

# World telecommunications equipment industry from the National champions to outsourcing: the case of ALCATEL\*

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**Abstract:** In the last two decades of the twentieth century, world telecommunications underwent major changes. The national fractions of that world market present remarkable peculiarities, with differing features according to the countries. This article concerns new episodes of the reorganization of the oligopolistic structure of the European telecommunications equipment industry during the 1990s and the first years of the new millennium from the perspective of ALCATEL. The French multinational presents itself as a magnificent example of the transformations that have taken place on a global scale. Methodologically, the case serves as an artifact to verify that a thorough understanding of the adjustment in the world economy requires elucidating how multinational companies were restructured. The article relies on the sources of the companies concerned, on reports from large international organizations, on parliamentary documents from various countries and on a meticulous newspaper archive.

**Keywords:** Telecommunications equipment industry, national champions, outsourcing, restructuring, ALCATEL

## I. Introduction

The two decades that preceded the crisis of 2008 were exceptional periods in the history of globalization <sup>1</sup>[1]. Technological change and liberalization have caused profound changes in telecommunications worldwide, including increasingly fierce competition. The European telecommunications equipment industry – a high-tech sector – has gone from adopting the national champion strategy based on the independent development and sale of high-tech innovations to an outsourcing strategy [2]<sup>2</sup> based on an industry without factories, or fab-less<sup>3</sup>.

The controversies begin with the definition of the terms. The first debates about content focused on assessing the impact of outsourcing. For example, one report found that 84% of the industry's salaried employees were relocatable, corresponding to 81% of the added value of the sector [3]<sup>4</sup>. Some dismissed such figures as exorbitant and tried to

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<sup>1</sup>Eurofound (2016).

<sup>2</sup>Major innovations were the digitization causing an increasingly uniform standardization of electronic production and the advances in telecommunications making it possible to interconnect real-time facilities dispersed in increasingly large geographical scales: Carroué (2004-2005), 131-136. The creation of a national industry strongly protected and supported by governments characterized the pattern of national champion, one of the eight models of dissemination of information and communication technologies (ICTs) of the twentieth century: Cortada (2009) and (2016). For a general framework, see: Commission of the European Communities (1992), (1990) and (1983); on the action of governments, see: Colli, Mariotti and Piscitello, "Governments as strategists," 487-508; for the French case: Heidenreich (2012), 278-279.

<sup>3</sup>Outsourcing allows companies to focus on their core business activities and to increase its competitiveness: *Computer World*, 19/4/1996.

<sup>4</sup>From the definitions prevailing in the debate (European Parliament, European Economic and Social Committee EESC, 2005), we retain the following: transfer of production and other manufacturing activities to places outside the country of origin: European Techno-Economic Policy Support (2007): 4.

reduce the intensity of the debate by limiting the scope of the phenomenon, while others relativized it. The undressed figures reveal a conclusive picture of the extent of offshoring. Between 2003 and 2006, the number of cases involving delocalization represented 10% of the total, and the announced cut in employment was 8%<sup>5</sup>.

However, the hostility with which people viewed outsourcing, offshoring, and subcontracting attracted media interest and increased the academic and political debate, which has continued until today<sup>6</sup>.

Social scientists have devoted careful attention to these phenomena in publications and international meetings<sup>7</sup>. After the bursting of the dot.com bubble in 2001, the academic debate focused heavily on the role of the multinationals, with divergent views<sup>8</sup>. For certain scholars, the new global strategy of the multinationals clearly differentiated them from traditional corporations. They "played a prominent role, as their global reach allows them to co-ordinate production and distribution across many countries and shift activities according to changing demand and cost conditions"<sup>9</sup>. In specific aspects, as in a paper on salary inequality, other scholars played down how the multinationals contributed to outsourcing<sup>10</sup>.

In contrast to the copious bibliography that social scientists have produced, business historians have approached the topic timidly, only recently incorporating it into their research agenda<sup>11</sup>.

This article examines from a business perspective the main episodes of the reorganization of the oligopolistic structure of the European telecommunications equipment industry (i.e., the telecommunications sector) in the 1990s and the first years of the new millennium. The multinational ALCATEL is presented in its vast geographical reach and wide range of

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<sup>5</sup>Eurofound (2008), 27 and 15. The year 2005 holds the highest number of cases (1,049) and 2004 the highest percentage (12%). According to the impact of offshoring, measured in job losses in 2005, it is possible to divide the European countries into three large groups: the first (Portugal 54.7; Austria 29.6; Denmark 28.8; Slovakia 25.2; Slovenia 24.0 and Ireland 23.6) showed a percentage higher than 20% for this reason; a second group of countries had a percentage between 10 and 20% (Finland 15.9, Italy 15.7 and Belgium 10.9), while a third group, the majority, had a percentage lower than 10% (Germany 7.2; Hungary 5.7; Sweden 5.4; France 4.6; UK 3.4; Spain 2.3; Poland 2.2; Czech Republic 0.9 and Netherlands 0.7; Cyprus, Estonia y Malta 0); Storrie (2006), : 41-43. In the USA companies with annual sales exceeding \$ 80 million increased outsourcing by 26% in 1997 to \$ 85 billion. The IT was the most dynamic activity outsourced, accounting for 30% of total outsourcing expenses: OECD (2000): 15.

<sup>6</sup> At its most rabid present time, the political debate has expanded the traditional division into markets for labor costs to social and fiscal dumping that feeds the mobility of companies within Europe: European Parliament, The impact of delocalization on workers and regions, Strasbourg, 30 May 2018. A reference work: Atkinson (2004).

<sup>7</sup>General studies of evolutionary economics juxtapose off shoring to vertical disintegration, outsourcing and deconglomeration: Dosietal. (2013). Other contributions from this approach, relating to software and contrasting the strategies of collective dismissals or relocation: Niosian and Tschang, "The strategies of Chinese and Indian," : 269-294; Coucke et al., "Employee layoff," 161-182. Among the congresses, the following stand out: 'Delocalisation of Labour Intensive Industries', Kraków, Poland, April 2007 and 2nd Central European Regional Science, Nový Smokovec, Slovakia, October 2007.

<sup>8</sup>*New York Times* (NYT), 19/6/2005. The industrial policy debate of the 1980s was outdated: Johnson (1984).

<sup>9</sup> OECD (2007): 7; Wladimir, "Outsourcing," 5-34.

<sup>10</sup>Slaughter, "Production Transfer," 449-472.

<sup>11</sup>An interdisciplinary work of historians on the general framework of telecommunications: Griset and Fridenson, "De la diversification," 26-41. Some authors (Ekberg and Lange, "Business history," 69-81) recognize the side-lined character of the problem in a number of debates: Schniederjans et al. (2006, p. 14) point out that outsourcing is a "bend in the river", not an important fact of business history. Reputed authors refer to disintegration to save fixed and variable costs, de-verticalization and decentralization: Amatori and Colli (2013). The geographical component (India) from the business History is studied by Roy (2018). Recognizing the deficiencies, Wilson et al. (2016, p.294) advocate an agenda that includes studies of past practices with respect to outsourcing, among other aspects: The Annual Meeting of the Business History Conference -Cartagena de Indias, Colombia, 2019- is aiming at concentrating on the phenomena of globalization and de-globalization through "business history research agendas". Some scholars argue that the fields of entrepreneurship, international business and strategy have not embraced historically-oriented research to the same extent as other fields within business and management studies: Perchard et al. (2014). A very early stage of outsourcing has been investigated at the sector level by Pinney, "Projects, Management," 620-626, and at the company level industry by Petersson, "Managing," 88-123.

products and management styles as a prime example of the transformations that have occurred on the global scale. ALCATEL has been the subject of important studies that cover the period analysed here. However, aspects of its evolution require new research<sup>12</sup>. The case is used as an artefact to test the hypothesis that a correct understanding of the adjustment in the world economy requires elucidating how large companies were restructured<sup>13</sup>.

This article is based on internal company sources, parliamentary records from various countries, judicial documents and newspaper archive research. It consists of three main sections. The first section provides a general overview of the evolution of the sector. The subsequent two sections describe a case study and address globalization and its effects from the perspective of ALCATEL in two of its successor incarnations (ALCATEL and ALCATEL-Lucent).

## **II. The telecommunication equipment industry and ALCATEL: A classic restructuring**

After successive episodes of restructuring in the 1990s, the telecommunications equipment industry continued the process of concentration and consolidation of its oligopolistic structure driven by technological change<sup>14</sup>. In the mid-1990s, the ten largest companies in the US, Europe and Japan accounted for more than 60 per cent of the global market<sup>15</sup>. The exceptional dynamism of the Information and Communication Technologies (ICT) ceased to be paralleled by growth in value of similar magnitude. This low growth in value resulted in progressive consolidation among operators, the primary customers of the industrialists, and their subcontractors, who, in turn, were dragged into new restructuring, particularly through mergers and acquisitions<sup>16</sup>.

The national fractions of that world market present remarkable peculiarities. Thus, for example, France, which had undertaken a major restructuring of its telecommunications equipment industry during the 1970s, tried to eliminate foreign suppliers (e.g., Swedish Ericsson and the US International Telephone & Telegraph (IT&T) from the domestic market and establish a second domestic supplier (Thomson)<sup>17</sup>. More decisive was the emergence of a new actor with a worldwide footprint. As is known, in 1986, an international consortium led by the public *Compagnie Générale d'Électricité* (CGE) purchased a majority stake – 55.6 per cent, with IT&T owning 37 per cent and the remainder belonging to Belgium's *Société Générale* and the French bank *Crédit Lyonnais* – in the telephone equipment division owned by IT&T in Europe. CGE used its control in the new company to combine it with its own subsidiary CIT ALCATEL to form ALCATEL N.V., the world's second-largest telecommunications company.

The company consisted of five main subsidiaries: ALCATEL CIT in France, ALCATEL-Belgium, ALCATEL Standard Elektrik Lorenz (SEL) in Germany (considered the most valuable of the European subsidiaries), ALCATEL FACE (*Fabbrica Apparecchiature per Comunicazioni Elettriche*) in Italy and ALCATEL SESA in Spain.

ALCATEL N.V. immediately set out to rationalize and modernize the diverse group of companies that resulted from the acquisition of the IT&T assets. The first restructuring consisted of a regrouping of all Business Systems activities in the

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<sup>12</sup>Kevin and Miller (1990), Marseille (dir.) (1992) and Gibson (1995); to these is added testimonial works, such as that of former CEO Pierre Suard (2002). The absence of the emblematic ALCATEL in exercises on business restructuring in France, which do use Renault, *Électricité de France* and Moulinex, pioneer in relocation: Hancké (2002): 158. National subsidiaries lack bibliography, although there are notable monographs of some plants, among them Illkirch (Beaujolin-Bellet and Issaverdens, 2006) and Colfontaine (Issaverdens and Naedenoen, 2006).

<sup>13</sup>Hancké (2002, 158) arrives at this conclusion from the cases of companies already mentioned. Methodologically, the case study within the business perspective follows Petersson, "Managing," 88-123. (2018) and Daviet, "Émergence et structuration," 132-151.

<sup>14</sup>Cooke (2015).

<sup>15</sup>ATT-Lucent, Motorola, NEC, Nortel, Nokia, Fujitsu, Bosch, Siemens, ALCATEL and Ericsson, were included in the group, the last three with a strong presence in the North American market: Dörrenbächer (2000): 13; Carr et al. (1998): 3-2. In 1997, ALCATEL had 4% of the world's mobile telephony infrastructure and 2.5 of terminals, a figure that two years later had risen to 4.2%, always lagging behind the largest in the sector -Nokia, Motorola and Ericsson: Funk (2002): 8; in 2001, its share of the European terminal market -140 million- was 10%.

<sup>16</sup>Loos and Larcher (2007). Between 1988–2004 the equipment companies relied on M&A as a technology sourcing strategy: Gantumur and Stephan (2012): 277-314.

<sup>17</sup>Sutton (2001): 143.

US except Friden ALCATEL; a merger between Telic ALCATEL and ALCATEL Électronique in France; the acquisition of Dial, which gave ALCATEL 15% of the company's Italian market; and the divestment of Sesa (sic) and GSI (France)<sup>18</sup>. Part of the initial process consisted of divestments, job cuts and strategic alliances, which complemented the previously mentioned mergers and acquisitions. In the first way – selling to Nokia – a section of SEL was concerned (Table 2), which involved losses. The relevant matter is that the sale was a strategic disinvestment operation because in the following year SEL joined the European Cellular Radio 900 (ERC 900) Consortium, an industrial alliance with AEG and Nokia – now reinforced in its race for diversification – to jointly develop, manufacture and market the second-generation pan-European digital mobile telephone system GSM (Groupe Spécial Mobile)<sup>19</sup>.

The job cuts affected ALCATEL CIT's Querqueville factory (TABLE 1), which was considered one of the two key producers of digital power plants but which faced fierce competition. At other plants, specifically Euand Cherbourg, ALCATEL CIT was more inclined to increase competitiveness by simplifying corporate services than by imposing job cuts<sup>20</sup>. Thus, the strategy does not appear to have been homogeneous or strictly defined from the beginning.

From 1980 to 1990, the group's telecommunications business grew substantially through a multiple strategy of acquisitions, joint ventures, and mergers<sup>21</sup>. ALCATEL's position was reinforced by an increase in its ownership stake to 61.5 per cent through an internal consolidation of two major subsidiaries, Compagnie Financière ALCATEL and Alsthom.

In the 1990s, ALCATEL underwent important alterations. The acquisitions pace was slowed, and the company was renamed ALCATEL Alsthom Compagnie Générale' Electricité, commonly known as ALCATEL Alsthom. The firm bought out IT&T's stake and joined the general trend of production diversification through horizontal integration. These acts created a diversified group in the areas of energy, transmission (electrical and of information using fibre-optic cables), telecommunications, space and defence (TABLE 1). The firm stood out as a global group composed of eight regional divisions with full responsibility for its operating results. It also stood out as a global group, composed of eight regional divisions with total responsibility for its operating results and four large areas at an international level<sup>22</sup>.

**Table 1. Selective view of the Alcatel world system**

<b>Matrix or Subsidiary</b>	<b>Plants</b>	<b>Location</b>	<b>Specialty</b>
ALCATEL CIT*	Querqueville (Cherbourg)	France	E 10 and MT digital switching
ALCATEL CIT	Annecy	France	semiconductor engraving
ALCATEL CIT	Amilly	Centre-Val	electronics

<sup>18</sup>Sesa (France) developed the packet switching systems, the basis for the development of the Transpac data transmission network: European Commission (1997):107.

<sup>19</sup> Fletcher (2013): 65; Anonym (2012): 2. The cut at SEL, a prominent participant in the development of digital switching, involved 5.25% of a total of 21,600 jobs without layoffs: Computer Business Review, 25/1/1993. In 1995, Nokia ranked as second world manufacturer of mobile phones with sales in 120 countries and leader in Europe, as well as the world's leading provider of cellular GSM/ DCS networks: Nokia (1995): 2. On tenders and other aspects of the consortium: Commission Decision of 27 July, Konsortium ECR 900, *OJEC*, L 228, 22/8/1990: 31-34.

<sup>20</sup>Réponse du ministère de l'Industrie, *Journal Officiel du Sénat (JOdD)*, 14/4/1988, p. 513. In 1985-1986, shares of Electro Financière and plant in Vitry Tecafiltes shares were sold, and the Tamaris boiler factory and the Dalmas establishment were ceded: Archives Nationales de la France, 20000487/18, Dossier 1.

<sup>21</sup> ALCATEL grew from US\$9 billion annually to US\$27.6 billion; acquisitions: 15 energy, transportation, and communications companies during 1989; more than 35 companies from 1987 till 1991; joint ventures: North American Intermagnetics General Corp., Ferro Corp., and Exide Electronics; mergers: CGE's Alsthom power and transportation subsidiary with the United Kingdom's General Electric Company's Powers System Division formed GEC Alsthom N.V.: Dörrenbächer and Wortmann (1994): 202.

<sup>22</sup>Dörrenbächer (2000): 13. In 1995, ALCATEL was described as "mastodon at risk" (Le Temps, 12/10/1999), or mammoth from the past (Quatrepoint, 2015, sp), but also as "fleur du capitalisme français" (Les Échos, 30/7/2008) and "the Lucent of Europe" (Bloomberg News, 12/10/1998).

		de Loire,Franc e	
ALCATEL CIT	Colombes	Hauts-de- Seine, France	telephone equipment
TELIC	St. Nicolas d'Aliermont	Haute Normandi e France	telephone equipment
ALCATEL, Woerth	Woerth	Alsace, France	
ALCATEL Cable	Dinard	Bretagne, France	
ALCATEL	Tourlaville	Manche, France	equipment for microwave transmissions for mobile telephony
ALCATEL	Brest Laval Coutances Saintes Conflans-Sainte- Honorine (Yvelines) Illkirch Rennes Lannion	France	Brest: telephone equipment (private branch exchange and IP-based private communications exchange corporate systems)
ALCATEL Île-de France	Massy Vélizy Meudon Colombes MarcoussisVillarcea ux	France	
ALCATEL	Eu, Normandy	France	integration and testing of electronic solutions for telecom equipment
ALCATEL	Optronics	France	optical components
ALCATEL Lucent	Grenoble Châteaudun L'Isle-d'Abeau (2)	France	
ALCATEL Business System	Gundershoffen (Strasbourg)	France	
Alcatel Cables	Lyon and 29 other plants (Calais, Douvain, etc.)	France	cables
Alcatel Cables	Greenwich (UK)		
ALCATEL SEL AG	Berlin Nuremberg Mannheim	Germany	
ALCATEL SEL AG	Gunzenhausen	Germany	data transmission and voice switching systems
ALCATEL SEL AG	Stuttgart Altena Bochum Bonndorf Esslingen	Germany	

	Geroldsgün Hamburg Landshut Mannheim Pforzheim StraubingZiemtesha usen		
ALCATEL SEL AG subsidiaries Dehloff Electronic SEL Software SEL Business Systems Export SEL Finanz CTM Computertechnik Muller SEL Señalización SEL Telecommunications	Stuttgart Berlin Stuttgart Berlin Konstanz  Spain Malta	Germany	
ALCATEL Lucent	Hilversum	Netherlands	
ALCATEL Bell	Colfontaine	Belgium	telecommunications
ALCATEL Bell	Geel	Belgium	
ALCATEL Bell	Ghent	Belgium	printed circuits
ALCATEL Bell	Namur		research centre
ALCATEL Bell Space	Hoboken	Belgium	electronic space equipment
ALCATEL ETCA	Charleroi	Belgium	electronic space equipment; telecoms
ALCATEL Cable Suisse	Cortailod	Switzerland	optical fibre
ALCATEL Cable Suisse	Cossonay	Switzerland	cables, telecommunications, distribution of electrotechnical equipment
ALCATEL Cable Suisse	Breitenbach	Switzerland	cables, telecommunications, distribution of electrotechnical equipment
ALCATEL SESA		Spain	switching equipment, cables, transmissions
ALCATEL Data Networks: joint venture of Sprint Corp. (49%) and ALCATEL (51 %)	Ashburn	USA	Asynchronous Transfer Mode (ATM) products
Optronics	Gatineau	Canada	fibre-optic sensors, Bragg (FBG) factory
Optronics	Livingston	Scotland	optical fibre
Optronics	Kanata, Ontario	Canada	R&D
Optronics	Shannon Cork Blanchardstown Citywest (Dublin)	Ireland Ireland Ireland Ireland	components for fibre-optic transmission
Optronics	Bandon	Ireland	software development HLR
ALCATEL	Plano Longview	Texas, USA	assembly plant
ALCATEL Network Systems	Raleigh	North Carolina,	equipment for broadband telecommunications and data

		USA	networks
ALCATEL	Chantilly	Virginia, USA	technical and marketing centre
ALCATEL	Nogales	Arizona USA	assembly plant
ALCATEL	Claremont	North Carolina, USA	optical fibre
ALCATEL	Mexico		
ALCATEL	Richardson	Texas, USA	telecommunications apparatus
ALCATEL Network Systems	Bethesda	Maryland	high-capacity digital terminal equipment
ALCATEL Lucent (Western Electric in 1956)	Merrimack Valley, North Andover	Massachusetts, USA	coils for telephones; then, fibre-optic networking equipment for telephones and other telecom sectors
ALCATEL	Clinton	North Carolina, USA	
ALCATEL	Aguadilla	Puerto Rico	telecommunications equipment
ALCATEL Cables	Port Botany	Australia	cables
SAFT (ALCATEL)	Bordeaux, Poitiers Roulet Saint-Estèphe/Charente SAFT Sweden Czech Republic UK USA Australia Singapore	France France Sweden Czech Republic UK USA USA Australia Singapore	industrial and specialized batteries

\* See Table 2 for greater precision.

Source: Author's own research.

ALCATEL ended in 1989 in excellent financial condition, which was reinforced by research support from the French government. Its holdings were sufficient to enable paying IT&T for the previously noted repurchase of shares, and abundant funds were applied to the military redeployment. However, ALCATEL CIT determined to abandon the manufacture of equipment for engraving semiconductors in Annecy and to cut jobs<sup>23</sup>. Starting in 1992, it was no longer possible to maintain the subsidiary's three industrial plants, among which its production had been distributed. The battle to increase competitiveness required improving productivity by approximately 10% annually and significant investments. The closing of Amilly represented a response to this challenge through a two-pronged strategy of industrial action (i.e., the partial transfer of electronics manufacturing activity to a subcontractor following maintenance of the activity by ALCATEL CIT for three years) and a social plan (Table 2)<sup>24</sup>.

### III. Globalization and its effects: The Tchuruk era at ALCATEL

Year 1995 marks an important turn in ALCATEL's transformations during the decade. In this moment, the

<sup>23</sup>Question34, 202, communist Congress woman (Seine-Saint-Denis), JOAN, 21/10/1991, p.4.333.

<sup>24</sup>Journal Officiel de l'Assemblée Nationale (JOAN), 27/7/1992, p. 3.402; for ALCATEL CIT: Iwens (1984).

company ranked twenty-third among multinationals by assets, immediately after FIAT, Siemens and Sony. The index of Multinationality, that is, the average of the relationship between assets, sales and employment abroad with respect to the total, placed it in thirtieth position, substantially behind the leader Nestle and immediately ahead of Coca-Cola<sup>25</sup>.

ALCATEL had continued to acquire companies, e.g., Telettra, STC and Kable of AEG. However, it had suffered significant losses. Under the direction of Serge Tchuruk, *polytechnicien* and former leader in the energy sector, the company reoriented with the aim of abandoning the conglomerate policy and refocusing on telecommunications, which at that time represented 40% of turnover<sup>26</sup>.

It is worth reiterating that the restructuring undertaken since 1995 resulted from the opposite behaviour of, on the one hand, the industrial added value, trending downwards, and, on the other, the intangible value, such as R&D, which tended to steadily increase<sup>27</sup>.

The restructuring of ALCATEL itself began as the result of a lethal combination of exogenous shocks caused by the emergence of less labour-intensive technologies and strategic options. The specificity of the particular conjunctures of the different economies in which they were immersed and other factors imposed different chronologies and tempos<sup>28</sup>.

Based on previously unpublished research that complements TABLE 1, TABLE 2 systematizes copious scattered information on the various types of restructuring performed by ALCATEL over a period of twenty years<sup>29</sup>. The research is valuable given the shortage of aggregate data provided by the large international organizations –Eurostar, for example– for other than the end of the period under study. The analysis reveals a division into two major phases and a transitional period, which are considered in the following.

In a first phase immediately prior to the bursting of the technological bubble, the company's measures resulted in closures and staffing cuts in addition to offshoring and outsourcing (Table 2). If we quantify, between 1986-2000, there were nine staffing cuts, three sales or cessations, ten closures, nine relocations (3 within the same country and two mixed), four cases of dismissals, one business conversion and, finally, one restructuring and subsidiarization. In a large majority of cases, the measures were not taken in isolation but associated with others. This occurred in four of the nine cases of staffing cuts, two of the three sales or sessions, six of the ten closings, six of the nine relocations and half of the dismissals. It is worth emphasizing the relocation to plants outside the country, with three preferential zones: Eastern Europe, Asia and North Africa.

Two events stand out. The Belgian factory of Colfontaine, a depressed region, offers an example of intra-company discrepancies in crisis solution assessments between the Paris headquarters, which supported closure, and the local plant management, advocating for the continuity. The second event concerns the instability of property and the relative validity of business decisions<sup>30</sup>.

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<sup>25</sup>BehindTotal y Rhône-Poulenc, General Electric, for instance: United Nations Conference on Trade and Development (1997): 29. ALCATEL is considered a typical multinational, as opposed to the network structure of France Télécom: Rugman and D'Cruz (2003): 125.

<sup>26</sup>NYT, 6/10/1995 y 29/3/1996. The Commission of the European Communities gave the Placet to the absorption of Kable, subsidiary of AEG: Case No IV / M.165 - ALCATEL/AEG KABEL, Document 391M0165, 18.12.1991. ALCATEL, surrendered to synergies, was looking for new assets to acquire, especially the French giant of electronics, defense and media Thomson S.A.: NYT, 29/3/1996; Beaujolin-Bellet and Issaverdens (2006).

<sup>27</sup>*Libération*, 8/10/2013; *La Repubblica*, 28/6 y 1/11/2001. At the end of the 1990s, Alcatel's restructuring costs amounted to around 5% of sales: Alcatel, Annual report, 1.

<sup>28</sup>For example, in 1991 ALCATEL SEL in Germany registered "exceptional" results in exports and profits due to the strong demand in infrastructures of the ex-RDA. The reconstruction of the telephone network opened good prospects for the future: *Les Échos*, 5/14/1992.

<sup>29</sup>They far exceed those collected by the European Restructuring Monitor, dedicated specifically to this task.

<sup>30</sup>Issaverdens and Naedenoen (2006); Gazier and Bruggeman (eds.) (2008): 188-189. One of the affected - the joint venture of ALCATEL and Sprint ALCATEL Data Networks - developed ATM products, an advanced solution for high-speed data networks operated by universities and large companies to which ALCATEL made a significant contribution. Sprint, third in size among US long distance carriers, provided a small subsidiary for the manufacture and installation of data packet switching networks and ALCATEL a similar and smaller: OTA Advisory Group (1993): 78; NYT, 4/2/1993; *Washington Business Journal*, 14/7/1997

The gleaning and systematization of scattered information presented in Table 2 provides indications regarding why these events occurred. As shown in the table, since 1995, ALCATEL CIT had been mired in deteriorating results with no prospect of overcoming its budget deficit in the immediate future<sup>31</sup>. The plant at Saint Nicolas d'Aliermont was facing competition from telephone terminals manufactured in Asia and easily accessible to the general public<sup>32</sup>. Another alleged explanation, now drastic cuts, refers to the persistent collapse of telecommunications equipment sales and reflects the vicissitudes of the deceleration of the economy as a whole<sup>33</sup>.

Several ranges of telecommunications equipment suffered from special circumstances, including low capital expenditures in 1991 and the initial half of 1992 and relative saturation in the corporate telecommunications market, which accentuated competition. The lower prices and the consequent erosion of margins in the sector augured bad times<sup>34</sup>.

One sub-sector, the optical cable market, distinguished itself until 2000 by strong growth and the receipt of important investments. As that moment, the ICT crisis revealed considerable excess of capacity in this type of equipment. ALCATEL Cable France recorded a 60 per cent reduction in its billing and had to launch a plan to safeguard employment. Despite being able to contain the problem starting in 2004, the company faced strong price erosion (- 30 per cent between 2004 and 2005) due to competition and pressure exerted by telephony operators. In fact, the peculiar structure of the optoelectronic market, largely a captive market, presented a degree of protection. In 2001, the Illkirch plant was dedicated exclusively in 2001 to optoelectronics, which was replacing second-generation mobile technology (GSM), whose international deployment ALCATEL had enthusiastically backed with other equipment manufacturers (e.g., Siemens and Nokia). However, the following year, ALCATEL Optronics sales plummeted. On-going training was frozen, and part of the "converted" workforce returned to the production of terminals. The uncertainty forced the company to find a new industrial project for Illkirch<sup>35</sup>.

The mechanism used to facilitate the transfer of factories was the conversion into subsidiaries. ALCATEL CIT applied this mechanism in Saintes and Coutances, which totalled approximately 300 employees<sup>36</sup>. Generally, the transfer of plants was a temporary solution, as in Tourlaville (Manche) (2001)<sup>37</sup>.

Another sort of information is also presented in Table 2: the so-called social plans that accompanied the restructuring processes, the intervention of trade unions and local authorities, and the fate of the workers affected by the various measures<sup>38</sup>. After the closure of ALCATEL Cable in Dinard, between 35-43 per cent of those dismissed had not found a

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<sup>31</sup>Réponse du Ministère de l'Industrie, *JOdD*, 14/4/1988, 513 and 24/2/1997, 971.

<sup>32</sup>*Les Échos*, 12/6/1991.

<sup>33</sup>Detail of the distribution of 2,800 dismissals: *BBC News*, 10/7/2001.

<sup>34</sup>The demand of the operator France Télécom, basically of large power plants, did not impact on the company. They had to affect 745 people between August of 1992 and April of 1993, 65 of which in Colombes: Réponse du ministre des PTT, Assemblée Nationale, *JOAN*, 24/08/1992, p. 3.927.

<sup>35</sup>Réponse Ministère attributaire, *JOAN* 3/5/2005, p. 4,680; CEPAL (2001): 192; *L'Usine Nouvelle*, 2/5/2002. ALCATEL and Drakka merged their respective cable and fiber optic telecommunications systems businesses worldwide, as well as intellectual property rights in a newly created company -NEWCO. ALCATEL Optronics only sold 18% to outside customers (Asia 5 %, Europe 3 and USA 10).

<sup>36</sup>*L'Usine Nouvelle*, 20/4/ 2000.

<sup>37</sup>Once the exclusive contracts between ALCATEL-Lucent and Sanmina were finalized, the situation was brought back to the beginning. After closing the facilities of Grenoble, Châteaudun and two of the island of Abeau, at the end of 2006 the exclusive contract with Sanmina for Tourlaville, the production was partially transferred to Hungary and Thailand: *L'Usine Nouvelle*, 30-10- 2001. Given the possibility of total or partial closure of the establishment, a political representative of the region requested government mediation to help the company to find new customers and retain local jobs: Question orale 0046S, MP de Manche - SOC, *JOdD*, 27/09/2007, 1.689. In 1999 other ventures were acquired by Sanmina: US Securities and Exchange Commission, 0-21.272, 1/1/2000, 8. The successive relocations of the same company were qualified as industrial nomadism: Sénat, Commission des finances, 22/3/2005.

<sup>38</sup>In Claremont N.C., those laid off - approximately 21% of total employment - would benefit from severance payments, job placement assistance and medical benefits: *Dallas Business Journal*, 3/10/2001; *BBC News*, 10/7/2001.

job two years later<sup>39</sup>. At Conflans, the company enacted a plan for employment protection and external relocation. ALCATEL Cable was forced to reincorporate 170 employees. ALCATEL CIT tried to reach a consensus with the unions regarding the distribution of working time based on three guidelines: reduction of working hours, voluntary retirement beginning at age fifty-two and early retirement<sup>40</sup>.

**Table 2. Selective list of ALCATEL operations**

Company	Year of Operation	Section	Measures	Target company
ALCATEL-CIT (Conflans-Saint-Honorine)	1986-1988	telephone terminals	plans for job cuts, closing in 1988; relocation to La Ville-du-Bois (Essonne)	ALCATEL
ALCATEL CIT	1977-1984		job cuts	ALCATEL
Standard Elektrik Lorenz (SEL)	1987	entertainment electronics and components	sale	Nokia
ALCATEL CIT (Saintes)	1984-2000		restructuring and subsidiarization	ALCATEL
ALCATEL Christian Roving (Denmark)	1988	high-end circuits for airlines	delocalization; administrative unbinding and cession	Bolt, Beraenek&Newmann (USA)
ALCATEL CIT (Annecy)	1989	equipment for semiconductor engraving	closing of the section and job cuts (135)	ALCATEL
ALCATEL Business Systems	1992-1993	systems	job cuts	ALCATEL
ALCATEL CIT Amilly	1992		closing announcement (300 employees); delocalization; partial cession of the activity to a subcontractor	ALCATEL
ALCATEL	1992	research laboratories	delocalization	China
ALCATEL TELIC, St. Nicolas d'Aliermont		telephony equipment	closing	internal restructuring
ALCATEL, Worth		specialized in the production of Minitel	closing	internal restructuring
ALCATEL Business System, Gundershoffen	1995		cession (222 employees)	Info Réalité, future Info-Industrie
ALCATEL	1995		first restructuring;	

<sup>39</sup>Question554, Communist representative (Somme), *JOAN*, 30/6/1997, 2.243; Question 8,722, representante comunista (Côtes d'Armor), *JOAN*, 12/1/1998, p. 149); *Le Parisien*, 10/11/2004; Réponse du Ministère attributaire, *Journal Officiel*, 3/8/2004, 6. Saft, leader of its specialty, dispersed its production in 14 plants distributed in eight countries, which employed 4,000 people: *EE Times*, 20/10/2003.

<sup>40</sup>Réponse du ministre de l'Industrie et PTT, *JOAN*, 24/2/1997, 971.

Colfontaine			60 redundancies and corporate reorganization	
ALCATEL SEL AG Stuttgart (Berlin, Nuremberg and Mannheim)			job cuts	ALCATEL
ALCATEL Cables Suisse		cables, telecommunications and distribution of electrotechnical equipment	job cuts	ALCATEL
ALCATEL Cable Dinard	1997		closing, dismissal of the workforce and delocalization due to transfer of production	ALCATEL subsidiary in Spain
ALCATEL Data Networks, Ashburn			job cuts	ALCATEL
ALCATEL Colfontaine	1997		closing and delocalization announcement in France, China and Turkey; closing and successive cessions	Micron Custom Manufacturing Services (MCMS, USA); Punch; Valoric
ALCATEL CIT Colombes (Hauts-de-Seine)	1997		dismissal announcement (227) and delocalization to Vélizy	ALCATEL
ALCATEL CIT Lannion	1997		announcement of dismissals (398)	
ALCATEL CIT Ormes (Loiret)	1997		dismissals (491)	
ALCATEL Network Systems, Bethesda	1997		announcement of the transfer of the majority of the 150 employees to Raleigh	ALCATEL
ALCATEL, Texas, California, Puerto Rico and North Carolina	1999		job cuts; partial transfer of Raleigh personnel to Arizona and Mexico	ALCATEL
Alcatel Cables	2000	cables	company conversion	Nexans
ALCATEL	2000		plans to delocalize to Romania, Hungary and China	Solectron and Flextronics
Tourlaville	2001	equipment for mobile telephony	cession	Sanmina
Saintes	2001		cession	GroupeMétalDécoupe
Illkirch	2001	GSM terminals	Reconversion of the	ALCATEL

			optoelectronic section; closure plan of section for planar and MEMs design software	
ALCATEL Nozay		active components	closing and delocalization	ALCATEL
Alcatel, Gand and Hoboken (Belgium)	2001		negotiations with subcontractors	
ALCATEL Geel (ALCATEL-Lucent, Belgium)	2001		delocalization of the production of central switches in Gunzenhausen (Germany); focus on broadband access products	ALCATEL-Lucent
ALCATEL, Laval	2002		cession	Sanmina
ALCATEL, Coutances	2002		cession	Sanmina
Maddaloni and Frosinone (MF)	2002		sale and cession; company creation (MF components)	cession to CST
ALCATEL Optronics (Gatineau, Canada)	2002	Bragg fibre-optic sensors (FBG)	closing and transfer to Livingston, Scotland; transfer of the R&D section and commercial delegation to Kanata, Ontario	ALCATEL
ALCATEL Optronics, Lannion	2002		part-time employment and reduction of the workforce: early retirement	ALCATEL
ALCATEL Optronics (Ireland)	2002		job cuts; sale	Avanex (USA); creation of Avanex France
ALCATEL Optronics (Shannon and Cork, Ireland)			job cuts of more of a half of the 160 employees closing of the logistics centre in Shannon	
ALCATEL Bandon	2002	HLR software development unit	closing	
ALCATEL Cherbourg (France)	2002	assembly and test systems for applications in the 1.5 and 38 GHz frequency bands	sale	Sanmina-SCI
ALCATEL Gunzenhausen (Germany)	2002		sale	Sanmina-SCI
Alcatel Space Denmark	2003	computer, electronic and	bankruptcy/closure	

		optical products		
ALCATEL Brest <sup>41</sup>	2004		cession	Sanmina
ALCATEL Saft	2004		cession	Doughty Hanson & Co.
Geel (ALCATEL-Lucent, Belgium)	2004	ADSL card production	job cuts and subcontracting of approximately 30 jobs in unproductive sections	-
Rieti and Battipaglia	2004		cession	
ALCATEL: Île-de France Massy Vélizy Meudon Colombes MarcoussisVillarceaux	2006		plans for closure and delocalization (2,000 employees)	ALCATEL: Vélizy and Villarceaux (near Monthléry)
Geel (ALCATEL-Lucent, Belgium)	2007		cession plans	-

Source: Elaboration based on the text and Annex 1.

At the turn of the decade, the bursting of the dot.com bubble dealt a deadly blow to economic growth, with negative effects on employment, while forcing ICT industries to restructure<sup>42</sup>. At the individual level, the affected companies displayed different profiles, as an observation of various cases reveals. Certain companies maintained employment levels through shifting activities between countries and substantial restructuring within countries. Other multinationals suffered major job losses, which reflected earlier company failures to adjust to changing market conditions. Most of the multinationals transferred at least part of their production out of the EU15 into the new member states to contain or reduce production costs. Another important group of multinationals located production facilities in Asia. Low labour costs were the primary factor underlying location decisions although other factors also played a significant role, including the availability of suitably skilled labour<sup>43</sup>.

This general scenario enables a better understanding of the second phase of ALCATEL's restructuring. With 56,000 employees distributed in 130 countries, the company divided its activity into three areas: fixed communications, communications and private mobile communications for industry and the public sector<sup>44</sup>.

In the period 2001-2008, after the dot.com bubble, the analysis in Table 2 shows a predominance of cessions or sales (eleven cases), the vast majority of which were taken as an exclusive measure and had as the main partner the North American multinational Sanmina. Quantitatively, closures remain important – five, three of which were associated with offshoring –, followed by cut-outs – four cases, all associated with other measures. Delocalization occurred in five

<sup>41</sup>Brest, one of research and training centers, together with those of Rennes and Lannion, formed the electronic-telecommunications *filière* of the Brittany region: Boyer (2009), s. p. When in 2001 Flextronics took over the ALCATEL plant in Laval, employees of Flextronics in Monceau-les-Luneville were dismissed: Lutte Ouvrière, 175,515, March 2002.

<sup>42</sup>OECD (2007): 68. In 2001-2008, Ericsson cut jobs significantly (30% worldwide and 52% in Sweden), cost reduction and rationalisation being the guiding principles of the company's decisions. Production was largely out sourced abroad, although a relatively large part remained in Sweden at the National market service: Eurofound (2009): 37-38. Siemens announced the abolition of 6,500 jobs for 2003; Lucent and Nortel would soon see their templates reduced to 43,000 and 50,000 respectively. Between the first half of 2000 and that of 2001 the collapse of the telecommunications industry caused approximately a quarter of the decline in economic growth: Brenner (2003): 295.

<sup>43</sup>Eurofound (2009): 9-10.

<sup>44</sup>ALCATEL planned to restructure focusing on its core business areas of networks, optics and space, equivalent to 80% of the business.

cases, one outside the country (EU). Finally, two cases refer specifically to subcontracting, equally partial and total, a strategy already tested in the previous phase at ALCATEL Business System, whereby more than two hundred employees were transferred from the radio-message terminal factory in Gundershoffen to Info Réalité, the future Info-Industrie<sup>45</sup>. We would be deceived if we thought that a smaller number of cases in a year indicated lower intensity of the various restructuring measures. Thus, ALCATEL cut more than 7,000 jobs in the US only in 2001, as previously observed<sup>46</sup>.

If we refer to particular market segments, the optical cable industry was distinguished until 2000 by strong growth and the receipt of significant investment. Then, the crisis in telephony and ICT revealed a considerable excess capacity in this type of equipment.

ALCATEL subjected Optronics, a subsidiary specializing in optical components, to an industrial restructuring plan (i.e., an industrial redeployment plan), a concept originated by Giscard D'Estaing. The plan involved closing several plants, relocating jobs and dismissing a quarter of the labour in all the factories, leaving a remaining total of 1,350 employees (Table 2). The Ireland plants suffered the effects of the market's collapse and from the low prospects for a demand resurgence (Table 2)<sup>47</sup>.

During the transition between the two phases, ALCATEL was oriented towards disinvestment in its productive aspect. The essay of the saga occurred in the US, where between 2000 and 2001, the North Carolina and Texas factories were sold to electronics manufacturer services (EMS) Sanmina-SCI. Importantly, the transactions included multi-year supply contracts and the transfer of employees<sup>48</sup>. Europe subsequently adopted this practice, with the same protagonists. In 2002, two plants were sold to Sanmina-SCI, strengthened by recent agreements with IBM and HP to outsource the manufacture of personal computers<sup>49</sup>.

In short, the restructuring of the group under Tchuruk emulated the principles of the fab-less model, which is based on the outsourcing of productive activity and highly cultivated in the US electronics industry, and, particularly the practices of Cisco, an authentic pioneer and ALCATEL rival<sup>50</sup>. On the global scale, the phenomenon was not new but dated to at least the 1960s and had developed in three successive waves<sup>51</sup>.

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<sup>45</sup>Suard (2002); Suard, "Strategy for telecommunications," 210; *Les Échos*, 15/7/1997.

<sup>46</sup>ALCATEL Data Networks in Ashburn, headquarters of Plano in Texas, and in the plants of California, Puerto Rico and Raleigh in North Carolina.

<sup>47</sup>Industrial Redeployment Plan, Paris, 5/6/2002; *Electronics Weekly*, 6/6/2002; *EE Times*, 6/6/2002. The plans were generally negotiated with the unions. Two Alsatian electronics companies, Asteel Développement and Oristano, rented employees from the Illkirch plant, which at the end of 2004, had 1,100 people working in R & D and services: ALCATEL (2008): 25.

<sup>48</sup> Sanmina-SCI (2002): 80 y 83. In 2008, Sanmina-SCI had 54,397 employees and factories in 18 countries on five continents. In addition to ALCATEL, its partners included HP, EchoStar, IBM, Philips and Nokia: Plunkett (2008), s. p. In 2001, the outsourcing turnover (EMS) amounted to about \$ 178,000 million with an average annual growth of 25% since 1998; in 2003 23 % of the amount of annual global of EMS was from the six largest groups: Carroué (2004-2005), pp. 131-136; *ComputerWorld*, 19/4/1996. In this category were mainly North American -Plexus, Jabil Circuit, Solectron and Sanmina SCI- and the Asian -Flextronics (Singapore), China Electronics, Daeduck of Korea and Delta Electronics from Thailand-; in Canada, figured Celestica and in Europa the Finnish Aspocomp and Elcoteq, together with the Austrian AT&S: Galgoczi, Keune and Watt (2008): 152; ALCATEL (2008): 9; Vagadia (2011): 10.

<sup>49</sup>Placet from the European Commission: Case No. COMP/M.2734-SANMINA-SCI CORPORATION/ALCATEL, *Official Journal of the European Communities (OJEC)*, C 54, 1/3/2002, p. 9. In 1990 the 1,450 employees of CIT-ALCATEL were reduced to 665 and to 300 when it closed doors six years later: *Electronics Production*, 7/4/2008: Ripoll, "Cherbourg, ville-arsenal," 67-84.

<sup>50</sup>Burnier "La empresa sin fábricas," 5-7; Leckey (2002): 225; Cisco Systems (2011). Among the multitude of technology companies that adopted the strategy of outsourcing activities were included NEC, IBM, Hewlett-Packard (HP), Cisco, Ericsson, Siemens, Sony and Microsoft. Unlike Samsung Ericsson practiced this outsourcing strategy with Flextronics: Lüthje et al. (2013), 133; Saint-Étienne (2013): 87.

<sup>51</sup>Sarma and Sun, "The genesis of fables," 587-617. Between 1965 and 1980, coinciding with the beginning of an upward phase of the share of world trade in GDP, a first wave of delocalization to South eastern Asia was caused by the

It remains to explain however, why ALCATEL closed many factories in Europe but for various reasons only outsourced half of the production. On occasion, difficult-to-avoid regulations -disguised as protective social measures- made it advisable to safeguard its own production. The strategy of maintaining activities with high added value also determined this strategy, although not systematically. An important reason not to outsource was the need to respond adequately to the demand for certain products in national markets<sup>52</sup>. All the mobile manufacturing plants were sold to the Indian group Singapore Flextronics International, and the components were sold to the company's traditional competitors Thompson Multimedia, Sanmina and Thales<sup>53</sup>.

ALCATEL understood restructuring as one of the three main factors of its competitive strength, together with its leadership in the European market and the density of its distribution network. The company's multinational character imposed strategies that were incomprehensible from a nation-state perspective. ALCATEL gradually shifted its foreign direct investment (FDI) from acquisitions to joint ventures and from Western Europe to Eastern Europe and Asia, a geographical strategy that was applied to the opening of subsidiaries. To strengthen its position with respect to access to new markets, it forged strategic alliances with local partners, either by creating joint ventures or acquiring them. The strategy had as its goal the establishment of penetration routes primarily through the manufacture of power plants. For PBX equipment, a product range that contributed less than public switching to ALCATEL's international development, the geographical strategy was as follows: acquisition of National Telecom (a manufacturer of small exchanges) in the United Kingdom, a cooperation arrangement with Siemens for heterogeneous networks, the opening of subsidiaries in Eastern Europe and North Africa –Czechoslovakia and Tunisia–, a joint venture with a Yugoslav company (that served nearly half of its national market) and an agreement with a manufacturer and a subsidiary of the national operator in Hungary<sup>54</sup>.

In 1992, alone, ALCATEL opened subsidiaries in Bulgaria, Kazakhstan, Poland, Russia, Slovakia and the Czech Republic. The multinational concentrated its PBXR & Din core in its main laboratories, located in France and Germany. At the same time, it specialized a secondary network of laboratories scattered in various countries while maintaining nuclei in nearly all countries for product personalization<sup>55</sup>. A later example of the company's entry into Latin America as

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defensive market strategy. In the eighties, a second wave of investment areas were extended to new emerging countries with low salaries and to the surrounding areas of the great economic powers, at the same time their 'workshop' and potentially importers. Finally, the gradual technological improvement of some of these countries and the emergence of economic giants offered in addition to a third wave of transfers, new opportunities to relocate or relocate services: Grignon (2004). By way of example, the emergence of India in outsourcing and the change of the role of the country: Niosi and Tschang (2009): 269-294.

<sup>52</sup>In the year 2000, ALCATEL planned to relocate in Romania, Hungary and China with Solectron and Flextronics: *L'Usine Nouvelle*, 20/4/2000. In Italy, the Rieti or Cittaducale plant, incorporated into ALCATEL at the time of Telettra's absorption in 1990, specialized in optical fiber and radio transmission, the Telettra stronghold: Bresciani and Ferraris (2012): 207-208. Battipaglia had received grants from the European Union: Parliamentary questions, 1 September 2009; Interrogazione 3-01233 sullo stabilimento di Rieti dell'ALCATEL, Senato della Repubblica, 19/2/2004. *01net.com*, 29 June 2001; Tchuruk announced that it would only keep 12 factories, although he later reduced the number of closures to 50 (27 in Europe and the rest in the USA) with 13,500 employees: *01net.com*, June 29, 2001; indeed, some were maintained, especially in France, headquarters of the mother house, and Italy, considered strategic: Jacques (2006). ALCATEL partially moved its research laboratories to China, a location, together with India, where the cost of a researcher was ten times lower than in France: Sénat, 06/05/2008. The government insisted on the net dominance of France's participation in the R & D of ALCATEL (40% of its work force in research and development compared to 10% of turnover in the country): "Réponse du ministredélégué à l'industrie", *JOAN*, 19/10/2004, p. 8.005.

<sup>53</sup> Observatorio industrial de electrónica, tecnologías de la información y telecomunicaciones (2008): 25; the mobile phone manufacturing plants in Alsace and Mayenne sold totaled 1,660 employees: *Znet*, 3/10/2001.

<sup>54</sup>Network management in Norway, PBX applications in Austria, terminals in France and wireless terminals in Spain. ALCATEL also maintained very small teams in almost all countries to adapt the products: European Commission (1997): 52-53 y 119. In Europe, ALCATEL forged alliances, for example with VEB Kombinat Nachrichtenelektronik in Germany, with Videoton in Hungary and with several local partners in Yugoslavia: *Computer Business Review*, 22/4/1990.

<sup>55</sup>ALCATEL entered the territories of the former USSR - Russia, Belarus (with MPOVT in 1998), Georgia, Armenia and Ukraine - through supply contracts and joint ventures: ALCATEL (2005): 29; it competed with NEC, Siemens and IskraTel in high-quality switching equipment, which achieved national product status: OCDE (2002): 306.

an investor is the integration into the Metropolitan Communications Company (Empresa Metropolitana de Comunicaciones, Metrotel), a mixed consortium formed by ALCATEL Bell Telephone of Belgium, the Metropolitan Area of Barranquilla, Telecom, Tele Cartagena and the Bank of Colombia through its subsidiary Colcorp<sup>56</sup>.

The factory closings and outsourcing were combined with the acquisition of companies according to changing strategies. Embarking on this approach in 1998, ALCATEL, now substantially oriented towards voice technology, was able to address the convergence around the Internet protocol (IP) – the centre of excellence was ALCATEL Bell – and to present a global offering<sup>57</sup>.

The group adopted the "pearls" strategy, which favoured the acquisition of start-ups. As part of its expansion plans for the US, ALCATEL Alstom SA paid approximately 4.4 billion dollars for DSC Communications Corp. (Plano, Texas), with the intention of strengthening its business in digital switching systems and network management, a company vulnerability. However, the forecasts went awry, and key ALCATEL clients, including Deutsche Telekom and France Telecom, reduced their orders by 37 per cent, with a subsequent fall in share value, to the great indignation of DSC investors. In fact, the DSC purchase disrupted the "pearls" strategy at the same time as it expressed the company's will to accelerate its repositioning in the data market for operator networks and to seek equilibrium in the North American market<sup>58</sup>. ALCATEL's USA gamble continued with the acquisition of networking solutions providers – 'technological preys' – such as Packet Engines, Xylan, Assured Access and Genesys<sup>59</sup>. The first three, purchased with the goal of multiplying sales by nearly seven in the Internet area in one year, cost \$ 2.7 billion, equivalent to 2.7 times the new annual sales. The acquisition of Internet Devices and Genesys Telecommunications Laboratories with the goal of leading the North American voice and data network integration market brought the total investment in that segment to \$ 5,000 million. ALCATEL acquired Internet voice-transmission specialist Telera with the aim of integrating it into Genesys, an undertaking made possible thanks to the buyer's strong liquidity. The USA had become ALCATEL's leading market in the field of telecommunications, with a turnover of \$ 3 billion and estimated annual growth of 12 per cent<sup>60</sup>. In 2002, ALCATEL acquired control of Shanghai Bell, which years before had become the largest manufacturer of telecommunications equipment in China and with its digital power plants had captured nearly half of the Chinese switching market<sup>61</sup>.

The crisis prolonged its effects beyond 2001. It should be noted that ALCATEL CIT, as it is known the group's main French subsidiary and whose staff numbered 7,200 employees, also had to face the crisis. Its recipe for circumvention was termed Plan 2004. The plan sought to rebalance resources between fixed telephony and optical activities, which were in decline, and the growing mobile business. This aim was agreed on with the majority of the company's union organizations<sup>62</sup>.

The logic of the companies in Europe reflected the world market situation, particularly that of one of its larger portions. At least in a part of that global market –the USA–, the revitalization of the demand of the telecommunications operators, driven by the intensified pursuit of new subscribers, affected equipment suppliers. Maintaining competitiveness required operators to expand services through network updates and attractive prices, which required a low-cost network infrastructure<sup>63</sup>.

This logic and, particularly, the redefinition of the product portfolio justified extending job reduction to R&D. The announcement to the unions of the decision to concentrate R&D investment in the USA and Asia immediately translated

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<sup>56</sup> Comisión de Regulación de Telecomunicaciones (2000): 201; *El Tiempo*, 7/4/1995.

<sup>57</sup> OCDE (2001): 117.

<sup>58</sup> *Bloomberg News*, 12/10/ and 4/6/1998; *Los Angeles Times*, 5/6/1998; *PRNews*, 2/11/1998.

<sup>59</sup> *L'UsineNouvelle*, 2.723, 2/3/2000.

<sup>60</sup> *Silicon Valley Business Journal*, 12/8/2002; *Computerworld*, 11 and 18/2/2000; Telera cost \$ 136 million in shares: *La Libre Belgique*, 30/5/ 2002.

<sup>61</sup> The action of the public institutions was of great importance. Shanghai Bell Telephone Equipment Manufacturing Co. (1983) was the first foreign joint venture, created through a technology transfer agreement between the Belgian and the Chinese governments, the Ministry of Posts and Telecommunications (MPT), Bell Telephone Manufacturing Company (BTM), IT&T and the Postal and Telecommunications Industrial Society (PTIC): Emiroğlu (2003): 5-6.

<sup>62</sup> Réponse du ministre délégué à l'industrie, *JOAN*, 19/10/2004, p. 8,005.

<sup>63</sup> In addition, operators struggled to converge several overlay networks: Bonenfant and Leopold (2006) pp. 102-108.

into a contracting freeze in Western Europe. The centralization of financial structures, supply chains and information systems would require additional job cuts (Table 3)<sup>64</sup>.

**Table 3. Restructuring of ALCATEL-Lucent in several European countries, 2007**

Country	Belgium	Germany	Netherlands	Ireland	Spain	France
Employment in the country	1,844	5,000	700	260	1,250	12,500
Job cuts in the country	140	770	140-180	70	310	1,468-1,500
Per cent affected staff	7.6	15.4	20	25.71	24.8	12

Source: Own from *European Restructuring Monitor Quarterly*, 1, spring 2007, pp. 12-13.

Table 3 shows the asymmetric incidence of staff restructuring in several European countries. In absolute terms, the highest number of job cuts occurred in France. However, in percentage, Spain and Ireland led, two countries otherwise significantly different in terms of the company's presence. It is evident that economic rationality and the attempt to reduce costs and apply economies of scale prevailed. There were also other considerations, including the peculiarities of the regulatory framework, the relevance of the location of a particular site within the entire group, the company culture and the structure of the national market, not to mention the unequal strength with which the crisis afflicted the different sub-sectors. The late European regulation of social relations in industry affected the member countries equally. However, certain employment protection laws were exclusive to certain countries – the 1997 Renault law in Belgium, for example, which required information and consultation procedures with sanctions –.

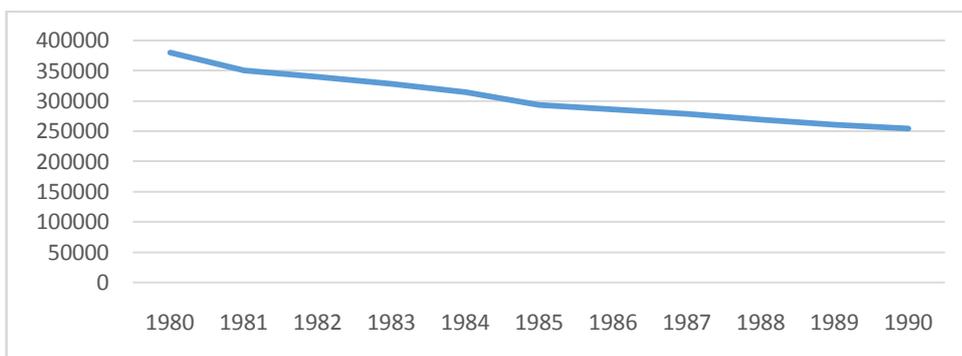
The employment adjustments were part of a global plan to reduce costs by 1,700 million euros in three years. With this method, the company sought to eliminate redundancies in jobs and to rationalize its portfolio of products and solutions. In addition, cost-efficiency efforts were on-going. A conflict emerged. The unions did not recognize the unfavourable economic situation adduced as an argument by the company and attributed to the merger a subterfuge to increase job cuts and relocate activity to low-cost countries. Therefore, the unions determined to take legal action against the company and demanded detailed information on the restructuring plan<sup>65</sup>.

ALCATEL-Lucent maintained the strategy of plant cessions with its employees and manufacturing assets, as attempted at Geel in Belgium. ALCATEL-Lucent undertook to maintain activity there for at least three years and to consider Geel TBP in its product innovation plans and pilot production and industrialization facilities, including in the transfer of technology to other, larger plants<sup>66</sup>.

<sup>64</sup>*European Restructuring Monitor Quarterly*, 1, spring 2007; ALCATEL: comunicato del Coordinamento nazionale: Actionday, 15/2/2007. Paradoxically, the specialists presented ALCATEL-Lucent as a champion of diversity management and diversity of models, a strong advocate for the "most effective diversity initiatives emerging from the foundations of the company": Verbeke (2013): 43.

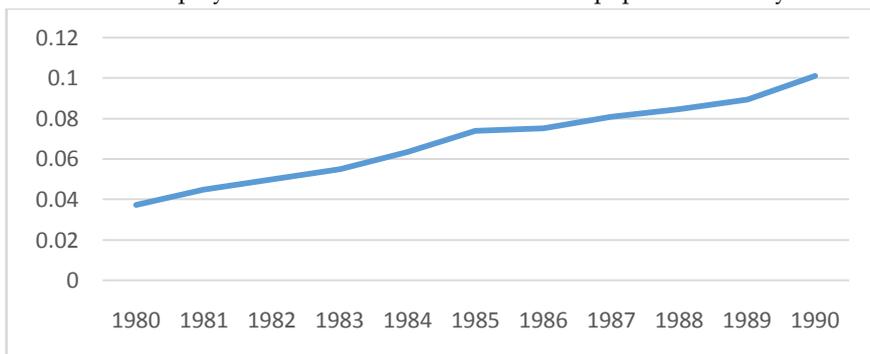
<sup>65</sup>*European Restructuring Monitor Quarterly*, 1, spring 2007, p. 10; ALCATEL: Coordinamento nazionale: Actionday, 15/2/2007.

<sup>66</sup>*EE Times*, 2/8/2007; *Telecompaper*, 7/2/2007. Previously, the Belgian plants of Anvers and Geel were excluded from the restructuring. Alcatel was a world leader in ADSL, a specialty that represented 65 percent of Alcatel Bell's revenues; Alcatel manufactured in Belgium half of the lines sold: *La Libre Belgique*, 30/4/2003.



**Figure 1**

Evolution of employment in the telecommunications equipment industry of the EEC



Source: Own from Euro strategies ESTEL, Eurostat (Comext).

**Figure 2**

Evolution of productivity in the telecommunications equipment industry of the EEC

Thus, the fab-less strategy did not embody a policy of the past, in open contradiction to statements by ALCATEL management at a meeting of the European Committee for Information and Dialogue, a social dialogue entity<sup>67</sup>.

Despite the promises of the EMSs, one of the most flagrant consequences of the sector's restructuring was decreased employment, which affected the entire EEC (Fig. 1). At the same time, productivity followed an increasing trend in all the countries of the EEC (Fig. 2).

#### IV. Conclusion

This research aims to analyze one of the most striking features of the current outsourcing-based economy through a case study in which the narrative side is of prime importance. In view of the shortage of studies in the field of business history, the article claims the full validity of a narrative that collects and systematizes the copious scattered information. It has focused on some axes of the functioning of the world economy at the close of the 20th century and the dawn of the new millennium. More specifically, the work has elucidated what the origins of a big company outsourcing reveal about the mechanisms of the global economy, the incidence of cyclical behavior and the role the agents played, with multinationals at the forefront and in the framework of an increasing mobility of the factors of production and change.

The text addresses a long cycle of restructuring of the telecommunications equipment industry that continues to this day. In a general level, the evidence provided goes any deeper into the complexity of the transformation process of the sector. At a very basic first level and in the context of a shortage of aggregate data, the study provides details on the chronology of restructuring and outsourcing, distinguishing between an initial phase of classical restructuring and, within it, the first restructuring, and one linked to globalization. An important task has been to rebuild the ALCATEL production system and the diversity of ways of restructuring the company. The article has also identified a transition

<sup>67</sup>ALCATEL: comunicato del Coordinamento nazionale: Actionday, 15/2/2007.

between the two phases, in which the company was oriented to the outsourcing of its production. Episodes of intra-company relocation but also of full or partial cession of the activity to subcontractors occur before the dividing stage between the major stages.

The research performed reasserts the study of the large multinational company as an effective instrument to understand the reshaping of the telecommunications equipment industry. The case of the French multinational ALCATEL, a quintessential example of a global company due to the breadth of its implementation, the variety of its products and the diversity of business cultures, has shown the basic characteristics of this process, which in essence involved the passage of vertical integration to the outsourcing of production and from national champions to global companies. The evidence provided here does not draw a linear trajectory of this process; rather it reveals possible alternatives contemplated by the agents and corrections to the policies undertaken. In the same way, it seems to deny to the adopted strategy a homogeneity and a perfect definition from the beginning. ALCATEL marries up outsourcing with disinvestments but also with acquisitions of companies, strategic alliances with local partners, by creating joint ventures or acquiring existing ones from them. On the other hand, this transition from captive to outsourcing markets that we have announced in the initial approach also tolerates the survival of the former, as the fact that some of ALCATEL's subsidiaries primarily supply companies within the group itself evidences. As it is a general process, the study reveals differences in impact between countries, either due to the role played by any of the ALCATEL group -the case of France, residence of the general headquarters, and of Italy, due to its strategic condition, the importance of the products of a given country for the whole or the position of governments and unions.

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