>	<b>3.878</b>	<b>4.096</b>
Assets	23.783	21.460	21.896
Liabilities	18.603	18.766	18.233
Equity	5.180	2.694	3.663
Headcount (number of employees)	50.047	52.673	62.311

Source: Created by the author using data from (Alcatel-Lucent, 2015), (Alcatel-Lucent, 2016)

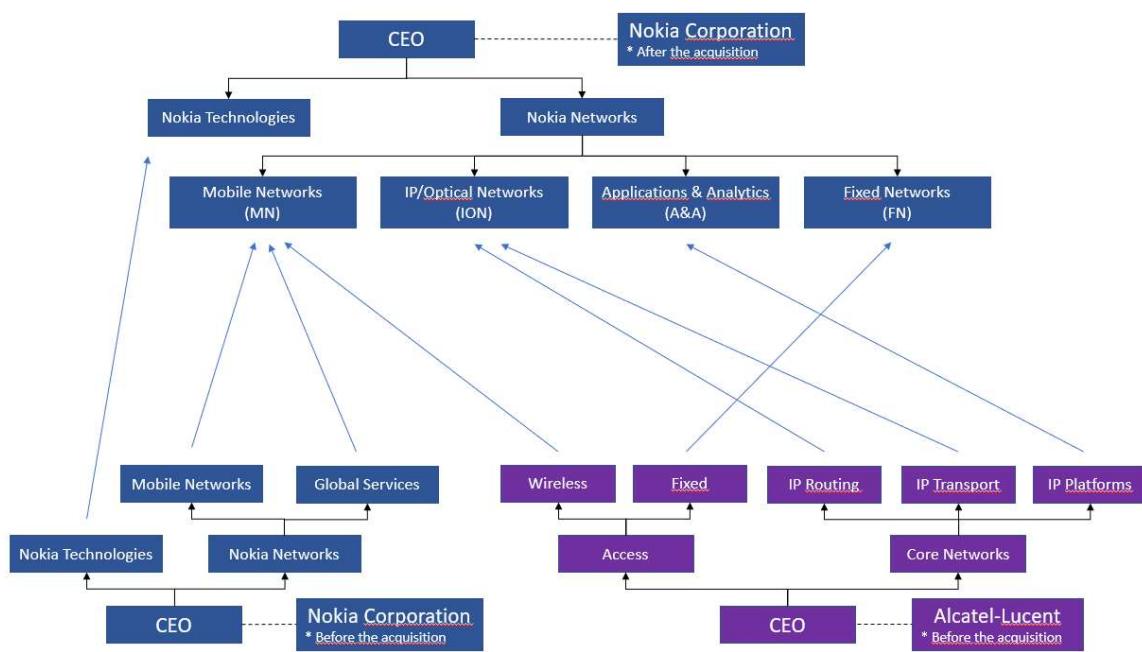
## EXHIBIT 5 – INTEGRATION MATRIX BY HASPESLAGH AND JEMISON



Integration matrix by Haspeslagh and Jemison (1991)

Source: (Bodner & Capron, 2018)

**EXHIBIT 6 – NOKIA’S ORGANIZATIONAL SETUP AFTER THE ACQUISITION**



Source: Created by the author using data from (Alcatel-Lucent, 2016) (Nokia Corporation, 2016)

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