



BANCA D'ITALIA
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(Economic History Working Papers)

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Re-examining Olivetti-Underwood Fifty Years Later

by Federico Barbiellini Amidei, Andrea Goldstein and Marcella Spadoni

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European Acquisitions in the United States: Re-examining Olivetti-Underwood Fifty Years Later

Federico Barbiellini Amidei*, Andrea Goldstein** and Marcella Spadoni***

Abstract

While Italy's catch-up in the course of the 20th century has been nothing short of extraordinary, it has failed to produce a large number of global business players. Nonetheless, half a century ago an Italian company concluded what was at the time the largest-ever foreign takeover of a US company. The paper analyzes the Olivetti's acquisition of Underwood and frames it in the broader picture of the literature on the management and performance of foreign companies in the United States. We provide a historical narrative focused on three main issues: 1) head office control and subsidiary autonomy; 2) Olivetti's adaptation to the American business system; 3) the development of internal knowledge resources within the subsidiary. Lessons and implications are relevant for business historians and management scholars in general.

JEL Classification: L11, M4, N60, N80, F23.

Keywords: FDI, acquisition, control, adaptation, knowledge resources, Olivetti, Underwood.

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1. Introduction¹

The significance of studying European multinationals (MNCs) and the contribution that this line of research can make to enhance our understanding of the history of international business has long been apparent (e.g. Franko 1974). Out of the many permutations of home and host countries that could be studied, however, Italian investments in the United States have received relatively little attention.² While the degree of internationalization of Italian big business remains relatively modest – the *World Investment Report*, for instance, includes two Italian entries among the world's top 100 non-financial TNCs, versus 14 for France and 13 for Germany (UNCTAD 2009) – a number of rather extraordinary entrepreneurs and companies are responsible for the country's catch-up in the course of the 20th century (Amatori 1980; Zamagni 1998).

It may therefore seem surprising that half a century ago an Italian company made what was at the time the largest-ever foreign takeover of a US company, a record that, with the well-known limitations of time series in this area (Golbe and White 1988), lasted for a few decades. Once granted, Olivetti's acquisition of Underwood soon became material for business school cases of what not to do when investing abroad (Learned et al. 1965), and in fact was a major determinant of the major crisis that hit the office equipment manufacturer in the early 1960s. But this does not detract from the importance of writing a comprehensive history and analysis of such an important deal, from which many lessons and implications can be drawn that are of interest for business historians and economists in general.

In particular, we intend to place the Olivetti-Underwood story in the broader framework of the literature on management and performance of foreign multinationals in the United States (Jones and Gálvez-Muñoz 2001) and of some of the insights produced on cross-border acquisitions and subsidiary development. Following a short review of the presence of Olivetti in the United States and the history of Underwood in the period immediately preceding the acquisition, we provide a historical narrative focused on three main issues: 1) head office control and subsidiary autonomy; 2) Olivetti's adaptation to the American

¹ Corresponding author: federico.barbielliniamidei@bancaditalia.it. While this paper is a result of a joint effort, sections 3, 4 and 6 can be attributed to Marcella Spadoni, 2, 5 and 10 to Andrea Goldstein, 7, 8 and 9 to Federico Barbiellini Amidei. The authors thank Gianluigi Gabetti, Giancarlo Lunati, Nerio Nesi and Alberto Vitale for accepting our interview requests; staff at Archivio Storico di Intesa Sanpaolo, patrimonio Banca Commerciale Italiana, Archivio Storico Banca d'Italia, Archivio Storico Olivetti, Baker Library (Harvard Business School), Biblioteca della Fondazione Luigi Einaudi, Biblioteca Nazionale Universitaria, BusinessWeek, Istituto piemontese per la storia della Resistenza e della società contemporanea Giorgio Agosti, Istituto Piemontese Gramsci, Telecom Italia and Watson Library of Business and Economics (Columbia University) for providing background material and/or access to their archives; *Journal de Genève*, *The Economist*, *The Financial Times*, *The Machinist*, *The New York Times* and *Time* for the brilliant idea of putting their archives online; Enrico Bandiera, Maria Vittoria Capitanucci, Nino Cusimano, Alessia de Biase, Valeria Giaquinto, Ken Frew, Elisabetta Loche, Luigi Manzetti, Peter Meyers, Riccardo Pettazzi, Francesca Pino, Luciano Pregnotato and Ben Ross Schneider for help in various forms; Claire Giordano, Paolo Mancinelli, Edoardo Mollona, Margrit Müller, Vera Negri Zamagni, an anonymous referee and seminar audiences at Bocconi, Bologna, Macquarie and Turin Universities, and at the XVth World Economic History Congress for comments on earlier drafts. The opinions expressed in this paper are those of the authors and do not necessarily reflect those of the Bank of Italy and the OECD.

² Barbiellini Amidei and Goldstein (2008) is an exception. Work produced as part of the HBS Comparative Multinational Enterprise Project included some references to Italian multinational corporations.

business system and its relations with the local community in Hartford and Harrisburg; 3) the development of internal knowledge resources at the Harrisburg subsidiary and then, in the 1970-80s, at Olivetti research laboratories in various US locations.

2. Subsidiary development and European multinationals in America

Reflecting the assumption that subsidiaries merely exploit the ownership advantages of their parent companies, multinational companies are usually analyzed from a headquarter perspective (Sandvik 2007). And yet there is no doubt that subsidiaries are important as firms and play a significant role within multinationals (Jones 2005, p. 162). How do multinational enterprises and their subsidiaries operate in foreign geographies and adapt to the local business systems, labor relations, and government affairs? What autonomy do the subsidiaries have? What contributions do subsidiaries make to knowledge development and R&D? Does the form of entry make a difference?

As in many other areas, the insight of Edith Penrose remains pertinent to this day. In her 1956 seminal contribution she observed that “on the whole, foreign subsidiaries have, for a variety of reasons, a greater degree of independence of the parent than have domestic subsidiaries” (p. 226) and hence should be treated as separate firms. In particular, she listed a number of factors that make foreignness a liability, such as distance, that tends to restrict the mobility of personnel and the difficulty of navigating “a radically different political, economic and social environment”.

Her approach, however, did not question the fact that the headquarters remain the locus of creation of the internal resources that determine the “productive opportunity” which invites corporate expansion. This view has been challenged by the reality of firms meeting difficulties in internal development and engaging in foreign direct investment (FDI) not only to exploit their existing capabilities (e.g. patents, brands, sales force) but also to augment them. FDI can hence aim at gaining market access, reducing costs and/or sourcing technology (Barba Navaretti and Venables 2004). When these are bundled in another corporate entity, a firm can meet demands for new capabilities by entering the market for corporate control (Anand and Delios 2001). In such case ‘pull factors’ from the affiliates themselves make an important contribution to the evolution of the multinational. Pearce (1999) uses the term ‘creative subsidiaries’ to characterize subsidiaries that actively try to shape their destinies and develop new products or new technology – the parallel to the genius that outgrows the bottle comes to mind.³ A less extreme reading is provided by the Kristensen and Zeitlin (2004) investigation of the British, Danish and US subsidiaries of a British engineering multinational, Aluminium Plant & Vessel (APV). Each of these affiliates had earlier been independent firms with their own distinct company cultures. Kristensen and Zeitlin show that each affiliate joined APV – at least partly – because of its own strategic efforts. Becoming a part of a multinational was seen as beneficial because this gave better access to global markets and low-cost capital. But after APV made the acquisitions, each subsidiary was allowed to pursue its own agenda – again they were in many ways quasi-independent actors.

³ Empirical studies have indeed shown that several subsidiaries have developed innovative capabilities. Mira Wilkins (2004, pp. 605 and 608-609) has documented that many foreign owned chemical, pharmaceutical and petroleum companies in the United States engaged in R&D during the interwar years.

The next logical step is to analyze the performance of cross-border mergers and acquisitions. The literature on this is immense and this is not the place to review it. Suffice here to notice that by and large there is consensus that “acquisitions do not appear to result in an increase in value nor do they lead to strong financial performance [although] the researchers who have judged mergers and acquisitions on a long-term basis have reported a more mixed outcome” (Hopkins 1999, p. 220). Finkelstein (1999, p. 119) observes: “an inescapable fact emerges when these deals are examined more closely – the majority of cross-border M&As are not successful”.

Case studies confirm that foreign investors experience severe problems in the US, caused by “the sheer size of the US market, its often ferociously competitive nature, the difficulties of acquiring good US companies at a reasonable price, and many problems in the area of post-entry management” (Jones and Gálvez-Muñoz 2001, p. 7).⁴ This latter problem appears to have been frequent, because European executives found US laws (anti-trust ones in particular) unpredictable and the business culture rather *sui generis* and insular, while they also held the US management practice in the greatest esteem and therefore maintained a sort of “inferiority complex”. Even Unilever, one of the world’s earliest and most widespread multinational firms, experienced decades of falling market share, declining profits and managerial problems in the United States between the 1950s and the 1980s.

There are of course also cases of successful acquisition, such as that of Ryder, the second largest player in the US school bus industry, by UK’s FirstGroup. Duncan and Mtar (2006) demonstrate the importance of identifying a target in a market sector in which the home country has a competitive advantage and which fits well with the acquirer’s core business. They also find that, under certain conditions, low integration can yield significant benefits and that the capacity of the acquirer to learn from previous acquisition experience is critical in ensuring the successful management of both pre- and post-acquisition phases. In their longitudinal case study of the use of acquisitions by Unilever to build the world’s largest ice cream and tea businesses, Jones and Miskell (2007) find evidence that complementary rather than related acquisitions add value. Unilever was able to integrate acquisitions quite successfully thanks to clear strategic intent and could take a long-term view because of its size, and relative unconcern for shareholder interests before the 1980s. We turn to focus on the Olivetti case.

3. Olivetti in the US before Underwood

Camillo Olivetti founded Ing. Camillo Olivetti & C. (from here onwards Olivetti) in Ivrea, in 1908, after a job assignment in California to lecture electrical engineering at Leland Stanford University (Caizzi 1962). The company specialized in typewriters, with a strong focus on quality and design. Its international expansion was rapid. In the early 1920s, Olivetti began exporting, then established branches abroad, and in 1929 it opened its first foreign plant in Barcelona.⁵ After World War II, when German production had halted, the

⁴ Quantitative data suggests that the return on assets of foreign-owned companies in the United States is consistently lower than US-owned firms. A favourite explanation for this underperformance has stressed transfer pricing, although Jones and Gálvez-Muñoz (2001) downplay this aspect.

⁵ By 1958 Olivetti had four other foreign plants in Scotland, Argentina, Brazil and South Africa. See Archivio Istituto piemontese per la storia della resistenza e della società contemporanea Giorgio Agosti (from here onwards ISTORETO), Fondo Umberto Zanatta (FUZ), b. C UZ 73, fasc. 149, “Relazione sul dott. Pero”, undated.

Ivrea-based company, with Camillo's son, Adriano, at the helm, became the European leader in the production of calculators and typewriters. Already by mid-1950s, more than half of production was being exported and from 1950 to 1961 exports rose seven times in the case of typewriters and 23 times for calculating machines (see tab. 1, fig. 1).⁶

The US market, with its vast potential, attracted Adriano's interest.⁷ A subsidiary (Olivetti Corporation of America, OCA), run by Dino Olivetti, Adriano's brother, was established in New York in 1950, not only to promote sales but also to raise the necessary foreign currency to cover purchase of materials and equipment in US dollars. Facing relatively little competition, with Remington Rand as the only competitor, Olivetti began selling printing calculators, of which nearly 10,000 units had been sold three years later.⁸ The Italian company was competing on quality and innovation rather than price – its machine was selling at US\$ 555, versus US\$ 469-525 for Remington Rand's.⁹ The slowdown that followed the end of the Korean War prompted a reinforcement of the foreign network. In 1954 OCA had a dozen distributors and over 450 dealers in the country.¹⁰ That same year new branches were set up in San Francisco and Chicago¹¹, followed by openings in Kansas City, Los Angeles, Dallas and Montreal. Ugo Galassi was in charge of international operations (de Witt 2005, p. 58), supported by Giuseppe Pero.¹² In 1956, OCA had a book value of US\$ 360,000.¹³ Two years later, the US market was the largest export one for Olivetti products, absorbing more than 20 per cent of sales abroad (see tab. 1, fig. 2; volume quality adjusted).

OCA's activities enhanced the appreciation of the Olivetti brand.¹⁴ The company invested in new and better production facilities, but design excellence was what really set it apart from competitors.¹⁵ In 1952, the Museum of Modern Art in New York organized a 40-

⁶ "Company meeting reports – Ing. Olivetti & C. S.p.A.," *The Economist*, 2 June 1962; see also Gallino (1961). On Italian industry export performance in 1950s and 1960s, see Gomellini (2004) and Gomellini and Pianta (2007).

⁷ Archivio Storico Banca d'Italia (from here onwards ASBI), Consorzio sovvenzioni su valori industriali, pratt. No. 51, fasc. 1, pp. 222-226 (5 February 1947) and pp. 283-284 (15 December 1950).

⁸ "Invading U.S. Office Machine Market," *BusinessWeek*, 31 January 1953.

⁹ In 1953, Olivetti machines earned Italy more dollars (US\$2.4 million) than any other mechanical export except Necchi sewing machines. "Thinker from Ivrea," *Time*, 8 February 1954.

¹⁰ Archivio Storico Olivetti (from here onwards ASO), Fondo Direzione Comunicazione Ufficio Stampa (DCUS), Fondo Versamento Tiglio (FVT), Rassegna Stampa Consociate (RSC), fasc. 710, coll. V-C-N, *Olivetti – The Company Story*, undated (probably 1954).

¹¹ ASO, coll. V-H-18-1, "Good news from Olivetti Corporation of America," *Notizie Olivetti*, n. 14, February 1954, pp. 1-4.

¹² ISTORETO, FUZ, b. C UZ 63, fasc. 149.

¹³ See *Journal de Genève*, 31 May 1956, p. 6; "Relazione sull'esercizio chiuso al 31 marzo 1958, Olivetti", p. 31, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1328.

¹⁴ ISTORETO, FUZ, b. C UZ 76, fasc. 202, "Promemoria di Adriano Olivetti del 26 luglio 1957". See ASO, coll. V-H-18-1, "Pubblicità Olivetti su LIFE," *Notizie Olivetti*, August-September 1958, pp. 4-5.

¹⁵ Although *The Economist* begged to disagree, arguing that Olivetti had "an emphasis on low-priced, none-too-fancy equipment which is a big asset when it comes to selling to developing countries but not necessarily so in more sophisticated markets" ("Low prices, low profits," 27 August 1966). Olivetti was also different as aimed at giving his workers the best conditions in Italy and a voice in management. He promoted a broad-based cooperative movement called Comunità that in 1956 won local elections by a landslide. Adriano became Mayor

day design exhibition of the work of the Olivetti Company (Lionni 1952) and in 1959 a poll by the Illinois Institute of Technology among 100 top designers and architects around the world chose the Lettera 22 typewriter, designed by Marcello Nizzoli in 1948, as the best-designed product of modern times.¹⁶ The Fifth Avenue flagship store, designed by the famous Milanese firm of Belgioioso, Peressutti and Rogers, was inaugurated in 1954, followed by others in San Francisco and Chicago designed by Leo Lionni.¹⁷

As early as 1952 Olivetti opened an electronic computer research laboratory, in New Canaan, CT. Dino Olivetti, who had the initial idea, supervised the facilities that were managed by Michele Canepa. The initiative was a “listening post” to stay close to the technological frontier in electronics and information technology (Sacerdoti and Ranci 1993, p. 127 and Gemelli and Squazzoni 2003). Staff was recruited among young Italians studying in the US, such as Columbia’s Giuliano Raviola and MIT’s Danilo Zucoli (Piol 2004, p. 28).¹⁸ In 1956, a team from Ivrea led by Ottorino Beltrami spent four months in the United States with Canepa, visiting 36 different industry laboratories.¹⁹ In the meanwhile, in fact, Olivetti had started an ambitious project with the University of Pisa and in 1955 a research team had been established in Barbaricina, near Pisa, under the guidance of Mario Tchou to design an electronic computer for commercial purposes (De Marco *et al.* 1999).²⁰ Beltrami’s

of Ivrea, but resigned one year later conscious of the impossibility of influencing national policies through local action. In 1958, he ran again for the general elections as a candidate for the Community Movement Party, but won only 170,000 votes, 0.6% of the total. (De Luca 1986, p. 180). This defeat forced him to resign his position as Olivetti’s president, if only for a short period (“A misura di padrone,” *Nuovo Mondo*, 8 November 1959, in ASO, DCUS, Primo Versamento (PV), fasc. 2281, coll. V-E-D-3-4). The literature on Olivetti’s industrial relations and corporate citizenship is vast, see *Communitas* (2008), Gallino (2001), Ochetto (2009).

¹⁶ In total Italy had eight nominations (including another Olivetti printing calculator) making it the second country in the listing after the United States (with 73 nominations). The MOMA also included two Pirelli products in the catalogue of an exhibition on packaging held in September 1959 (“Contentitori «Pirelli» al Museum of Modern Art di New York,” *Fatti e notizie*, March 1960).

¹⁷ “Good news from Olivetti Corporation of America,” *Notizie Olivetti*, February 1954, pp. 1-3. Born in Amsterdam in 1910, Lionni was raised in Genoa and Milan, where he rubbed shoulders with the futurists while studying economics. He moved to the United States in 1939, where as an art director of N. W. Ayer & Son in Philadelphia he supervised Container Corp. of America’s famed series that brought modern art into advertising layout. After working as design director for Olivetti Corporation of America in 1951-58, Lionni became art director of *Fortune*. See “Art in Many Forms,” *Time*, 22 December 1958.

¹⁸ In the early 1980s, when Olivetti returned to the computer industry, Giuliano Raviola worked in the Cupertino laboratory to develop a second-generation PC (the M24). In 1985 he joined the team of the corporate venture program of Olivetti, established in 1980 by Elserino Piol (see below).

¹⁹ Ottorino Beltrami had a distinguished career with Olivetti, being responsible for Olivetti-Bull from 1955 to 1964, for the electronics division from 1962 to 1964 (after which he joined GE until 1971), and finally managing director from 1971 to 1984 (Novara *et al.* 2005, pp. 558-559).

²⁰ The son of a Chinese Vatican diplomat, Tchou earned an Italian degree in engineering and then became Professor at Columbia University. Surfing on the support received from Enrico Fermi, to whom the University had asked what would be the best instrument of national importance for uplifting Pisa scientific stature, the first electronic and digital computer for scientific applications entirely designed and manufactured in Italy was completed in 1955. On 3 September 1955 Olivetti placed an advertisement on *The Economist* to hire engineers with full experience in “digital computers” for its research and development laboratories in Italy.

suggestion was to close the New Canaan facilities and to move all research efforts to the Italian laboratories (Sacerdoti and Ranci 1993, p. 127).²¹

Adriano also nurtured a close relationship with many influential Americans in different domains. In 1956 Olivetti was made an honorary member of the American Institute of Planners and deputy chairman of the International Federation for Housing and Town Planning. In this context he became close to David Lilienthal, who had previously been a founding director of the Tennessee Valley Authority (TVA) and the first chairman of the Atomic Energy Commission (AEC) and was then chairman of the Development and Resources Corporation (D&R), provider of regional economic development services.²² One year later Olivetti's entrepreneurial achievements won further recognition when the National Management Association of New York awarded him a prize for "ground-breaking activity in the field of international company management."²³ Adriano also maintained close contacts with leading political figures such as CIA Director Allen Dulles, Clare Boothe Luce (Ambassador to Rome), and Henry Kissinger (then secretary of Americans for Democratic Action, an influential liberal organization).²⁴

4. A short history of Underwood

The takeover of Underwood radically changed the status of Olivetti activities in the US – before analyzing the consequences it is important to understand what it was buying. Underwood (originally called Wagner Typewriter Company) was founded by John Thomas Underwood in 1895 to manufacture typewriters exploiting Franz Wagner's patent. Once the leader of the U.S. typewriter industry – it was the company which had inspired Adriano's father, Camillo, when he founded Olivetti and which Adriano himself had unsuccessfully tried to visit in 1925, during his first and most significant U.S. trip (Crepax 2001 and Gemelli 2001) – Underwood lost its edge due to its unwillingness to innovate (Golder 2000).²⁵ The company also made a big mistake when it chose not to protect intellectual property for an electric typewriter, thus allowing IBM to file the patent.²⁶ During World War

²¹ According to Piol, the centre was still active in 1959-60 and employed some 40 people, and in fact its closure was decided in order to strengthen another Olivetti research laboratory in Italy, in Borgolombardo, that in turn absorbed the one in Barbaricina (Piol 2004, p. 28). At the time of the Underwood-OCA merger in 1960, the New Canaan assets were valued US\$956,480 (ISTORETO, FUZ, b. CU Z 59, fasc. 142, "Accordo stipulato il 12 aprile 1960 tra la Underwood Corporation, una società del Delaware e la Olivetti Corporation of America, società del Delaware," p. 6).

²² The two met in Bari where Olivetti presented to Lilienthal his project for an Institute for Urban and Rural Development in the Canavese. See Development and Resources Corporation Records, 1936-1980, Box 273, Folder 33, Seeley G. Mudd Manuscript Library, Princeton University.

²³ ASO, coll. V-H-18-1, "Un riconoscimento americano al nostro Presidente," *Notizie Olivetti*, August-September 1957, p. 38.

²⁴ See correspondence between Adriano Olivetti and Clare Boothe (ASO, Fondo Corrispondenza Presidenza (FCP), fald. 8, fasc. 140, coll. V-A-A-1-1).

²⁵ Rather than try to outdo its competitors, Underwood sought to collude with them. According to a 1939 federal antitrust indictment, the four largest typewriter manufacturers met to coordinate activities as early as 1930. Their combined 90% market share and coordinated pricing enhanced short-term profitability. One year after the indictment, Underwood and the other three manufacturers agreed to a consent decree that prohibited their monopolistic practices.

²⁶ ASO, DCUS, PV, fasc. 1532, coll. V-E-D-2-3, "Il dramma della Underwood e il finale Olivetti," *Mercurio*, 15 March 1961, pp. 57-59.

II, while IBM and Remington Rand took advantage of government-sponsored opportunities to develop technology that would eventually prove useful after the war, Underwood opted instead to invest all its energies into the war effort as manufacturer of rifles.²⁷ At the end of the war, a change in management added to the company's indefiniteness. From 1945 to 1955, Underwood continued to pay high dividends rather than invest more in product development and manufacturing (Bryan 1962). Whereas other companies were investing heavily in computer technology, Underwood only acquired the small Electronic Computer Corporation of Brooklyn in 1952.

Finally, in 1956, several factors brought to light Underwood's weaknesses. First, the lower-priced foreign competitors' market share of manual typewriters increased from 15 per cent to 40 per cent during a five-year period.²⁸ Second, outdated manufacturing facilities became too costly.²⁹ Third, electric typewriters became more competitive, later overtaking sales of manual typewriters in the early 1960s. It took Royal and Smith Corona Marchant (SCM) four to five years and more development before they could successfully market a fully electrical office typewriter in the United States. Triumph-Adler required over five years to develop and to market an electrical typewriter. In this segment, barriers to entry in terms of technological and marketing requirements were enormous. The task of establishing an effective marketing organization and achieving the degree of market penetration needed to attain competitive costs is time-consuming and difficult.³⁰

These conditions led to increasingly large losses and failed efforts at new strategic directions. Underwood spent US\$ 12 million to diversify into computers but gave up after 18 months, lacking the necessary technical expertise. The top management changed three times in as many years.

In 1957, the firm sought mergers with International Telephone & Telegraph (IT&T) and National Cash Register, and then with Litton Industries in 1959, but Underwood was already too weak to be attractive to those firms. Losses and debts kept rising as the US economy entered into recession between 1957 and 1958. Concerned banks asked to be represented on the board: in 1958, out of 12 directors, three were from Chase Manhattan Bank³¹ and one each from Lehman Brothers and Lazard Frères.³² Bank representatives also held four of the six Executive Committee positions.

²⁷ Learned *et al.* (1965), p. 213.

²⁸ The vicissitudes of Underwood must be seen in the broader canvas of the transformation of the global industry. As a maker of manual typewriters, America declined after the Second World War. Production never returned to what it had been; from being the world's largest exporter of typewriters, the United States became the largest importer, with companies such as Nippon in Japan, West Germany's Olympia (with factories in Yugoslavia, Canada, Mexico, and Chile), and Olivetti.

²⁹ In 1955 a new plant was proposed but never built ("Full Union Shop at Underwood, World's Largest Typewriter Plant," *The Machinist*, 30 June 1955).

³⁰ FTC (1973), p. 333.

³¹ Chase Manhattan Bank was the main creditor, for US\$ 16.4 million. ASO, DCUS, PV, fasc. 1532, coll. V-E-D-2-3, P. Magnaschi, "Olivetti: dieci anni di America," *Avvenire*, 14 August 1970.

³² Chase-connected directors included Lynde Selden (previously Executive Vice-President and Director of the American Express Company Inc., and Director of the Chase National Bank), Robert Livingston Clarkson (American Express top manager, in late 1920's president of CNB), and Reeve Schley (until 1946 vice president

5. The Underwood acquisition

Desperation drove the Underwood management to decide that being acquired by Olivetti was the best solution after all. Philip Wagoner, who cast his final vote for the Olivetti offer, “was heard to say, ‘It’s manna from heaven’. The sentiment was widely shared”.³³ The Italians, for their part, were worried about other European companies taking over Underwood – according to Ochetto (2009, p. 276), conversations were being held with Monroe, a subsidiary of Germany’s Olympia – and concerned that resentment over “the growing flood of foreign imports of all kinds” could lead to higher tariff barriers.³⁴

In late September 1959, Frank E. Beane, president of Underwood since 1957, sent the company’s Vice President and Secretary, Herbert W. Bertine to Ivrea. Bertine’s proposal was for Underwood to distribute Olivetti calculators, especially the D Line (Divisumma 24), in the USA, under the Underwood brand. While Adriano Olivetti refused the proposal (Piol 2004, p. 23), the Olivetti executive committee, upon considering the complementarity between the two companies, decided to continue the talks.³⁵ Some days later though, Adriano took his brother Dino (Senior Technology Manager), his son Roberto (Managing Financial Director), Giuseppe Pero (CEO), Ugo Galassi (Marketing Director), Guido Treves (Foreign Markets Director), Luigi Gandi (Production Manager), Guido Lorenzotti³⁶ (then Executive Vice President and head of OCA) and Gianluigi Gabetti³⁷ (Financial Expert) to New York.³⁸ Dino and Roberto Olivetti went with Gandi to Hartford to visit the main plant, Galassi and Treves took charge of the sales network, Gabetti examined the books, and Adriano together with Pero talked to the lawyers and Underwood top management. It is difficult if not impossible to determine whether Underwood management did or did not paint a realistic picture of the company’s situation and produce all the necessary documentation. Fact is that the negotiations were completed in a hurry – in fact no proper due diligence was

of the CNB), while Joseph A. Thomas was partner in Lehman Bros., and Albert J. Hettinger Jr. in Lazard Frères.

³³ “Olivetti: Elegant and Tough”, *Fortune*, September 1960.

³⁴ “Invasion in Office Machines,” *BusinessWeek*, 10 October 1959. At the time, exports from Italy represented about 50% of Olivetti’s annual gross sales (with North America alone representing more than one fourth) and overseas production a further 20%.

³⁵ Archivio Telecom Italia Milano (from here onwards ATIM), Verbali del Consiglio di Amministrazione della Ing. Camillo Olivetti & C. (from here onwards VCDAO), vol. IV, *Verbale della seduta del Comitato Esecutivo del 23.09.1959*, p. 164).

³⁶ Guido Lorenzotti held major positions in Olivetti, the Italian Economic Corporation, the North America delegation of Touring Club Italiano, and Beretta USA.

³⁷ Gianluigi Gabetti joined Olivetti in 1958 from Banca Commerciale Italiana. Gabetti served as Chief Executive Officer of IFI, the holding company of the Agnelli family, from 1972 to 1993, as a Director of FIAT from 1971 to 1999, and also in various capacities for other companies of the Agnelli Group (IFIL, EXOR, Worms). Gabetti is a Life Trustee of the Museum of Modern Art, where his late wife Bettina Kunz Sichel (born in New York) was a member of the International Council and Architecture and Design Committee. Gianni Agnelli’s offer to leave Olivetti and return to Italy to join IFIL was made to Gabetti during a visit to the MOMA (“John e le lezioni del tutor Gabetti,” *il Mondo*, 16 March 2007).

³⁸ ATIM, VCDAO, vol. IV, *Verbale della seduta del Consiglio di Amministrazione del 21.10.1959*, pp. 167-168.

conducted – and that most Italians expressed severe reservations.³⁹ Nonetheless, Adriano decided to go ahead with the merger. He was sure of his ability to turn the American company around and use it as the tool to conquer the US market for Olivetti.⁴⁰ In this context Adriano thought that only the acquisition of a large equity stake made sense. Thus, on 2 October 1959, Olivetti purchased 34 per cent of Underwood's stock for US\$ 8.7 million (at US\$ 21.50 per share)⁴¹, thus becoming the main shareholder.

Lazard Frères Chief André Meyer and his right-hand man Albert J. Hettinger⁴² – who had been an Underwood director since 1957 – helped in the negotiations, although they had probably advised Adriano against the acquisition (Ochetto 2009, p. 279).⁴³ Chase Manhattan Bank President David Rockefeller was also supportive both for financing and for network building.⁴⁴ Financial markets welcomed the agreement. Underwood's stock at the NYSE rose from US\$ 21.12 to US\$ 25.37 and stabilized at US\$ 28.50 at the beginning of December. Some analysts advanced the hypothesis that Olivetti itself was intervening in

³⁹ According to Gianluigi Gabetti, “four days of discussions with our counterpart in the Underwood organization in the US [made it clear that] the situation was very bad [...] We understood from the banks that the financial reputation of the company had been spoiled, and that the inventories were badly overstated”. See “Statement by Mr. Gabetti,” in Learned *et al.* (1965), pp. 235-236.

⁴⁰ Gianluigi Gabetti and Financial Director Nerio Nesi expressed their reservations to Adriano, who sidestepped them out of an intimate conviction of his ability to turn the American company around, albeit not in the short term (respectively Semplici 2001, p. 104 and personal communication, Turin, 13 May 2009). As recalled by Renzo Zorzi, however, upon his return from the United States Adriano said “if instead of staying with the lawyers I had gone with the engineers, I would have never given my consent” (Giuntella 1984, p. 33, our translation). It has been maintained that Adriano was the only possible one to fully face this challenge (perhaps, gaining full support by Italian and US authorities; Nerio Nesi personal communication, Turin, 13 May 2009; Avalue *et al.* 1995, p. 35), so that, with his death, his legacy turned out being an even more sour *hubris* (Roll 1986).

⁴¹ Olivetti's offer was very generous; just some days before Litton Industries had made a merger proposal valuing Underwood shares at \$16 each (“Il dramma della Underwood e il finale Olivetti,” *Mercurio*, 15 March 1961, pp. 63-64, in ASO, DCUS, PV, fasc. 1532, coll. V-E-D-2-3).

⁴² Gianluigi Gabetti, personal communication, Turin, 30 October 2007. Albert J. Hettinger Jr., a former Harvard professor, was hired by André Meyer in 1944 and became Chairman of the US\$ 118m Lazard Fund in 1958 (see “The Lazard Fund, Inc.” in ASBI, Studi, cart. 301, fasc. 2, p. 2; “Lazard Frères Partner An Underwood Director”, *The New York Times*, 26 February 1957; “Underwood Corporation Names a New Director”, *The New York Times*, 15 January 1957; “Personalities: Co-Pilots of the Lazard Fund; Chairman Hettinger”, *The New York Times*, 6 July 1958). “When it came to his investments, Meyer did trust one person implicitly: Albert J. Hettinger Jr” (Ellis and Vertin 2001).

⁴³ André Meyer, who ran Lazard after the war, and Enrico Cuccia, Mediobanca's founder, were allies and pioneers in modern financial engineering. In 1956, Lazard took a stake in Mediobanca and that connection basically meant that all Italian MNCs relied on Lazard for their international deals.

⁴⁴ Being the main Underwood's creditor, Chase Manhattan was especially interested in a positive closing of the acquisition: “Underwood had two term loans with the Chase Manhattan Bank that were shortly to become due. One was for US\$8 million, due in early 1961, and the other, also for US\$8 million, was due in late 1961. The Underwood company had no hope of being able to meet these obligations. With the guarantee of the parent Olivetti organization for 50% of the amount, the notes were renegotiated to fall gradually due up to late 1967” (“Statement by Mr. Gabetti” in Learned *et al.*, 1965, p. 236; see also ATIM, VCDAO, vol. V, *Verbale della seduta del Consiglio di Amministrazione del 29.04.1960*, p. 40 and *ibid.*, *Verbale della seduta del Consiglio di Amministrazione del 23.06.1960*, pp. 48-49). David Rockefeller also helped Gabetti for his appointment as Vice-Chairman of the Business machines association (Gianluigi Gabetti, personal communication, Turin, 30 October 2007).

order to consolidate its position.⁴⁵ Olivetti pointed the finger at unspecified “Swiss investment bankers”, but Wall Street did not believe these rumors.⁴⁶

The reactions in Italy differed. Italian monetary authorities were very sympathetic because they expected the new venture to create new export opportunities.⁴⁷ In October Olivetti asked Banca Commerciale Italiana, its *hausbank*,⁴⁸ which in November was authorized to lend, ITL 1 billion.⁴⁹ Olivetti then turned to Banca d’America e d’Italia for another ITL 1.25 billion credit line⁵⁰ and to other Italian banks for an additional ITL 2.2 billion.⁵¹ Similarly, the Banco di Roma management, as soon as they became aware of the operation, made its availability known.⁵² In addition, the Banco di Napoli agency in New York extended small bridge loans.⁵³

⁴⁵ ASO, DCUS, PV, fasc. 2281, coll. V-E-D-3-4, “Stipulato un accordo Olivetti-Underwood,” *Il Globo*, 3 October 1959; “Raggiunto l’accordo Olivetti-Underwood,” *Corriere mercantile*, 28 November 1959; “Favorevoli commenti in U.S.A. all’accordo Olivetti-Underwood,” *Il Sole*, 11 December 1959. In late November, more than 6.5% of Underwood stock was traded in seven sessions and “Wall street sources had reported that Olivetti was buying appreciable quantities of Underwood common stock. These sources said that this was being done to turn Olivetti’s already substantial interest in Underwood into undisputed control. An Olivetti representative, who also is an Underwood director, first declined comment on the Wall Street reports and then said that his organization did not deny them” (“Executive for Olivetti of Italy is Named Underwood President”, *The New York Times*, 25 November 1959).

⁴⁶ “Promemoria per il Signor Direttore Generale, 25.11.1959”, in ASBI, Segreteria Particolare, Delegazione di New York, cart. 1269.

⁴⁷ In early 1960 Italian currency authorities promptly authorized a US\$10m transfer (Gianluigi Gabetti, personal communication, 30 October 2007). See Ortona (1986).

⁴⁸ In February 1958 it turned out that Olivetti assigned to Banca Commerciale 58% of her turnover, although the credit institution only contributed to cover 23% of her debt load (Archivio Storico di Intesa Sanpaolo (ASI), patrimonio Banca Commerciale Italiana (BCI), Verbali del Comitato della Direzione Centrale (VCD), vol. 146, *Verbale della seduta del 04.02.1958*). Quickly Comit financing to Olivetti increased substantially, amounting in October 1959 to ITL3.1 billion and US\$ 240,000 (ASI, BCI, VCD, *Verbale della seduta del 19.10.1959*).

⁴⁹ ASI, BCI, VCD, vol. 160, *Verbale della seduta del 19.10.1959*. See also “Rapportino al governatore, n. 3454, 27.10.1959” in ASBI, Vigilanza; “Richiesta della Banca Commerciale Italiana alla Banca d’Italia per autorizzazione per fidi eccedenti, 24 ottobre 1959”, in ASBI, Vigilanza, cart. 9438, p. 481; “Richiesta della Banca Commerciale Italiana alla Banca d’Italia per autorizzazione per fidi eccedenti, 29 dicembre 1959”, in ASBI, Vigilanza, cart. 9438, p. 430.

⁵⁰ In addition to lines of credit of ITL 0.5 billion and CAN\$ 100,000; Olivetti brought 405,000 Underwood shares as collateral. See “Rapportino al governatore, n. 3477, 24.11.1959” in ASBI, Vigilanza; “Richiesta della Banca d’America e d’Italia alla Banca d’Italia per autorizzazione per fidi eccedenti, 21 novembre 1959”, in ASBI, Vigilanza, cart. 9501, p. 770; “Richiesta della Banca d’America e d’Italia alla Banca d’Italia per autorizzazione per fidi eccedenti, 24 ottobre 1960”, in ASBI, Vigilanza, cart. 9501, p. 968.

⁵¹ See “Rapportino al governatore, n. 3490, 10.12.1959”, “Rapportino al governatore, n. 3503, 28.12.1959”, “Rapportino al governatore, n. 3507, 2.1.1960”, “Rapportino al governatore, n. 3529, 29.1.1960” in ASBI, Vigilanza. Overall Olivetti’s banking debt load increased from ITL 10.3 billion in March 1959 to ITL 13.8 billion in February 1960 (see “Richiesta del Banco di Napoli alla Banca d’Italia per autorizzazione per fidi eccedenti, 25 gennaio 1960”, in ASBI, Vigilanza, cart. 9397, p. 75; “Richiesta della Banca Commerciale Italiana alla Banca d’Italia per autorizzazione per fidi eccedenti, 5 marzo 1959”, in ASBI, Vigilanza, cart. 9437, p. 264).

⁵² ASO, FCP, fald. 50, fasc. 531, coll. V-A-A-1-5, *Lettera di Giampaolo a Pero del 03.10.1959*.

⁵³ ATIM, VCDAO, vol. IV, *Verbale della seduta del Consiglio di Amministrazione del 21.12.1959*, p. 189. See also Gianluigi Gabetti, personal communication, 30 October 2007.

The media reacted with moderation. At p. 7, Milan's *Corriere della Sera* wrote about "an Italian-American agreement for two industrial organizations", while for Turin's *La Stampa* at p. 11 this was "an important agreement that opened up export opportunities".⁵⁴ Confindustria, the Italian Industrial Association, did not release any official statements, but the general feeling was allegedly of contempt⁵⁵ – not a surprising reaction since Adriano was one of the few Italian industrialists who had not joined the association. Trade unions were informed by Dino Olivetti on 2 October and reacted immediately through *Il Tasto*, the communist union FIOM newspaper. The agreement was considered potentially very positive to increase production, employment and salaries in Italy thanks to the inevitable technological advancement that would come out of it. But FIOM did not hide its concerns about a possible capital hemorrhage, at a time when signals were emerging of Olivetti's financial strains.⁵⁶

With respect to the consequences on market dynamics, *L'Unità* (the Communist party daily) identified a clear monopolistic pattern, while according to *Il Sole* (the Confindustria one) the goal to create new competition and benefit consumers shielded the merger from any risk of ban by the US antitrust authorities.⁵⁷ Taking Ivrea by surprise, the Federal Trade Commission launched an investigation.⁵⁸ Olivetti hired the lawyer Oscar Sidney Cox⁵⁹ (Ochetto 2009, p. 280) and, afraid of a negative outcome, slowed down its restructuring efforts. While the FTC applied the rule of the collapsing corporation theory and its final decision was favourable to the Italians, the delay proved expensive (Bricco 2005, p. 29; Semplici 2001, p. 101).

Olivetti managers had different appreciations of the local reaction. While "Galassi said he had met nothing but obstacles" in the US, according to Gabetti there was comparatively little nationalistic reaction.⁶⁰ An influential business magazine complimented Olivetti for

⁵⁴ "Accordo italo-americano per due complessi industriali" and "All'Olivetti il 35 per cento delle azioni dell'Underwood," respectively, both 3 October 1959, our translation.

⁵⁵ Confindustria's gossip was "Ivrea has married Hartford, so that IBM can swallow them both in one bite" (ASO, DCUS, PV, fasc. 2281, coll. V-E-D-3-4, E. Nobis, "Anche la piccola Ivrea può competere con gli USA," *Paese sera*, 23 December 1959, our translation).

⁵⁶ ASO, DCUS, PV, fasc. 2281, coll. V-E-D-3-4, M. Giovana, "A misura di padrone," *Mondo nuovo*, 8 November 1959.

⁵⁷ ASO, DCUS, PV, fasc. 2281, coll. V-E-D-3-4, "Accordo commerciale Olivetti Underwood," *l'Unità*, 3 October 1959; "Aggressività italiana," *24 ore*, 3 November 1959.

⁵⁸ ATIM, VCDAO, vol. V, *Verbale della seduta del Consiglio di Amministrazione del 29.04.1960*, pp. 39-40. See also ASO, DCUS, Terzo Versamento (TV), fasc. 851, coll. V-C-N-1-5, "When a European firm opens up in U.S.," *U.S. News and World Report*, 23 July 1962.

⁵⁹ A government career man since 1938, Oscar Cox was defined as "the smartest damn lawyer in Washington" by *Time* in 1942 ("Roll of Honor," 10 August 1942). After WWII the law firm of Oscar Sidney Cox, of Lend-Lease fame, was lobbying for Fiat in Washington. On 14 July 1948, when Communist Party leader Palmiro Togliatti was shot in Rome and workers seized the Mirafiori plant in Turin, Cox was in a meeting with Valletta (Bairati 1983, p. 199). Cox was also the technical advisor to the Delegazione tecnica italiana (Deltec), a body set up by the Bonomi government in Washington in April 1945 to accompany decisions on American support to the reconstruction. In this guise he drafted the 1947 Exim bank loan (Segreto 2000).

⁶⁰ "New Era Begins for Underwood," *The Machinist*, 6 April 1961 and "Probe into the World of Ideas with Gianluigi Gabetti," *Columbia Journal of World Business*, September-October 1967, respectively. See also *The New York Times*, 25 November 1959; *Fortune*, September 1960; *The New York Times*, 11 January 1961.

moving to “create an internationally owned firm that can give the only firm answer to nationalistic hostilities and the problem of being labeled ‘foreign’”.⁶¹ Italo Calvino, the Italian novelist, wrote a letter from New York in November 1959 mentioning the favorable reactions to the operation.⁶² Nor did the fact that the new owners were Italians raised any eyebrows – although difficult to substantiate, the fact that per capita Connecticut has more residents claiming to be of Italian origin than any other state in the nation may have played a role.⁶³

Before turning to the implications of the merger, some data help in defining its importance. In 1959 Underwood was employing about 10,000 people (43.8 per cent of which overseas) for sales of US\$ 75.4 million (down from US\$ 85.2 in 1957; see tab. 2).⁶⁴ That year, Olivetti-Italy had sales of US\$ 36.1 million and 26,600 employees, 44.2 per cent of them abroad (see tabs. 1 and 3).⁶⁵ Well over half of Olivetti Group’s production was sold in foreign countries, through 19 subsidiaries (US\$ 15 million for OCA) and 101 commercial branches.⁶⁶

6. A substantial restructuring

Adriano Olivetti’s vision was clear – “within five years, [the US] would achieve scientific, industrial and cultural advancements that would take Italy twenty five years to match” (according to Gabetti in Bricco 2005, p. 28, our translation). Being present in America was therefore a great opportunity to learn and acquire new competencies, obviously on top of the fact that Underwood had an extensive, well-established commercial network.⁶⁷ Moreover, being the owner of a plant in the US, even if obsolete, qualified the company as a

⁶¹ “The Olivetti-Underwood Move: Milestone in Corporate Internationalization,” *Business International*, 23 October 1959. At the time the government was working to attract European and Japanese manufacturers to build plants in the US (“Foreign capital moves toward U.S.,” *BusinessWeek*, 29 July 1961; “Editorial – Help Wanted,” *The Machinist*, 6 April 1961 and “Editorial – Invitation,” *The Machinist*, 19 July 1962).

⁶² “*Qui in queste settimane si parla molto di Olivetti; Adriano è stato qui come saprai ed è ora padrone del pacchetto d'azioni che controlla la Underwood. Ora la Olivetti produrrà in America sotto il nome di Underwood e la sua attuale popolarità nelle élite che è già forte diventerà (senza più l'ostacolo del nome italiano e senza più impacci doganali) una popolarità di massa. Naturalmente se riesce a tirare su la baracca della Underwood che andava a rotoli e a tenere testa, stavolta nel mercato interno americano, alla Remington. Comunque mi pare che per l'industria italiana sia una data storica. E per Adriano che tornerà vincitore in azienda*” (“Lettera a Giulio e Renata Einaudi, New York, 22 novembre 1959”, in Baranelli 2000).

⁶³ See “The Most Italian State in the Nation? Guess,” *The New York Times*, 30 December 2001 (interestingly, the article makes no mention of Olivetti-Underwood among the factors that mark Italian influence in the state).

⁶⁴ Underwood had production facilities in Canada, West Germany, England and Italy and assembly lines in Chile and Colombia. See “Olivetti Officials speaks on International and Italian-US Trade Outlook, 21 February 1960”; ASO, DCUS, fasc. 710, coll. V-C-N, “La Underwood si preoccuperà di vendere,” undated; ASO, DCUS, PV, fasc. 2281, coll. V-E-D-3-4, “La Olivetti acquista il 35% della Underwood,” *24 ore*, 3 October 1959.

⁶⁵ The data on Olivetti group sales did not include foreign subsidiaries’ turnover, but only sales of the Italian Olivetti to foreign subsidiaries. Foreign subsidiaries’ turnover was augmented by higher selling prices and by directly manufactured products.

⁶⁶ *Relazione del Consiglio di Amministrazione dell'Olivetti all'Assemblea Generale degli Azionisti*, 25 February 1960, in ASO, coll. V-USG-2-1-2.

⁶⁷ *Nota interna sull'operazione Olivetti-Underwood*, undated, p. 1, in ASO, DCUS, FVT, RSC, fasc. 710, coll. V-C-N.

“national manufacturer” and opened access to public tenders (de Witt 2005, p. 98). A further motivation was the urgency to make up for any possible loss of market share in Europe that would have been produced by the creation of the European Economic Community. Olivetti reckoned that the removal of the high tariff barriers it enjoyed in Italy (20 per cent for typewriters, 20 per cent for the adding machines and 18 per cent for the writing calculators) would have benefitted German competitors.⁶⁸

The original agreement stipulated that Underwood and Olivetti would “work closely in every stage of research and development of products and technologies, and advancement of technical and production technologies.”⁶⁹ The ink had barely dried that Olivetti began placing its people in the Board of Directors.⁷⁰ Paolo Rogers, Gianluigi Gabetti, Luigi Gandi, Guido Santi and Guido Treves from Italy, as well as Manly Fleischmann of Webster Sheffield & Fleischmann and Ethan A. Hitchcock (an attorney who had been with OCA since 1950) as chairman of the board.⁷¹ The “bankers” remained on the new Underwood’s board.⁷² Frank E. Beane remained President until December, when Ugo Galassi replaced him.⁷³ From the U.S. headquarters at One Park Avenue, the former PepsiCo building, Galassi, who had led Olivetti sales and foreign subsidiaries network since the early 1950s, named Guido Lorenzotti as executive vice-president and Gianluigi Gabetti as financial director. In fact, from the very beginning Underwood was run by a young Italian team (Gemelli and Squazzoni 2003, p. 167).⁷⁴

In the Olivetti executives’ diagnosis, Underwood lacked new competitive models and the easy solution was to offer Olivetti calculators and book-keeping equipment.⁷⁵ Still, this meant expensive and radical changes to the marketing structures and significant adjustments to the production processes.⁷⁶ In April 1960, Olivetti increased its stake in Underwood to 69

⁶⁸ ATIM, VCDAO, vol. IV, *Verbale della seduta del Consiglio di Amministrazione del 14.04.1959*, p. 140.

⁶⁹ ASO, DCUS, FVT, RSC, fasc. 710, coll. V-C-N, *Relazione interna sull’operazione Olivetti-Underwood*, undated, our translation.

⁷⁰ ATIM, VCDAO, vol. V, *Verbale della seduta del Consiglio di Amministrazione del 09.02.1960*, p. 7.

⁷¹ Olivetti could appoint eight directors and confirmed one Underwood executive. Manly Fleischmann was a renowned attorney with an impressive record of public service with President Truman (in particular as Defence Production Administrator for the Korean Conflict) and New York Governor Nelson Rockefeller (as chair of the State Commission on the Quality, Cost and Financing of Elementary and Secondary Education, known as the Fleischmann Commission). See http://en.wikipedia.org/wiki/Manly_Fleischmann (accessed 26 June 2009). Ethan Allen Hitchcock, remained with the Olivetti group until 1978 (“Ethan A. Hitchcock, 91, Lawyer and Civic Leader”, *The New York Times*, 22 November 2000).

⁷² Selden, Clarkson, Schley, and Hettinger kept their positions, while Philip Isle, a Lehman Bros. partner, replaced Thomas, who had promoted Underwood’s competing deal with Litton.

⁷³ ASO, coll. V-H-18-1, “Prospettive e impegni della nostra Società dopo l’accordo con la Underwood,” *Notizie Olivetti*, October-November 1959, p. 2 and “Il dott. Galassi nuovo Presidente della Underwood Corporation,” *Notizie Olivetti*, December 1959, p. 14; ASO, DCUS, PV, fasc. 2281, coll. V-E-D-3-4, “Favorevoli commenti in U.S.A. all’accordo Olivetti-Underwood,” *Il Sole*, 11 December, 1959; “L’Olivetti negli Stati Uniti,” *L’informazione industriale*, 17 December 1959. See also de Witt 2005 and Bricco 2005, p. 29.

⁷⁴ Galassi was then 47-year old, Gabetti 36 and Lorenzotti 31.

⁷⁵ “Relazione sull’esercizio chiuso al 31 dicembre 1959, Olivetti”, p. 20, in ASBI, *Raccolte diverse - Relazioni e Bilanci*, cart. 1326.

⁷⁶ “Olivetti management radically modified all of Underwood’s obsolete systems and processes and built new assembly lines in Hartford, CT, dumping production of outdated calculators” (ASO, DCUS, PV, fasc. 1532,

per cent, trading more than US\$ 30 million worth of Underwood common stock in exchange for Olivetti Corporation of America.⁷⁷ Nominally for free, although in practice Olivetti paid the newly-issued 1,200,000 Underwood shares with “the subsidiary’s tangible properties and a long-term exclusive franchise to sell Olivetti products in the US and Canada with Underwood brand”, as well as “the right to financial, technical” and managerial assistance.⁷⁸

Hartford was a very outdated and inefficient facility – for example, spare parts were stored in a basement and damaged by oil and grease dripping from machinery.⁷⁹ Galassi modernized the plant, improved inventory management, halted production of mechanical book-keeping machines and portable typewriters, streamlined production items from 15 to four, and stopped bidding for low-profit defense contracts.⁸⁰ The new management “set a stable volume of production for each product [...] a traditional Olivetti policy” and “completely refurbished the inside of the plant”, introducing conveyors and specially designed special-purpose machines.⁸¹ Production costs were cut by 30 per cent.⁸² In six months the daily typewriters output at Hartford went from 300 to 818 units and after a few years four workers could do the job that at Underwood required 21.⁸³ Transfer of knowledge

coll. V-E-D-2-3, “Un piano della Olivetti per salvare la Underwood,” *Corriere mercantile*, 18 June 1960, our translation). Pero declared that “plants and equipments had to be demolished and replaced to a greater extent than expected [...] the serious deficiencies of the inner organization and commercial structure have forced Olivetti’s technicians and managers to an enormous reorganizing effort, lengthy and complex because of a smaller ductility of the American staff in comparison to ours” (ASI, BCI, VCD, vol. 173, *Verbale della seduta dello 07.11.1961*, p. 125, our translation).

⁷⁷ ATIM, VCDAO, vol. V, *Verbale del Consiglio di Amministrazione del 29.04.1960*, p. 39. See also ASO, DCUS, PV, fasc. 1532, coll. V-E-D-2-3, “Il consiglio della Underwood approva l’accordo con la Olivetti,” 24 ore, 13 April 1960; “Note sulla settimana 6-12 giugno – Riservata”, in ASBI, Segreteria Particolare, Delegazione di New York, cart. 1270.

⁷⁸ See “Underwood Board Approves Olivetti Subsidiary Purchase”, *The Daily American*, 15 April 1960; “Conseguenze dell’accordo Underwood-Olivetti”, *Corriere Mercantile*, 16 April 1960; “Accordo a New York tra la Underwood e la Olivetti”, *La Stampa*, 1 July 1960, all in ASO, Fondo Ufficio Stampa (from here onwards FUS).

⁷⁹ Alberto Vitale, personal communication, 7 July 2009.

⁸⁰ “Each of the products in the Underwood line was subject to a critical review [...] most of them were judged simply not competitive. [...] On most of them, the cost was not only higher than on competitive US machines, but also higher than the price at which Underwood could acquire Olivetti’s more modern products” [“Interview with Mr. Gabetti” in Learned *et al.* (1965), pp. 243-244]. “[T]hose products which were the best and which were not the best export products of Olivetti” were chosen [“Interview with Mr. Gandi” in Learned *et al.* (1965), pp. 239-240]. See also “Relazione sull’esercizio chiuso al 31 dicembre 1961, Olivetti”, p. 31, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

⁸¹ “Interview with Mr. Gandi” in Learned *et al.* (1965), pp. 242-243.

⁸² “Why Management Is Missing the Boat To Foreign Markets,” *The Machinist*, 5 October 1961. Notwithstanding the realized cost savings, producing a typewriter in America was costing 30% more than in Italy: the cost of Underwood staff was nearly double that of Ivrea factory, but the presence in the US of significant scale economies and lower raw materials, transportation and electricity costs, made the cost differential lower and equal to 30% (ASO, DCUS, TV, fasc. 851, coll. V-C-N-1-5, “When a European firm opens up in U.S.,” *U.S. News and World Report*, 23 July 1962).

⁸³ See “Relazione sull’esercizio chiuso al 31 dicembre 1961, Olivetti”, pp. 25-26 and 29, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326; “Un piano della Olivetti per salvare la Underwood”, *Corriere Mercantile*, 18 June 1960.

and machinery from Ivrea played no small part in this overhaul.⁸⁴ Production of a new line of typewriters (Raphael) began in Hartford in 1961 and a full-page advertisement in 98 daily newspapers suggested that the management was optimistic about a return to normality.⁸⁵ Some foreign plants were sold in order to rationalize production and marketing.⁸⁶

In contrast to the attention given to shop floor and engineering improvements,⁸⁷ the Italian management did not “feel the need at this time for adventurous change”.⁸⁸ Galassi closed the Underwood laboratories,⁸⁹ prelude to the 1963 decision to reduce the participation in New Canaan Research Center Inc. (which then had a book value of US\$ 1 million) to zero.⁹⁰

From 1960 on, the Underwood and OCA organizations were integrated in North America and Canada. Underwood adopted Olivetti sales strategy, characterized by direct, intensive and capillary presence.⁹¹ The Sales Department was reorganized and dealerships chosen more rationally.⁹² The new network consisted of 130 branches with 2,000 specialized salesmen, 850 independent (but exclusive) agents and over 5,000 dealers.⁹³ The first two channels exclusively sold typewriters and bookkeeping machines, while portable machines

⁸⁴ According to Gabetti, “Olivetti’s know-how and machinery” were used to modernize the Hartford plant (“Olivetti-Underwood, Un’operazione rischiosa che si è tramutata in un grosso affare”, *Espansione*, July 1970, p. 55, in ASO, DCUS, PV, fasc. 1532, coll. V-E-D-2-3).

⁸⁵ “New Era Begins for Underwood,” *The Machinist*, 6 April 1961.

⁸⁶ Underwood sold its German subsidiary, Adrema Werke, to Pitney-Bowes for US\$ 2 million (“Ceduta la Underwood tedesca”, *Merci e mercati*, 20 April 1961, in ASO, DCUS, PV, fasc. 1532, coll. V-E-D-2-3). The English factory was closed in 1963 and production centralized in the Olivetti plant in Scotland (“Relazione sull’esercizio chiuso al 31 dicembre 1963, Olivetti”, p. 33, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326).

⁸⁷ “In engineering, we are now working on redesign in two directions. One group is working on redesign for cost reduction. We have now in product design, tool design, and process design 100 people in our engineering group working on cost reduction. The second group is working on redesign for quality improvement” [“Interview with Mr. Gandi” in Learned *et al.* (1965), p. 243].

⁸⁸ “Statement by Mr. Galassi” in Learned *et al.* (1965), p. 255.

⁸⁹ “Olivetti-Underwood, Un’operazione rischiosa che si è tramutata in un grosso affare”, cit., p. 55. See also Gribbin and Krogfus (1960); *The Financial Times*, 26 Feb. 1960, p. 13.

⁹⁰ “Relazione sull’esercizio chiuso al 31 dicembre 1963, Olivetti”, p. 40, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

⁹¹ “Statement by Mr. Gabetti, Vice President and Treasurer of Underwood” in Learned *et al.*, 1965, p. 234). Up to that point, implementing its concept in sales organization, Olivetti was able to succeed in his most ambitious worldwide sales program (“Relazione sull’esercizio chiuso al 31 marzo 1959, Olivetti”, p. 27, in ASBI, Banca d’Italia, Raccolte diverse - Relazioni e Bilanci, cart. 1326).

⁹² “Relazione sull’esercizio chiuso al 31 dicembre 1960, Olivetti”, p. 17, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

⁹³ “Relazione sull’esercizio chiuso al 31 dicembre 1961, Olivetti”, p. 29, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326. “Our first step was to prepare a census of the machine population of the country. [...] Wherever the results of the census indicated the need for a direct sales force, a branch was established or maintained. Each branch was in turn staffed with the number of salesmen required to serve the potential of the market – rather than the current level of sales. This has involved screening thousands of job applicants, hiring those that met our high standards, training them” [“Statement by Mr. Galassi” in Learned *et al.* (1965), p. 256]. “The average seniority of my salesmen today is about eight months” [“Interview with Mr. Galassi” in Learned *et al.* (1965), p. 237].

(sold under the Underwood-Olivetti brand) were reserved to dealers. Great attention was given to the training of the branch directors “on the basis of a crash program which started by bringing to the United States a group of Olivetti instructors from the Olivetti Training Center in Florence” (Peccei 1966).⁹⁴ A new Customer Engineering Service was also developed.⁹⁵ Galassi could thus express in 1961 his “absolute confidence in our selling methods”, although he had to admit “the only question is, will they work in the U.S. market?”⁹⁶

Industrial relations could be a source of problems – in fact staff was laid off for five-months⁹⁷ and total employment (excluding independent sales agents and dealers) was drastically reduced (mainly abroad) from an all-time high of 12,000 in 1961 to 6,500 in 1964. The new management paid active attention not only to production and organizational issues, but also to introduce the Olivetti philosophy to the US factories. This “made a big impression on Underwood employees when [Galassi] told *The Machinist* that his company was more interested in “people value than in share value”.⁹⁸ In 1962 a new union shop agreement was signed for the 3,100 employees that contained 163 improvements over the previous one and was in fact welcomed by the manager of IAM District 26 as “one of the best agreements we have negotiated in a long time.”⁹⁹ The union’s enthusiasm was so great that Olivetti was repeatedly cited as the best example of the benefits that foreign investment could bring to the US economy.¹⁰⁰

The 9,000,000th Underwood typewriter was produced sometime in mid-1962 and, in a typical Olivetti gesture, was offered to IAM President during a ceremony at the trade union’s headquarters in Washington. By then the company reckoned it had produced every third typewriter in the industry’s history in the US.¹⁰¹ Visiting the Hartford plant in March 1962, Secretary of Commerce Luther Hodges declared his admiration for the state-of-the-art facilities, underlining how Olivetti-Underwood partnership was an example to be followed

⁹⁴ The reference is to the famous Florence School of Management and Marketing (Novara *et al.* 2005, p. 532). The total investment in training and recruiting hovered around US\$9 million [“Interview with Mr. Galassi,” in Learned *et al.* (1965), p. 238]. The Hartford Training Center suffered from various problems: it was managed by the personnel department and not the marketing one, lacked performance measurement instruments, employed outdated teaching methods and the instructors were not qualified (ASO, DCUS, TV, fasc. 849, coll. V-C-N-1-5, *Rapporto sull’organizzazione del Training Center di Hartford del 13.06.1961*).

⁹⁵ ASO, DCUS, FVT, RSC, fasc. 710, coll. V-C-N, A. Barrett, E.P. Learned, *Rapporto sulla Olivetti Underwood Corporation*, cit., pp. 5-14; Ibidem, *Relazione interna sulla Olivetti in U.S.A.*, undated.

⁹⁶ “Interview with Mr. Galassi” in Learned *et al.* (1965), p. 238.

⁹⁷ “New Era Begins for Underwood,” *The Machinist*, 6 April 1961.

⁹⁸ “Employees at Underwood win justice through union,” *The Machinist*, 11 May 1961. By 1961 salaries had risen by 10% (“Sotto la direzione di italiani risorge un’industria americana,” *Il lavoro italiano*, 29 April 1961, in ASO, DCUS, PV, fasc. 1532, coll. V-E-D-2-3).

⁹⁹ “Improvements written at Underwood Typewriter,” *The Machinist*, 2 August 1962. Democrat Joseph V. Cronin was Mayor of Hartford in 1951-53 and 1955-57, returning then to his IAM duties.

¹⁰⁰ At the 1960 IAM convention, Cronin contrasted favourably the behaviour of Olivetti with Remington-Rand’s announcement of moving production from Elmira to plants abroad (“IAM Seeks to Curb Export of U.S. Jobs,” *The Machinist*, 22 September 1960).

¹⁰¹ “The 9,000,000 Underwood,” *The Machinist*, 6 September 1962.

by a US industry too restricted by domestic endeavors: “we can obtain ingenious ideas from other countries’ people”.¹⁰²

In order to secure the managerial flexibility and freedom of action required for a complete corporate renovation, in May 1963 Olivetti offered to purchase minority stockholders’ shares, considering this as “essential in order to further reduce and ultimately to eliminate Underwood losses”.¹⁰³ During a three-year period, Olivetti invested US\$ 92 million in stock purchases, long-term loans, and product credits. Unable to foresee any substantial improvement in Underwood’s earnings situation which would relieve its financial condition and need for further aid, Olivetti found it necessary to protect its own position and accordingly announced its offer to purchase Underwood’s minority shares.¹⁰⁴ By April 1964, the company was holding 90 per cent of Underwood stock and incorporated the company in Delaware as Olivetti Underwood Corporation.¹⁰⁵

In 1960 Underwood sold less than in 1959 (US\$ 76 million), but the rewards of succeeding were great – Underwood had a tax-loss carry-forward of at least US\$ 25 million that could be applied against earnings – and Galassi expected to reach the break-even point in the first quarter of 1961.¹⁰⁶ The contribution of Olivetti products was very substantial and the US share of exports from Italy rose correspondingly (see tab. 1, fig. 2).¹⁰⁷ However “Underwood practically [did] not benefit from the sale of the Olivetti products (the parent company invoice to all the subsidiaries so as to leave them only modest margins to cover variable commercial costs), while being loaded with all fixed costs of the marketing organization and sales network”.¹⁰⁸ In a sign of renewed confidence, it established a management program for qualified holders of graduate degrees and started on-campus recruiting at prestigious East Coast universities.¹⁰⁹ U.S. sales returned to US\$ 117 million in

¹⁰² ASO, DCUS, PV, fasc. 1532, coll. V-E-D-2-3, “Il ministro USA del commercio visita la Underwood”, 24 ore, 22 March 1962; “La Olivetti-Underwood”, 8.4.1970, ASO, DCUS, fasc. 710.

¹⁰³ ATIM, VCDAO, vol. VI, *Verbale del Consiglio di Amministrazione del 17.05.1963*, pp. 21-25, our translation. See also original company statement reproduced in “Olivetti and Underwood,” *The Economist*, 1 June 1963.

¹⁰⁴ Learned *et al.* (1965), p. 261. See also “Notizie sulla Ing. C. Olivetti & C., Ivrea, giugno 1963”, p. XII, in ASBI, *Raccolte diverse - Relazioni e Bilanci*, cart. 1326). The terms of the buyout of minority investors were controversial, leading to a famous 1966 ruling by the Delaware Supreme Court. In *Olivetti Underwood Corp. v. Jacques Coe & Co.*, 217 A.2d 683, the Delaware Supreme Court considered whether a corporation had “the right to require each broker-petitioner to prove, as a prerequisite to the statutory right of appraisal, that it was duly authorized by the beneficial owner of the stock, registered in its name, to seek the appraisal.” It held that “corporations ought...to...look to the corporate books as the sole evidence of membership,” finding that the only recognizable stockholder for purposes of Section 262 is the “registered stockholder.” Only stockholders of record are entitled to pursue appraisal rights. Beneficial owners and holders of stock options therefore lack standing to pursue an appraisal.

¹⁰⁵ “Olivetti’s crisis of identity,” *Fortune*, July 1967.

¹⁰⁶ ATIM, VCDAO, vol. V, *Verbale del Consiglio di Amministrazione del 20.12.1960*, p. 71.

¹⁰⁷ See “Relazione sull’esercizio chiuso al 31 dicembre 1960, Olivetti”, p. 17, in ASBI, *Raccolte diverse - Relazioni e Bilanci*, cart. 1326; “Relazione sull’esercizio chiuso al 31 marzo 1959, Olivetti”, p. 26, in ASBI, *Raccolte diverse - Relazioni e Bilanci*, cart. 1326; “Relazione sull’esercizio chiuso al 31 dicembre 1959, Olivetti”, p. 21, in ASBI, *Raccolte diverse - Relazioni e Bilanci*, cart. 1326.

¹⁰⁸ ASI, BCI, VCD, vol. 173, *Verbale della seduta del 07.11.1961*, p. 125, our translation.

¹⁰⁹ See classified in *The Hoya*, 28 February 1963, p. 9.

1963 — and closer to balance for the first time under the new ownership (although Galassi had expected to see a return to profits by 1962; see tab. 2, fig. 3).¹¹⁰ To sanction the end of the restructuring period, Ugo Galassi was called back to Italy in April 1963 and replaced by Guido Lorenzotti with Gianluigi Gabetti as Executive Vice President.¹¹¹ Under Lorenzotti, who at 34 was one of the youngest corporate heads in the United States, Underwood claimed “to be the industry kingpin in both adding machines and calculators, and No. 2 behind IBM in sales of full-featured office electric typewriters”.¹¹²

7. Underwood and the Olivetti financial crisis

Major problems were however brewing across the Atlantic. In February 1960, Adriano died of a heart attack, aboard a train in Aigle, Switzerland. He left behind an unresolved governance structure and an equally unclear social mission, but also a brand name with a value probably unparalleled among Italian, if not European, firms. Directors passed over Olivetti’s son Roberto and several other Olivetti family members to elect Giuseppe Pero, then 66 years old, President and CEO. Pero, who had been Olivetti’s general director since 1938, let Adriano’s political adventures die, devoting all his efforts strictly to business. His death in late 1963 exacerbated the governance crisis. In Ivrea, the co-directorship of Roberto Olivetti and his cousin Camillo proved highly ineffective to cope with the new difficulties and to decide promptly on the need to seek external support. Also, competitive pressures from Japan forced export prices down and cut margins, a heavy burden for a firm that at the time sold more than two-thirds of its production abroad.¹¹³

If the costs of redressing Underwood were considerable (see below), the electronics division had experienced severe problems due to the death of Adriano first and of Mario Tchou, chief of electronic research, in a car accident in 1961. Olivetti found itself undercapitalized and overexposed when an economic slowdown – not only in Italy but also in Latin America – caused a steady deterioration of the company’s finances.¹¹⁴ Eventually, in May 1964 a rescue syndicate comprising Fiat, Pirelli, La Centrale and two state-owned banks, Mediobanca and IMI, invested US\$ 50 million into Olivetti’s stock, appointed Aurelio Peccei, a rising Fiat executive, as managing director, and picked IRI vice president Bruno Visentini as the first man outside the Olivetti family ever to head it.¹¹⁵

Did the cost of the acquisition and of the immediate restructuring cause Olivetti’s financial distress? On the one hand, the balance of the consolidation and restructuring of Underwood came close to US\$ 100 million and contributed to the almost five-fold increase

¹¹⁰ This represented a third of Olivetti global 1963 sales of US\$ 360 million (“The Destiny of Dynasties,” *Time*, 17 April 1964).

¹¹¹ ASO, DCUS, PV, fasc. 1244, coll. V-E-D-2-2, “Underwood,” *Corriere d’informazione*, 25 April 1963 and 24 ore, 19 April 1963.

¹¹² “Switching to a black ribbon,” *BusinessWeek*, 24 October 1964.

¹¹³ “Olivetti in trouble,” *The Economist*, 28 March 1964.

¹¹⁴ Import restrictions in Argentina, traditionally one of Olivetti’s main markets, almost completely cut off an attempt to ship in other machines, while in Brazil hyperinflation ate up profits. See “Relazione sull’esercizio chiuso al 31 dicembre 1964, Olivetti”, p. 30, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹¹⁵ See “Lettera di Bruno Visentini a Giorgio Bo, Ministro delle Partecipazioni Statali” in ASBI, Direttorio-Carli, cart. 36, fasc. 18, 12 April 1964; ATIM, VCDAO, vol. VI, *Verbale della seduta del Consiglio di Amministrazione del 15.05.1964*, pp. 102-103.

in bank debts from US\$ 7.6 million to US\$ 32.5 million between 1958 and the end of 1963. By then the subsidiary's net worth was *minus* US\$ 8,681,000.¹¹⁶ On the other hand, the takeover certainly imposed a radical change in the nature of the company, from a big family firm to a quasi-public company with more structured corporate governance.¹¹⁷ This was probably going to occur anyway, although the process was accelerated and deepened by the Underwood affair.

In mid-1959 Olivetti had already issued listed bonds for ITL 3 billion, earmarked for productive and commercial expansion, particularly exports.¹¹⁸ This already posed the issue of opening to the market the equity capital of a large, international company, something that Comit had clearly identified as a potential weakness for Olivetti.¹¹⁹ In fact when the exposure to the banks rose dramatically later in the year with the Underwood acquisition, management recognized the need to react swiftly with a share issue destined to the market.¹²⁰ In early 1960, Olivetti issued ITL 10 billion-worth of privileged shares and sought listing on the Milan stock market.¹²¹ There was little doubt as to the destination of the new funds: "to give a stable settlement to the acquisition and to obtain the funds necessary for the effective exploitation of the greatly increased market opportunities".¹²² Financial markets reacted favorably and analysts saw a direct link between the good performance of Olivetti stock in Milan and of Underwood stock in New York.¹²³ Hence the decision to seek

¹¹⁶ "What Happened to Underwood," *Fortune*, May 1971.

¹¹⁷ In this period various members of the Olivetti family borrowed from Italian and foreign banks in order to subscribe the new capital issues and maintain their controlling share (ASI, BCI, VCD, vol. 182, *Verbale della seduta del 21.03.1963*; Nerio Nesi, personal communication; see also ASI, BCI, Carte di Raffaele Mattioli, Corrispondenza A-Z (CM), fasc. Olivetti, *Rapporto Olivetti, s.d.*). "The family had cornered itself into its own financial crisis. The company's mounting debts and reinvested profits had not been enough to finance expansion. Unwilling to give up control of the company to outsiders, and afraid to let one branch of the family get more shares than another, the six family branches subscribed most of the capitalization increases themselves [...] To raise the money, they borrowed from banks, putting up their stock as security. But as the value of Olivetti's stock plummeted with the whole Italian stock market, the banks began pressing the family to put its financial house in order" ("Why GE is Joining Olivetti", *BusinessWeek*, 12 September 1964).

¹¹⁸ ATIM, VCDAO, vol. IV, *Verbale della seduta del Consiglio di Amministrazione del 15.12.1958*, pp. 110-111. Olivetti committed to issue bonds in Milan and Turin (ATIM, VCDAO, vol. IV, *Verbale della seduta del Consiglio di Amministrazione del 28.02.1959*, p. 126). See also "Memoria del Servizio Vigilanza per la riunione del CICR del 9.4.1959", in ASBI, Vigilanza, Memorie Cicer, cart. 16; "Verbale della riunione del CICR del 9.4.1959", in ASBI, Vigilanza, Verbali Cicer, cart. 5a.

¹¹⁹ ASI, BCI, VCD, vol. 146, *Verbale della seduta del 04.02.1958*; *Ibidem*, vol. 155, *Verbale della seduta del 28.11.1958*.

¹²⁰ Pero had pushed for listing since late 1958, but it was only after the Underwood acquisition that this was accepted (ATIM, VCDAO, vol. IV, *Verbale del Consiglio di Amministrazione del 15.12.1958*, p. 111 and *Ibidem*, *Verbale del Consiglio di Amministrazione del 14.04.1959*, pp. 141-143. See also ASO, DCUS, FVT, RSC, fasc. 710, coll. V-C-N, *Nota interna sull'operazione Olivetti-Underwood*, undated, p. 3).

¹²¹ ATIM, VCDAO, vol. V, *Verbale del Consiglio di Amministrazione del 09.02.1960*, pp. 8-9. See also "Relazione sull'esercizio chiuso al 31 dicembre 1959, Olivetti", pp. 31 and I, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹²² "Relazione sull'esercizio chiuso al 31 dicembre 1959, Olivetti", pp. 20 and 31, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326, our translation.

¹²³ "Depuis quelque temps, l'action Underwood a marqué une hausse sensible en bourse de New York. Les actions Olivetti ont été introduites à la bourse et ont tout de suite trouvé de nombreux amateurs parmi les

listing in Geneva, Frankfurt, Paris and New York, in order to broaden “the possibilities of access to international financial markets, in coherence with its size and prestige of global company”.¹²⁴ Late in 1962, Olivetti ranked ninth among all foreign stocks held by U.S. investment companies.

In February 1961 Olivetti decided on a new capital increase, accompanied by a bond issue, for a total of ITL 35 billion. In the preliminary documentation prepared for the Bank of Italy Governor in March, staff put in evidence that ITL 30 billion was destined to finance Olivetti foreign investments and asked how this accumulation of share issuance was compatible with family ownership.¹²⁵ Again in 1962, Olivetti was compelled to issue ITL 15 billion in 18-year bonds (in June) and ITL 32 billion in new shares (in October).¹²⁶ Once again, the financial implications of the US adventure were spelled out: “an investment program for the 1962/63 biennium for a total of ITL 101 billions, necessary to exploit the results of the reorganization of the Underwood” and “to develop a more extensive and systematic production in the electronic field”.¹²⁷

This was a period of crisis for the Italian stock exchange, which hit Olivetti harder to the problems at Underwood, then in the process of being delisted.¹²⁸ Analysts were concerned that the Italian capital markets did not offer the possibility of financing the needs of Olivetti,

épargnants. Le titre est monté de près de 300% par rapport aux premiers cours enregistrés sur le marché” (“Bourse Italienne - De 23 au 27 mai”, *Journal de Genève*, 31 May 1960).

¹²⁴ See “Relazione sull’esercizio chiuso al 31 dicembre 1960, Olivetti”, p. 18, our translation; “Relazione sull’esercizio chiuso al 31 dicembre 1961, Olivetti”, p. 27, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326; *Journal de Genève*, 21 January 1961, p. 6; *The Financial Times*, 27 February 1961, p. 14, 17 May 1961, p. 12 and 9 June 1961, p. 5. Olivetti privileged stock had already been sold on the Swiss market as bearer certificates (*Journal de Genève*, 2 September 1960, p. 5). American deposit receipts for the preferred were issued in August 1960 (“The Olivetti Touch – It Has Won World-Wide Acclaim for the Italian Maker of Office Machines”, *Barron’s*, 31 July 1961), while ordinary shares were listed in Geneva in 1966 (*Journal de Genève*, 20 July 1966, p. 6). The group’s Luxembourg-based financial holding, Olivetti International, was established in 1961 to hold investments in subsidiaries and affiliated companies, provide finance and guarantees to group affiliates and manage other investments and cash funds. Italian currency authorities were interested in the quota of foreign underwriters to Italian companies’ capital stock increases, when the proceeds of the stock issue were going to be invested abroad (“Verbale della riunione del CICR del 5.10.1961”, in ASBI, Vigilanza, Verbali Cicr, cart. 8a), in a period of intensified illegal capital exports and the Italian balance of payments under strain (Barbiellini Amidei and Impenna 1999).

¹²⁵ See “Memoria del Servizio Vigilanza per la riunione del CICR del 1.3.1961”, in ASBI, Vigilanza, Memorie Cicr, cart. 19; “Verbale della riunione del CICR del 1.3.1961”, in ASBI, Vigilanza, Verbali Cicr, cart. 7a; “Memoria del Servizio Vigilanza per la riunione del CICR del 5.10.1961”, in ASBI, Vigilanza, Memorie Cicr, cart. 22; “Verbale della riunione del CICR del 5.10.1961”, in ASBI, Vigilanza, Verbali Cicr, cart. 8a.

¹²⁶ See “Relazione sull’esercizio chiuso al 31 dicembre 1961, Olivetti”, pp. 60-61, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326; “Relazione sull’esercizio chiuso al 31 dicembre 1962, Olivetti”, pp. 19-20 and 53-58, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹²⁷ The “investment in the form of shipment of goods and in the form of Group’s direct financing to the Underwood” was expected to be around ITL18 billion and three new plants were planned in Italy (see “Memoria del Servizio Vigilanza per la riunione del CICR del 16.5.1962 – Olivetti, aumento di capitale” and “Memoria del Servizio Vigilanza per la riunione del CICR del 16.5.1962 – Olivetti, emissione obbligazionaria”, in ASBI, Vigilanza, Memorie Cicr, cart. 24, our translation).

¹²⁸ See “Chronique des Bourses”, *Journal de Genève*, 24 April 1963, p.7; Barbiellini Amidei and Impenna (1999); Amatori and Colli (2003).

related to Underwood and to electronics.¹²⁹ According to *BusinessWeek*, “under the strain of these investments, Olivetti’s debts snowballed. [...] The company entered 1964 with substantial overcapacity and warehouses full of unsold products. [...] With money tight and the company headless [after President Giuseppe Pero’s death in November 1963], the banks balked at extending Olivetti’s loans”.¹³⁰

In spring 1964, according to Visentini, “the situation of Olivetti and its foreign subsidiaries is most fragile. The foreign companies are hugely indebted towards foreign banks”, the risk being of “a revocation by the American banks of tens of millions dollars of Underwood’s credit lines” (our translation).¹³¹ Reassured by the commitment of the rescue consortium, banks resumed lending to Olivetti.¹³² The new board took immediate action, depreciating the value of Underwood participation in Olivetti books – from a cost value of ITL 23.9 billion, to ITL 0.62 billion to reflect cumulated losses equal to ITL 23.3 billion (see tab. 4).¹³³ Olivetti also drew on its own balance sheet reserves to transfer ITL 6 billion to Underwood to cover 1963 losses. The consequence was that, for the first time since 1909, Olivetti could not distribute any dividends to shareholders.¹³⁴

8. Reacting to the crisis and adapting

It comes as no surprise that Underwood was an important topic in the discussions that Olivetti executives held with Enrico Cuccia, who, as Mediobanca’s president, was heading the rescue group. The banks presented the family and top management with a stark alternative: either to sell Underwood or to give up on electronics (Piol 2004, p. 47). In a dramatic eight-hour meeting, Gabetti managed to convince Cuccia that “the American situation could improve considerably by changing the trading strategy by replacing branches with a network of agents” (Bricco 2005, p. 43, our translation). As a consequence, a 75 per cent stake in the computer division was sold in September 1964 to a new company (Olivetti-General Electric) established with General Electric (GE), barely a month after the American

¹²⁹ “En ce qui concerne la situation financière, on estime qu’en 1964 la société aurait besoin de 30 milliards de lires pour mener à bien son programme de développement. Actuellement, le marché italien n’offre pas la possibilité d’opérer un financement d’une telle importance” (“Que se passe-t-il chez Olivetti?”, *Journal de Genève*, 8 April 1964, p. 5).

¹³⁰ “Why GE is Joining Olivetti”, *BusinessWeek*, 12 September 1964. In 1963 credits towards connected companies increased to ITL56.4 billion (from 14.4 in 1959), and short term debt increased to 56.3 billion (from 17.5 in 1959). See “Relazione sull’esercizio chiuso al 31 dicembre 1959, Olivetti”; “Relazione sull’esercizio chiuso al 31 dicembre 1962, Olivetti”; “Relazione sull’esercizio chiuso al 31 dicembre 1963, Olivetti”, in ASBI, Banca d’Italia, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹³¹ “Lettera di Bruno Visentini a Giorgio Bo, Ministro delle Partecipazioni Statali” in ASBI, Direttorio-Carli, cart. 36, fasc. 18, 12 April 1964.

¹³² ATIM, VCDAO, vol. VII, *Verbale del Consiglio di Amministrazione del 02.02.1965*, p. 15.

¹³³ Banca Commerciale Italiana had previously requested Olivetti to depreciate Underwood (ASI, BCI, VCD, vol. 185, *Verbale della seduta del 24.10.1963*; Ibidem, vol. 193, *Verbale della seduta del 05.01.1965*). See also “Relazione sull’esercizio chiuso al 31 dicembre 1963, Olivetti”, p. 40, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹³⁴ “Relazione sull’esercizio chiuso al 31 dicembre 1964, Olivetti”, p. 46, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

giant had clinched a similar deal with French state-owned Machines Bull.¹³⁵ The partnership was dissolved in 1968 (Soria 1979, p. 119).

In summer 1964, Olivetti Underwood executive Vice President and Treasurer Gianluigi Gabetti reassured employees of the beneficial impact of the new governance and financial equilibrium within the parent company, explaining in a letter accompanying the company's annual report: "Olivetti Underwood Corporation now has equity of over US\$ 31 million [see below]. This decisively reverses the situation which existed for some time, whereby, owing to the great outlay of money for reorganization of the Company, our liabilities exceeded our assets. [...] Although the change in our balance sheet is attributable primarily to our parent company, the shift to profitable operations is basically due to the contribution and effort of each member of the Company."¹³⁶

The need to adapt the trading strategy to the US market and to the more binding financial constraints faced by the group was clear to Lorenzotti. A triple-tiered planning process was introduced to improve marketing management, while a thorough census of the machine population of the country served to identify relevant market areas.¹³⁷ Branches were closed and agencies reinforced, with more powers to area managers and stronger incentives schemes and bonuses to salesmen.¹³⁸ Olivetti's recruiting and training methods were found to be excessively sophisticated and expensive and adapted to the US environment.¹³⁹ In 1964, Underwood subsidiaries in the United Kingdom, France, Germany, South Africa and Mexico were merged with the Olivetti equivalents in the same countries.¹⁴⁰ Peccei also stationed three managers in the United States to study methods of executive recruitment, development, evaluation and other human resources techniques and hired Stanford Research Institute to study market prospects for Olivetti's numerically controlled machine tools, immediately after the successful first sales in the US of its special purpose machine tools.¹⁴¹

These changes soon started to bear fruits, improving the commercial penetration of Olivetti Underwood products.¹⁴² Imports from Italy started to decline and the company

¹³⁵ Olivetti new managers justified the sale with the argument that in Italy the funds destined to scientific research were scarce and specialized engineers were few to indirectly sustain this effort, while abroad innovative corporations were backed by research financing (ATIM, VCDAO, vol. VI, *Verbale della seduta del Consiglio di Amministrazione del 15.07.1964*, p. 147). On R&D activity and financing in Italy see Antonelli and Barbiellini Amidei (2007).

¹³⁶ Learned *et al.* (1965), p. 266.

¹³⁷ "Probe into the World of Ideas with Gianluigi Gabetti", cit.

¹³⁸ Agents passed quickly from 850 to 1,100, branches from 130 to 108 (see "Company Operations, 1963-64" in Learned *et al.*, 1965, p. 257).

¹³⁹ In Peccei's words: "Olivetti' methods, both in recruiting and training, were already quite sophisticated, and we felt they would provide a positive basis for the rebuilding of Underwood. Yet as we acquired a deeper knowledge of the US market, we realized that a number of adjustments were needed in our own techniques and methods, to better respond to our new environment" (Peccei 1966).

¹⁴⁰ ASO, DCUS, FVT, RSC, fasc. 710, coll. V-C-N, A. Barrett, E.P. Learned, *Rapporto sulla Olivetti Underwood Corporation*, cit., p. 19.

¹⁴¹ "Olivetti hits the keys of revival," *BusinessWeek*, 20 November 1965. See "Relazione sull'esercizio chiuso al 31 dicembre 1965, Olivetti", pp. 26 e 27, in ASBI, Banca d'Italia, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹⁴² "Relazione sull'esercizio chiuso al 31 dicembre 1964, Olivetti", p. 30, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

achieved a better balancing with Hartford production (see table 2). More efficient integration between Olivetti Underwood and Olivetti worldwide operations, together with layoffs in Hartford, led to higher productivity.¹⁴³ In due time, the faith in the new commercial structure justified the decision to launch the new Programma 101 on the US market, the first time an Olivetti product was sold abroad earlier than in Italy (see below).¹⁴⁴

The turning point seemed finally in sight. In 1964, Underwood underwent a US\$ 30 million capital increase subscribed by Olivetti through a debt-equity swap.¹⁴⁵ In the Italian parent 1964 balance sheet, the Olivetti Underwood stake was valued at ITL 19.2 billion, 42 per cent of all Olivetti participation (see tab. 4).¹⁴⁶ The 1964 decision to withdraw dividend payments for “prudence” appeared vindicated one year later when Olivetti Underwood, on the wings of a 9 per cent turnover increase, recorded a profit for the first time (US\$ 1 million) and Olivetti paid a dividend again (see tab. 2, fig. 3).¹⁴⁷ Olivetti Underwood was now able to make good profits by importing adding machines and calculators from Italy.¹⁴⁸ In July 1965 Gabetti, then 40, succeeded Lorenzotti, who returned to Italy to direct Olivetti’s commercial operations. The company was then directly employing about 6,800 in the US, of which 2,300 at the Hartford factory (see tab. 3).¹⁴⁹

9. Moving beyond Underwood: integration and cross-fertilization

In 1966, Olivetti employed 52,892 people, sales reached US\$ 506 million, up US\$ 55 million over 1965, global profits grew about 40 per cent to US\$ 16 million and the company had about 25 per cent of world exports of typewriters (see tabs. 3 and 5).¹⁵⁰ One year later, Olivetti claimed 28 per cent of world sales of calculating machines, 29 per cent of standard manual typewriters, 26 per cent of adding machines, 17 per cent of electric typewriters, and 17 per cent of portable and semi-standard typewriters.¹⁵¹

The turnaround process made Olivetti a more “normal” company and relatively speaking wages were “no longer so high” (Novara 1973, p. 284). It still remained at the vanguard,

¹⁴³ “Relazione sull’esercizio chiuso al 31 dicembre 1964, Olivetti”, p. 30, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326. See also “Notizie sulla Ing. C. Olivetti & C., Ivrea, giugno 1963”, p. XII; “Relazione sull’esercizio chiuso al 31 dicembre 1963, Olivetti”, p. 33, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹⁴⁴ “Relazione sull’esercizio chiuso al 31 dicembre 1965, Olivetti”, p. 24, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹⁴⁵ “Notizie sulla Ing. C. Olivetti & C., Ivrea, luglio 1964”, p. XII, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326; see also “Relazione sull’esercizio chiuso al 31 dicembre 1964, Olivetti”, pp. 35-36 and 45, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹⁴⁶ “Relazione sull’esercizio chiuso al 31 dicembre 1964, Olivetti”, p. 59, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹⁴⁷ “Relazione sull’esercizio chiuso al 31 dicembre 1965, Olivetti”, p. 19; “Relazione sull’esercizio chiuso al 31 dicembre 1964, Olivetti”, p. 46, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹⁴⁸ Gabetti, personal communication.

¹⁴⁹ “Olivetti Underwood Unveils Desk Computer for World Market,” *Trade with Italy*, November 1965.

¹⁵⁰ “The Renaissance,” *Time*, 24 February 1967; “Olivetti’s return,” *The Economist*, 25 February 1967; and “Testimonianza sulle esperienze di una multinazionale italiana (Olivetti),” *Mondo economico*, February 1973.

¹⁵¹ “Olivetti: a choice of strategies,” *The Economist*, 27 April 1968.

however, being the first large Italian corporation to introduce productivity-linked metrics for a portion of the total salary.¹⁵²

Anxious to move rapidly into the lucrative field of office copying machines, Olivetti decided on a joint-venture to speed up the process, after a failed attempt to design in-house in Italy an Olivetti copying machine.¹⁵³ The problem was that the company found it all but impossible to locate the right partner.¹⁵⁴ It eventually acquired Federal, a copying machine producer, from Victoreen Instrument, purchased design prototypes from Quik-Chek Electronics & Photo Corp., and established a new R&D group. All these operations were merged in 1965 under a new Olivetti Underwood's subsidiary, Copia, to market copying machines worldwide. The new Copia II model – developed by Olivetti Underwood on its own and exported from the US to the rest of the world – represented a first tentative step in the transformation of Olivetti from an Italian company with foreign subsidiaries to a real multinational.¹⁵⁵

A small group of researchers also kept the electronics division going, the one that had been sacrificed on the altar of the rescue group. The 1965 launch of the new desk-top electronic calculator (Programma 101) for business and technical applications in New York was the first time that a new product was unveiled abroad and not in Italy (Perotto 1995). The P101 was innovative because it had a low price (US\$ 1,000), was programmable, and did not require specialized personnel for its working. The P101 did not use integrated circuits, but instead automatically assembled *ad hoc* logic components. The P101 grew out of a somewhat secret project undertaken and continued by Pier Giorgio Perotto after the disposal of the electronics division by Olivetti in 1964. Perotto's project drew upon his Elea experience and produced a product that assisted Olivetti in the shift beyond its mechanical calculator technology.¹⁵⁶ The design was undertaken by Mario Bellini (then Olivetti's chief design consultant).¹⁵⁷ The P101 sold over 44,000 units from 1965 through to the early 1970s, of which 90 per cent in North America where its market dominance was attributed to its simplicity and functionality, robust construction, appearance and low cost. Its reign ended following the introduction of competing products, in particular the Hewlett Packard 9100A calculator in 1968. Olivetti was awarded damages for patent infringements by Hewlett Packard.

Gabetti decided to hire more local managers, deeming it important to build local knowledge and promote cross-fertilization with Ivrea.¹⁵⁸ In particular, marketing director

¹⁵² “All'Olivetti accordo fatto,” *Rassegna Sindacale*, 11 July 1965.

¹⁵³ “Olivetti-Underwood, Un'operazione rischiosa che si è tramutata in un grosso affare”, cit., p. 53.

¹⁵⁴ “New School Try,” *Time*, 24 November 1967.

¹⁵⁵ See “Olivetti-Underwood, Un'operazione rischiosa che si è tramutata in un grosso affare”, cit., p. 53; “Relazione sull'esercizio chiuso al 31 dicembre 1965, Olivetti”, pp. 19 and 28, in ASBI, *Raccolte diverse - Relazioni e Bilanci*, cart. 1326.

¹⁵⁶ This sort of autonomous entrepreneurial initiative contributed to the shaping of corporate emerging strategic orientation (Burgelman, 1983; Coda and Mollona, 2010).

¹⁵⁷ Mario Bellini grouped the mechanical and electronic components in sub-assemblies and employed cast aluminium as the casing material (reducing electrical interference from nearby sources). The final layout of the Programma was the result of over 40 prototype models (McCarty 1987). internal corporate venturing.

¹⁵⁸ “Probe into the World of Ideas with Gianluigi Gabetti”, cit. and Gabetti, personal communication.

John J. Reilly, an IBM veteran, was widely credited for the P101 success. Alberto Vitale, one of the first Italian MBAs, was deputy director-general in charge of market development planning and went on to a very distinguished career in corporate America.¹⁵⁹ Through Olivetti Underwood, Olivetti adopted new methods of programmed instruction based on the experience of the US Armed Forces and the studies of various organizations and universities.¹⁶⁰ A program for retraining Olivetti's middle management in various business schools in the United States was launched in order to transfer US knowledge back to Italy.¹⁶¹

Peccei acknowledged this new attitude and openness in 1966: "Olivetti brought to the United States its managerial techniques and philosophy, its industrial design, its salesmanship, its personnel training; but instead of reshaping Underwood merely as a reflection of Olivetti, a new experience was started. Olivetti in turn, tested and received from this country, via Underwood, new methods and ideas. The result was the emergence of a set of revised technologies in all sectors concerned, which constitute an important asset not only for Olivetti Underwood but for Olivetti as a whole" (p. 129). Technology transfer and cross-fertilization, however, found their limits in the lack of sufficient investment in R&D. Headquarters were aware that the superior degree of competition in the American market necessitated considerable investments "in research, planning and production of more sophisticated models", but then balked at the idea of investing adequately to set up a R&D centre in the US.¹⁶² Gabetti tried to convince Ivrea to open a new R&D laboratory on the East coast, close to the MIT campus, with good prospects of qualifying for public aid, but a clear consensus was not reached. According to Gabetti, this was due to Roberto Olivetti's opposition (Semplici 2001, p. 106), although board minutes reveal that Roberto proposed to strengthen basic research in Italy and simultaneously invest in applied research in the USA, including via partnerships with smaller American firms.¹⁶³ While the quest for economies of scale and the top management's need to exert closer control are important reasons for concentrating R&D activities close to headquarters (Caves 1996), the lack of a common facility, where American and Italian researchers could be co-located, hindered the development of the next-generation P101 (Piol 2004, p. 66).¹⁶⁴

¹⁵⁹ Vitale, a Fulbright Scholar at the Wharton School, joined Olivetti in 1958. He left Olivetti Underwood in 1972 to join Ifint and then Bantam Books in 1975 as Vice President. Ifint had bought Bantam Books one year earlier from Bertelsmann, to sell it back to the German media group in 1977. Vitale then became President and CEO of Random House, then the nation's leading publisher of books of general interest. In 1998 Bertelsmann bought Random House and Vitale was named as chairman of a new supervisory board. Vitale became an American citizen in 1982. See "Bantam's 'General' Brings a Legacy of Discipline, *The New York Times*, 9 November 1989.

¹⁶⁰ Peccei (1966). See also "Programma schematico di lavoro a conclusione degli incontri negli Stati Uniti ed in Europa nei mesi di luglio ed agosto", undated, probably 1965, in ASO, Fondo Sergio Lupo (FSL), fald. 50, coll. V-E-E-1-1.

¹⁶¹ "Lettera di M. Cornaglia a S. Lupo, 29-12-1965, Ivrea", in ASO, FSL, fald. 50, coll. V-E-E-1-1.

¹⁶² "Relazione sull'esercizio chiuso al 31 dicembre 1966, Olivetti", in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326, our translation.

¹⁶³ ATIM, VCDAO, vol. VII, *Verbale della seduta del Consiglio di Amministrazione del 29.10.1968*, p. 170.

¹⁶⁴ While most R&D was carried out in Italy, transatlantic coordination permitted to maintain "a direct link with the advanced technological experiences" in the US ("Relazione sull'esercizio chiuso al 31 dicembre 1967, Olivetti", p. 26, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326, our translation); three years later the company report stated that "research activity is performed almost exclusively in Italy; in the US there is a

Gabetti was more successful in integrating product planning functions. Not only the exchange of information and experience between Italy and Hartford was regular, but so were the visits of the Ivrea-based managers and technicians to Olivetti Underwood.¹⁶⁵ In fact, it was partly through these interactions that in 1970 Olivetti could develop in the US its first electronic calculator with integrated circuit (microchip), Logos 270, and launch it simultaneously in Europe and North America.¹⁶⁶ Other competencies that Olivetti Underwood transferred to the headquarters were in the use of calculators for school teaching¹⁶⁷ and the attention to eliminate waste and improve after-sale servicing.¹⁶⁸

In the second half of the 1960s Olivetti's confidence in its US venture appeared well-grounded and justified a major investment. Olivetti Underwood returned to fledging profitability, making Gabetti "gratified" although "not yet satisfied".¹⁶⁹ Turnover rose by 21 per cent in 1966 and by 8 per cent in 1967 and profits kept pace even "after adequate and prudential redemptions and reserves were made" (see tabs. 2 and 5, fig. 3).¹⁷⁰ By then Olivetti was the eighth largest foreign investor in the US and the American company accounted for more than a fourth of worldwide Olivetti business. In 1967 Peccei was assigned the honorary post of vice chairman, although he remained very visible in American circles and was invited to testify before the Foreign Policy Subcommittee of the joint Economic Committee of the US Congress on international trade policies.¹⁷¹ Roberto Olivetti and Bruno Jarach, an engineer arisen through the company ranks, were appointed joint managing directors. *The Economist* commented that "the takeover of Underwood, which at first looked like the late Adriano Olivetti's biggest blunder in the light of the 1964 crisis, has now begun to come right".¹⁷²

small nucleus, but with highly specialized activities" ("Relazione sull'esercizio chiuso al 31 dicembre 1970, Olivetti", p. 35, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1327, our translation).

¹⁶⁵ "Olivetti-Underwood, Un'operazione rischiosa che si è tramutata in un grosso affare", cit.

¹⁶⁶ "Olivetti-Underwood, Un'operazione rischiosa che si è tramutata in un grosso affare", cit. For specific examples of cross-fertilization between staff in Scarmagno and Harrisburg, the two plants where the P101 and Logos 270 models were produced, see "Trip report della visita compiuta allo stabilimento di Harrisburg (USA) nei giorni 26-30 gennaio 1970", 6 February 1970, in ASO, FOB, fasc. 476, coll. V-E-K-2-7.

¹⁶⁷ "Programma schematico di lavoro a conclusione degli incontri negli Stati Uniti ed in Europa nei mesi di luglio ed agosto", undated, probably 1965, in ASO, FSL, fald. 50, coll. V-E-E-1-1.

¹⁶⁸ In late 1966, nine Olivetti engineers and technicians visited industrial plants in the USA, including Hartford, from where they returned with ideas to apply packaging techniques used there (ASO, DCUS, Tecnologie di produzione, fald. 22, fasc. 35, coll. V-E-B-2-2, *Visita negli USA dal 30.10.1966 al 12.11.1966*; *ibid.*, *Relazione sulla visita all'Underwood Corp. del 07.11.1966*). See also "Olivetti-Underwood, Un'operazione rischiosa che si è tramutata in un grosso affare", cit., p. 55.

¹⁶⁹ "Probe into the World of Ideas with Gianluigi Gabetti", cit.

¹⁷⁰ See "Relazione sull'esercizio chiuso al 31 dicembre 1966, Olivetti", in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326, our translation; "Relazione sull'esercizio chiuso al 31 dicembre 1967, Olivetti", p. 20, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹⁷¹ "An Italian Businessman Looks at U.S. Trade Policies," *Trade with Italy*, August 1967, pp. 7-8. Peccei eventually set up the Club of Rome.

¹⁷² "Olivetti's return," *The Economist*, 25 February 1967.

The crumbling Hartford plant on Arbor Street, in the Parkville section, was closed in June 1968¹⁷³. The “sudden” shutdown was prompted by a workers’ strike in frustration after months of fruitless negotiations on a new contract. The company “gave high production costs, out-dated equipment, a rundown plant and a shortage of skilled labor as its chief reasons for closing”.¹⁷⁴ Local authorities “offered to assist Olivetti in the construction of a new factory in Hartford [...] but it was not economically feasible to maintain a typewriter factory [there] even with government assistance” (FTC 1973, p. 334). Nonetheless, “thanks to the excellent relations which have always prevailed between the top management of Olivetti Underwood and [directing representative for IAM District 26 Joseph] Cronin”, an “excellent settlement” was reached for about 1,900 displaced workers.¹⁷⁵

One year later a new plant was inaugurated in Harrisburg designed by Louis I. Kahn, “one of the most uniquely designed modern buildings located in Central Pennsylvania”.¹⁷⁶ Olivetti Underwood acquired the 100-acre property, an abandoned supermarket, through an arrangement with the Harrisburg Area Industrial Development Corp. in 1968. The Harrisburg choice was dictated by the need to find a location that had ample space for the warehouses, excellent connection to major ports and transport hubs, and workforce with significant industrial tradition but no strong unions’ presence.¹⁷⁷ As for the architect, the company followed Zorzi’s advice for Kahn over alternatives.¹⁷⁸ The work took three years and was made difficult by Kahn’s competing projects in India and Bangladesh and also by the need to find technological solutions for some structural issues. The solution was found drawing on the in-house experience that Olivetti had accumulated over the years in building plants in Italy and Latin America.¹⁷⁹

The closing of Hartford and the opening of Harrisburg meant a further step in the integration process of Olivetti Underwood into the Olivetti Group, firstly because of the riddance of all remaining Underwood products to focus only on Olivetti’s new ones: the

¹⁷³ In 1975 it was converted into Real Art Ways – one of the seminal “alternative spaces” for art in the U.S.

¹⁷⁴ ATIM, VCDAO, vol. VII, *Verbale della seduta del Consiglio di Amministrazione del 24.07.1968*, pp. 149-154, our translation.

¹⁷⁵ “\$ 2,358,000 severance pay, benefits help cushion Underwood shutdown,” *The Machinist*, 14 November 1968. For details on the talks with trade unions and the city and state government, see ATIM, VCDAO, vol. VII, *Verbale della seduta del Consiglio di Amministrazione del 24.07.1968*, pp. 149-154.

¹⁷⁶ “Olivetti building’s facelift sign of cultural destruction,” *The Patriot News*, 30 August 1997. Kahn built the factory as a state-of-the-art facility with many unique design features, such as the sky lights and thick, widely spaced columns which join the roof as massive, inverted pyramids. The earliest drawing in the Kahn collection is dated 17 August 1966 and the latest 24 June 1970. Construction was completed on 17 November 1969.

¹⁷⁷ “Louis I. Kahn: ricordi di un committente. La costruzione della fabbrica dell’Olivetti, Harrisburg 1967-1970” by R. Zorzi, Casabella, 1997, no. 651/2, p. 114. Renzo Zorzi, head of the Development & Advertising Office, wished to make the Harrisburg plant, surrounded by a green landscape and easily seen from the adjoining highway, a tool to mark a new Olivetti beginning in the US (ASO, FOB, fasc. 476, coll. V-E-K-2-7, *Relazione di Renzo Zorzi a Bruno Jarach e Roberto Olivetti del 02.03.1967*).

¹⁷⁸ Initially Olivetti considered Georges Nelson, who had already designed the Editor typewriter, but his project clashed with the Olivetti tradition of light-exposed buildings. Zorzi, who *inter alia* edited the Zodiac architecture magazine, suggested Kahn, at the time the subject of a special issue of the journal. See Bottero (1967).

¹⁷⁹ “Louis I. Kahn: ricordi di un committente”, cit. p. 120.

plant was destined to produce the P101 as well as the new Editor 2 electric typewriter.¹⁸⁰ The project was ambitious: to move Olivetti to higher-value product niches, reach larger scales by concentrating production in a selected number of plants, and position the company in the emerging global geography of the ICT industry (electric typewriters, terminals, telewriters and microcomputers).¹⁸¹ Harrisburg cost more than US\$ 15.5 million, of which US\$ 4 million for machinery and equipment.¹⁸² Its undisputable beauty notwithstanding, both customer and architect probably gave too much importance to form – in particular, skylights on the roof that were assembled on the ground and hoisted into place by helicopter – rather than substance.¹⁸³

Another indication of the company's intention to grow stronger roots in America was the inauguration of a "bellissimo" (Piol 2004, p. 79) training center in Tarrytown, NY in November 1968.¹⁸⁴ Designed by Richard Meier under the direction of Burton McQueen,¹⁸⁵ the center applied extremely innovative training methods and systems and kept up to date with the latest vocational training techniques developed in the US.¹⁸⁶ The investment was meant to accompany the launch of "more sophisticated and complex products".¹⁸⁷ New warehouses were built in Bridgewater, NJ along Route 202.¹⁸⁸ In 1968 Olivetti started exporting numerically-controlled machine tools to the US.¹⁸⁹

It took some time for Ivrea to realize that not only Harrisburg was not such a convenient location as it was initially thought,¹⁹⁰ but also that the plant had been expensive to build and

¹⁸⁰ See ATIM, VCDAO, vol. VI, *Verbale della seduta del Consiglio di Amministrazione del 15.07.1964*, p. 152; "Relazione sull'esercizio chiuso al 31 dicembre 1968, Olivetti", p. 14, in ASBI, *Raccolte diverse - Relazioni e Bilanci*, cart. 1326.

¹⁸¹ As part of the same program, production of some Hartford products was moved to Glasgow in 1968 ("Relazione sull'esercizio chiuso al 31 dicembre 1968, Olivetti", p. 14, in ASBI, *Raccolte diverse - Relazioni e Bilanci*, cart. 1326).

¹⁸² ASO, DCUS, PV, fasc. 1521, coll. V-E-D-2-3, *Rapporto dell'ing. Vitale dell'OCA al dott. Minardi*, 4 October 1971.

¹⁸³ "More than just a volume," *The Architectural Forum*, April 1971, pp. 20-26.

¹⁸⁴ *Discorso di Gianluigi Gabetti in occasione dell'inaugurazione dello stabilimento di Tarrytown*, 26 November 1968, in ASO, DCUS, PV, fasc. 1521, coll. V-E-D-2-3.

¹⁸⁵ Meier also designed a group of prefabricated buildings, to be erected on some six Olivetti sites all over the United States, and a modified smaller version in timber, developed for seven other sites. In the event, none of these were built as Olivetti decided to economize on development. See Meier (1984), pp. 16-17

¹⁸⁶ ASO, "In U.S.A. un centro di addestramento," *Notizie Olivetti*, January 1969.

¹⁸⁷ "Relazione sull'esercizio chiuso al 31 dicembre 1969, Olivetti", p. 20, in ASBI, *Raccolte diverse - Relazioni e Bilanci*, cart. 1327.

¹⁸⁸ "Relazione sull'esercizio chiuso al 31 dicembre 1971, Olivetti", in ASBI, *Raccolte diverse - Relazioni e Bilanci*, cart. 1327.

¹⁸⁹ "Relazione sull'esercizio chiuso al 31 dicembre 1969, Olivetti", p. 20, in ASBI, *Banca d'Italia, Raccolte diverse - Relazioni e Bilanci*, cart. 1327.

¹⁹⁰ While the unemployment rate in Harrisburg was high, Olivetti decided to offer relatively high salaries and fringe benefits in order to fight unionization ("Lettera di Ottorino Beltrami a Romano Gabriele del 16.11.1972," in ASO, FOB, fasc. 476, coll. V-E-K-2-7). In addition, turnover and absenteeism were both high ("Relazione sul viaggio in USA, luglio 1975," in ASO, *Direzione Metodi Organizzativi*, fasc.105, coll. V-C-O-1-5).

even costlier to operate and maintain.¹⁹¹ In practice, the Harrisburg plant was only used for assembling microcomputers and electronic calculators to be sold in North America and the Editor 2 for the domestic market; production was limited to photocopiers, to be exported to 134 countries.¹⁹² In 1969, the United States still accounted for 25.5 per cent of Olivetti's total sales, making this the company's largest market overall, although almost half of employees were still in Italy (see tabs. 1, 3 and 5; CESPE 1971). In 1970 Olivetti stopped using the Underwood name in the USA and consolidated the American subsidiary, Olivetti Underwood, whose name was changed to Olivetti Corporation of America. In that year total sales stopped growing and no profit was produced.¹⁹³ Rapidly, the North American market became less important for Olivetti, which in 1971 derived 19.2 per cent of its turnover from the US and Canada (see tabs. 1 and 5).¹⁹⁴

In 1968 Olivetti Underwood's capital was increased, from US\$ 30 to US\$ 45 million, by the intervention of Olivetti International, the group's Luxembourg-based financial holding company, increasingly involved in foreign subsidiaries' development.¹⁹⁵ In the Italian parent 1968 report, the stake was valued at ITL 28.5 billion, a peak 46 per cent of all Olivetti participations (see tab. 4). In 1969, for the first time ever, Olivetti registered a significant loss.

10. Olivetti's struggle to emerge as a global ICT player

In the 1970s Olivetti transformed itself, from a mechanical to an electronic company focused on distributed computing and office automation, a process that put tremendous emphasis on technological transformation and product renewal.¹⁹⁶ From 1971 to 1973, the percentage of electronics-based calculating and accounting machines in Olivetti global turnover rose from 23.9 to 37.8, and in 1974 two new minicomputers and a computer terminal were launched.¹⁹⁷ This transformation, however, took a heavy toll on the company finances.

¹⁹¹ "Lettera di Gribaudo a Bellisario, Beltrami, Ricciardi del 3 giugno 1974," in ASO, FOB, fasc. 476, coll. V-E-K-2-7.

¹⁹² "Informazioni sul Gruppo Olivetti e sulla Ing. C. Olivetti & C., Ivrea, giugno 1972", pp. 5 and 6, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

¹⁹³ "Relazione sull'esercizio chiuso al 31 dicembre 1970, Olivetti", p. 27, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1327.

¹⁹⁴ The board discussed often the difficulty of penetrating the American market and the lack of competitiveness of certain Olivetti products (ATIM, VCDAO, vol. VIII, *Verbale della seduta del Consiglio di Amministrazione del 24.10.1969*, p. 60; Ibidem, *Verbale della seduta del Consiglio di Amministrazione del 22.12.1969*, p. 69; *ibid.*, *Verbale della seduta del Consiglio di Amministrazione del 17.02.1970*, pp. 99-100). See also "Testimonianza sulle esperienze di una multinazionale italiana (Olivetti)," *Mondo economico*, February 1973.

¹⁹⁵ "Relazione sull'esercizio chiuso al 31 dicembre 1968, Olivetti", p. 17, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326. Olivetti International's capital stock was increased in 1967 to US\$ 25 million (from 15), to issue a US\$ 15 million bond on the Eurodollar market ("Relazione sull'esercizio chiuso al 31 dicembre 1967, Olivetti", p. 23, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326).

¹⁹⁶ "Relazione sull'esercizio chiuso al 31 dicembre 1978, Olivetti", pp. 17-18 and 28, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1327; Berta and Michelsons (1989).

¹⁹⁷ "Olivetti's second try at the computer market", *BusinessWeek*, 26 October 1974. This does not mean that Olivetti traditional products were shelved – in his article on leaving Saigon, *Time* correspondent Roy Rowan wrote of "say[ing] goodbye to my faithful Olivetti" ("This Is It! Everybody Out!", 12 May 1975).

Gabetti left Olivetti in 1971 and Carlo Alhadeff, previously the Managing Director of British Olivetti, took the helm at OCA in June 1971.¹⁹⁸ In the broader context of the group's transformation, the US branch accumulated losses and Ivrea started referring to the "downsizing" of the American production activities.¹⁹⁹ A new capital increase for OCA was decided in 1972 and in this opportunity the Italian mother-company transferred its shares to its Luxembourg-based financial holding (see tab. 4). The goal was to make it easier to transfer funds among affiliates and "provide maximum flexibility and efficacy to the group's financial strategies".²⁰⁰ At OCA payroll fell under 5,000 people, with 863 jobs axed in 1973 alone.²⁰¹ The company image was also tarnished by an unfortunate advertising campaign promoting "brainy" typewriters that were supposed to eliminate some typing errors made by shallow secretaries.²⁰²

OCA was able to increase total sales, but this was not enough to improve its financial results.²⁰³ The American contribution to the global Olivetti turnover, which had comfortably exceeded 25 per cent the previous decade (increasingly thanks to US production) came down in the early 1970s. The Olivetti Corporation of America contribution fell under 15 per cent and imports from Italy also dived (see tab. 5, fig. 4 and 5).²⁰⁴ In 1978, Ivrea sees OCA situation as "critical".²⁰⁵ Accumulated losses and the costs of OCA restructuring made necessary a recapitalization (US\$ 55 million) of the controlling Olivetti International, on top of the capital increase of Olivetti's itself from ITL 60 to ITL 100 billion (roughly equal to US\$ 47 million). It was in this occasion that Carlo De Benedetti assumed financial and managerial control over Olivetti.²⁰⁶

In 1978, De Benedetti closed half of the 90 offices of Olivetti in the United States (which in 1978 were losing US\$ 30 million on US\$ 160 million of sales) and sold its New York

¹⁹⁸ *Il Giorno*, 20 June 1971, p. 9, in ASO, FUS. Alhadeff later joined Bnl Holding, at the invitation of President Nerio Nesi ("Un gigante con il mal di sportello", *Repubblica - Affari & Finanza*, 29 April 1988, p. 8).

¹⁹⁹ "Relazione sull'esercizio chiuso al 31 dicembre 1971, Olivetti", p. 13, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1327.

²⁰⁰ See "Relazione sull'esercizio chiuso al 31 dicembre 1972, Olivetti", pp. 28-30, our translation; "Relazione sull'esercizio chiuso al 31 dicembre 1975, Olivetti", pp. 64-65, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1327.

²⁰¹ "Relazione sull'esercizio chiuso al 31 dicembre 1973, Olivetti", pp. 13, 16 and 20, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1327.

²⁰² The TV commercial showed a secretary as a vacuous pin-up girl who finds that she can attract men by becoming "an Olivetti girl." This infuriated a group of New York City secretaries, backed by members of the National Organization of Women, a feminist organization, which picketed its headquarters ("Rebel Secretaries," *Time*, 20 March 1972).

²⁰³ See "Relazione sull'esercizio chiuso al 31 dicembre 1974, Olivetti", p. 36; "Relazione sull'esercizio chiuso al 31 dicembre 1975, Olivetti", p. 11; "Relazione sull'esercizio chiuso al 31 dicembre 1976, Olivetti", p. 13, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1327; "Relazione sull'esercizio chiuso al 31 dicembre 1977, Olivetti", p. 14, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1328.

²⁰⁴ "Relazione sull'esercizio chiuso al 31 dicembre 1978, Olivetti".

²⁰⁵ "Relazione sull'esercizio chiuso al 31 dicembre 1978, Olivetti", p. 15 e 16.

²⁰⁶ In the 1970s, as the end of the Bretton Wood system increased financial instability and made financial management more difficult, Olivetti International became the "group's financial lung" ("Relazione sull'esercizio chiuso al 31 dicembre 1975, Olivetti", pp. 9-10).

headquarters as well as the adjacent Nassau Hotel.²⁰⁷ Almost 1,000 employees were fired and workers in Harrisburg fell to 763.²⁰⁸ De Benedetti hired Nathaniel Samuels, a Kuhn Loeb Lehman Brothers International partner, as chairman, and then handed the job of president and CEO to Marisa Bellisario, a former Honeywell executive and at the time one of the few female top managers, in Italy or the USA. In less than two years, Bellisario overhauled the company's strategy, becoming more selective in the product range and offering more advanced products geared to the American market, instead of shipping over from Italy products that had been successful in other markets and yet failed to sell across the Atlantic.²⁰⁹ Typewriter production was moved from Harrisburg to Singapore.²¹⁰ Bellisario also built up a top management team with experience at main US corporations such as IBM, Xerox, Pitney-Bowes and W.R. Grace.²¹¹

De Benedetti saw the American R&D facilities as a strategic asset for Olivetti to rub elbows with others in the U.S. electronics community and become a major factor in the "office of the future". Some initial moves in this sense had been made already – in 1976 the new electronic computing division had seen the light in Harrisburg with the explicit mandate of scouting for technology solutions there, thus breaking with Olivetti's not-invented-here syndrome.²¹² This facility was managed by Enrico Pesatori (who later became President and CEO of Olivetti North America and head of the Olivetti Systems Group). The new vision of Olivetti as more than a simple office machine producer led also to the decision of investing in R&D in California. Enzo Torresi and other Italian engineers moved from Harrisburg to the West Coast in 1974, initially to oversee local semiconductor suppliers, but increasingly also to design advanced sub-systems. This led to the creation of the Advanced Technology Center (ATC) in Cupertino and of the Olivetti Research Center in Menlo Park in 1978: these structures are under the direct control of Ivrea, so that innovative technology solutions and ideas can be transferred rapidly to the products and the production lines.²¹³ Initially the Cupertino group focused the research activities on electronic typewriters, since 1978 turned to software development of the new Olivetti systems line (Linea 1). Thanks to the strategic localization in the Silicon Valley, the Cupertino ATC "had easy access" to technological knowledge, skilled personnel, advising and consultancy, specialized suppliers, software houses, and it was able "to develop successfully new projects [...] allocating

²⁰⁷ "When a building goes piggyback", *BusinessWeek*, 27 November 1978 and "Olivetti: its growth in Europe will rely on U.S. technology", *ibid.*, 12 February 1979.

²⁰⁸ See "Relazione sull'esercizio chiuso al 31 dicembre 1978, Olivetti", p. 7; "Relazione sull'esercizio chiuso al 31 dicembre 1979, Olivetti", p. 10, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1328; de Witt (2005); p. 183.

²⁰⁹ "She Has Three Years to Turn Olivetti America Around," *Fortune*, 22 October 1979. Bellisario's business career began in Olivetti's computer division in 1960, before moving to GE and coming back with Beltrami in 1972. She became head of the information technology division in 1978 and was appointed to the US in January 1979 (Piol 2004).

²¹⁰ "Lettera di Marisa Bellisario a Ottorino Beltrami del 20 ottobre 1977," in ASO, FOB, fasc. 476, coll. V-E-K-2-7.

²¹¹ "She Has Three Years to Turn Olivetti America Around", cit.

²¹² "Lettera di Guido Lorenzotti a Ottorino Beltrami del 11 novembre 1976," in ASO, FOB, fasc. 476, coll. V-E-K-2-7. See also "Intervista a Ottorino Beltrami" in Novara et al. 2005, pp. 570-571.

²¹³ See "Relazione sull'esercizio chiuso al 31 dicembre 1978, Olivetti", p. 10; "Relazione sull'esercizio chiuso al 31 dicembre 1983, Olivetti", p. 90 and 91, in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1328.

product development activities both in the United States and Italy, bringing back progressively ‘at home’ a great part of the development projects”.²¹⁴

At least 300 Italian engineers passed through ATC, where roughly 170 researchers were working at any given time.²¹⁵ Initially half of the staff was made of Italians, but in a few years the Americans share increased to 85 per cent. A success therefore, although the turnover remained very high due to the constant poaching by local firms, that could offer better and longer-term professional opportunities.²¹⁶ Olivetti produced and supplied to the Italian business community (and not only) a semi-public good: talented international managers and engineers. Olivetti’s ATC was a huge bank of talent and opportunity for both Italian and US business, two prominent examples being Mario Mazzola and Guerrino De Luca.²¹⁷ A number of former Olivetti stayed on in the San Francisco Bay Area, and most members of the Silicon Valley Italian Executive Council (SVIEC) are said to be former Olivetti employees.

De Benedetti also saw the potential of IT start-ups and set up a venture capital, run in New York but part of Olivetti corporate activities. In 1980-96, Olivetti made 66 venture investments, including 19 companies that then went public, generating a net internal rate of return above 18 per cent (Olivetti 1996).²¹⁸ It also entered into strategic cooperative agreements and joint ventures with many US companies, to exploit technological, commercial and productive complementarities.²¹⁹ This reliance on external acquisition of

²¹⁴ G. Martino, “Advanced Technology Center: una punta di diamante americana per la Olivetti,” *Informatica oggi*, n. 2 1983, p. 70, in ASO, DCUS, TV, Rassegna stampa, fasc. 863, our translation.

²¹⁵ ATC Cupertino professionals included Enzo Torresi (founder and president in 1979-1982), Giuliano Raviola (president in 1982-1985), Tiziana Perinotti (the Olivetti representative in Redmond during a joint venture OEM project with Microsoft to develop the international Windows 2.0 release and the Windows version for the first 386 PCs), Piero Scaruffi, Giampiero Caprino, Marco Paganini, Gianmaria Clerici, Marco Graziano, Gunjan Sinha, Peter R. Jones, Salvatore Amato (now at the University of Siena), Antonella Fresa, Mauro Meanti (Microsoft EMEA), and Giovanna Petrone and Marino Segnan (now both at University of Turin). Possibly the most famous former Olivetti man in Silicon Valley is Federico Faggin, who designed his first computer in Borgolombardo at the age of 19. Following stints at the University of Padua, CERES and SGS Fairchild in Milan, he left Italy in 1968 to work at Fairchild Semiconductor in Palo Alto. In 1970, Faggin moved to Intel, where he co-developed the world’s first microprocessor (Intel 4004). In 1974, Faggin founded Zilog Corporation, and co-designed its most famous product, the Z80 microprocessor. In 1996, Faggin was inducted in the National Inventors Hall of Fame for the co-invention of the microprocessor.

²¹⁶ “Intervista a Sandro Graciotti” in Novara *et al.* (2005). Graciotti was hired in 1968 and left Olivetti between 1981 and 1983 to found Logitech, before returning to Cupertino and contributed to the M24.

²¹⁷ Mazzola founded Crescendo Communications (that developed the encoding scheme used for Fast Internet) in 1990 and upon selling it to Cisco Systems became Senior Vice President. De Luca became CEO of Logitech in 1998. Logitech, with headquarters in Fremont, CA (although it is incorporated in Switzerland), was then known mostly for selling mice to PC makers and today sells webcams, wireless keyboards, game controllers and speakers.

²¹⁸ This fund was managed by Elserino Piol, a long-time Olivetti veteran who had joined the firm in 1952, became the first head of the *Servizio commerciale elettronico* in 1959 and of product planning since 1963 (Piol 2004 p. 36). In 1990 Piol was head of Olivetti Systems and Networks (one of the three units in which Olivetti was split at the end of the 1980s, the others being Olivetti Office, headed by Franco Tatò and Olivetti Information Services Division, headed by Franco De Benedetti). See also Onida and Viesti (1988).

²¹⁹ As for the technological cutting hedge new Olivetti’s text-editing system: the 1978 TES 701 resulted from a specified design and supply contract with a small Colorado computer company (“She Has Three Years to Turn Olivetti America Around”, cit.).

competencies opened an internal schism with the Olivetti old-timers (“olivettiani”) who saw it as evidence of neglect vis-à-vis long-term investment in intra-muros technological capabilities.²²⁰

In 1980, Saint Gobain Pont à Mousson (the conglomerate which also owned a stake in CII Honeywell Bull, France’s largest computer company) acquired a 20 per cent Olivetti stake and Bellisario was recalled to Ivrea to explore joint R&D projects. Olivetti’s management team in the USA became all-American for the first time, as Samuels was paired with Albert Winegar, a IBM veteran, as president and CEO.²²¹ The M20 – the smallest in the Linea 1 range and one of the very rare computers based on the 16-bits Zilog Z8000 microprocessor – was launched in March 1982. When *Time* devoted its 1983 New Year’s cover story to the upcoming ICT revolution, the M20 was one of the featured items.²²² More than 50,000 units were shipped in the first year. Digital Research used the Olivetti M20 personal computer to develop a Z8000-based version of CP/M.²²³ In 1983, AT&T bought 25 per cent of Olivetti and De Benedetti was appointed to the AT&T board; the deal included the sale to AT&T for US\$ 250 millions of 125.000 Olivetti work stations to be marketed in the US.²²⁴

Automated teller machines (ATMs) emerged as the second pillar of Olivetti operations in the USA. In 1982 Docutel, a leading ATM manufacturer, purchased Olivetti Corp., the American subsidiary of the company. The merger agreement made Olivetti & C. the largest single stockholder in Docutel, which accordingly changed its name to Docutel/Olivetti Corp.²²⁵ The new Olivetti USA acquired Bunker Ramo’s U.S. banking operations from Automatic Data Processing in April 1986 for US\$ 174 million.²²⁶ In September 1986, Olivetti USA moved its corporate headquarters from Las Colinas to Bridgewater, NJ in order to consolidate its operations with ISC-Bunker Ramo ones (which in 1989 employed about 1,900). ISC-Bunker Ramo was focused heavily on the bank-branch automation market, and expanded that in 1992 – shortly before the name change to Olivetti North America – to include four Olivetti products. Also in 1992, the company scored some major gains in service contracts, for example an US\$ 11 million agreement with Great Western Bank and major service contracts with IPL Systems and Video Telecom. Through the latter contract, the company also got into the business of installing and servicing videoconferencing products. In early 1993, the company began seeking government accounts and a broader

²²⁰ “Intervista a Gastone Garziera” in Novara et al. 2005. Garziera joined the Borgo Lombardo laboratory in 1961 and contributed to the Programma 101 development.

²²¹ Bellisario left Olivetti in 1981 to join giant state-owned Italtel group as managing director and chief executive officer.

²²² “The Computer Moves In”, 3 January 1983. See also “The Docutel/Olivetti M20. A Sleek Import,” *BYTE*, June 1983.

²²³ Like most of the computers designed before the IBM PC era, the M20 offered technical choices which made it totally incompatible with the rest of the micro world.

²²⁴ Ciborra (1986). See also “Relazione sull’esercizio chiuso al 31 dicembre 1983, Olivetti”, p. 5 and 89, in ASBI, Banca d’Italia, Raccolte diverse - Relazioni e Bilanci, cart. 1328; “Relazione sull’esercizio chiuso al 31 dicembre 1984, Olivetti”, p. 1, in ASBI, Banca d’Italia, Raccolte diverse - Relazioni e Bilanci, cart. 1328

²²⁵ OCA brought 1081 employees into the new company. See “Relazione sull’esercizio chiuso al 31 dicembre 1982, Olivetti”, p. 5 and 6, in ASBI, Banca d’Italia, Raccolte diverse - Relazioni e Bilanci, cart. 1328.

²²⁶ Kim Crompton, News Editor, *Journal of Business* (Spokane), personal communication, 28 September 2007.

spectrum of retail accounts, such as in the gas-station and airline-travel markets. The new strategy was an attempt to duplicate successes rung up by Olivetti Canada with automated systems and software. The company became Olsy North America in 1997 and merged with Wang Laboratories Inc. in 1998, shortly bought by U.S. rival Getronics.

In the 1990s Olivetti transformed itself into a telecom company (Omnitel in mobile communications and Infostrada in fixed telephony), then made a leveraged buyout to take over Telecom Italia, and finally merged with the latter, changing its company scope and adopting that of Telecom Italia, as well as adopting the Telecom Italia name; in the background Olivetti's swan song was clearly audible. In 1996 Olivetti could still claim fame as a well-known brand associated with high-end design. That year the Royal Consumer Products Division was awarded one of *BusinessWeek*'s Annual Design Awards for a battery-operated Brain Gear pencil sharpener that at US\$ 9.95 was US\$ 2 less than a Panasonic entry in the Staples catalog.²²⁷ But that was not enough – from its heydays of one of Europe's most famous brands, Olivetti has now become an operator of call centers and other similar services.

11. Conclusions: European business in America and Olivetti in a comparative perspective

How did Olivetti perform in, and adapt to the US market? Did the form of entry make a difference, was it the right one? What autonomy did Olivetti-Underwood enjoy? What contributions did the subsidiary give to knowledge development and R&D? What broader implications does this case study have for the study of foreign/Italian multinationals in the US?

Our core finding is that previous studies (and in particular Learned *et al.* 1965) provide a partial evaluation of the Underwood acquisition. Not that their extremely negative finding was incorrect – Olivetti was a case study of the corporate problems that arise when a foreign firm pays too much for a poor company in order to gain a foothold in the United States. The acquisition took a heavy toll on financial and managerial resources, resulting a brownfield investment with all the costs and risks of both an M&A and a greenfield form of entry. Adriano saw Underwood as a unique opportunity for Olivetti to make a quantum leap, but the company turned out to be a lemon. The sudden death of the top executive who embodied the firm's ownership advantages also deprived the Italian company of the leadership that was needed to build a clear and stable strategic intent.²²⁸

But some of the actions that were still incipient in 1964 did produce some results later in the decade. It took Olivetti quite some time to learn and adapt, and the process was both slow and painful, but went definitely deeper and was finally more fruitful than for many other foreign companies in the US. The initial strategy was to turn Underwood into a mere bridgehead for exporting Olivetti products. Only later did US-stationed managers understand the need to adapt Olivetti's commercial, employment and training strategies, as well as productive strategy to the US environment. In doing so, the subsidiary gained increasing, although always limited, management autonomy. The process of adaptation also allowed

²²⁷ "Olivetti's Brain Gear Pencil Sharpener," *BusinessWeek*, 3 June 1996.

²²⁸ Hamel and Prahalad (1989).

Olivetti to absorb and test new methods and contributed to the company transformation into an MNC in terms not only of geographical spread of operations but also of corporate culture.

It took a bit longer for the headquarters to fully acknowledge that the mission of Olivetti-Underwood could be fruitfully redirected from exploiting to augmenting Olivetti's capabilities, through information and experience exchanges between Italy and Hartford, technology transfers and cross-fertilization. While Olivetti's ultimate success in "pulling Underwood up by its ears" was recognized by *The Economist* as "a not unremarkable feat", it was delayed and made costlier by the management's inability to decentralize marketing responsibilities and give more power to the US subsidiary.²²⁹ In fact, American executives working in Italian subsidiaries have been often struck by the contrast between the large number of flamboyant industrial captains and the fewness of middle-level executives.²³⁰ Olivetti also suffered from the "not-invented-here syndrome", underplaying the essential value of foreign research and development collaboration.²³¹ This was partly due to the Italian management's difficulty in fully understanding the local business system, which in turn owed something to linguistic shortcomings.²³²

Eventually, in the late 1970s, Olivetti was probably in the position to exploit its multinational location as an opportunity to develop R&D and knowledge for the whole group. The R&D centre in Cupertino was the necessary condition to tap into the knowledge base available in the West Coast, to scout for technologies, and to create synergies with the internal knowledge resources that Olivetti had in various research locations in the US and in Italy. This research effort was accompanied by other investments in start-ups and venture capital to allow Olivetti to elaborate innovative technology solutions and ideas. The strategy, unfortunately, did not prove sufficiently audacious to develop the products that could establish Olivetti as a global leader. Although De Benedetti lambasted American managers

²²⁹ "Olivetti: a choice of strategies," cit.

²³⁰ "Land of Autocratic, Energetic Business Giants," *Time*, 12 January 1962 and "First Italian Foreign Investment Seminar Staged by Chamber," *Trade with Italy*, June 1961, respectively.

²³¹ In adherence to its traditionally "closed" innovation model, centered both on learning and internal tacit knowledge, on in-house development of machinery and intermediary inputs, and on intra-muros R&D activities, different either to the Italian peculiar innovation model or the standard corporate one. In the Italian model, external tacit knowledge is a key source of technological knowledge: it is incorporated mainly by means of learning activities and qualified knowledge interactions with both customers and vendors of capital and intermediary inputs. In the corporate model key is the research and development activity of large firms laboratories and the intra-muros generation of codified technological knowledge. External knowledge is important but it is mainly accessed by means of specific knowledge transactions formalized as long-term contracts with universities and other public and private research centres, or by the acquisition of codified knowledge embedded in patents and blueprints. See Antonelli and Barbiellini Amidei (2009).

²³² "Language barriers are another problem. Most Olivetti officials know some English, but few are fluent. Says a top official: «We sometimes have difficulty communicating our ideas. U.S. companies often have the same trouble when they move to Europe.» Yet another problem: the need to keep stockholders informed. Olivetti owns 70 per cent of the stock of Underwood; the rest is publicly held. Olivetti has had to adjust to the demands of U.S. stockholders for news about Underwood. In Italy, corporate operations are closely guarded secrets. Little information is made public. For example, there are no quarterly reports to stockholders. «It's just one more adaptation we had to make», says one official" (ASO, DCUS, TV, fasc. 851, coll. V-C-N-1-5, "When a European firm opens up in U.S.," *U.S. News and World Report*, 23 July 1962). This problem was then radically solved, by delisting Underwood from the NYSE. Twenty years later, managing information flows with local banks was still a problem (ASO, FCP, fald. 50, fasc. 531, coll. V-A-A-1-5, *Lettera di Mario Gabrielli a Ottorino Beltrami del 9 luglio 1976*).

for the “dramatic decline in [their] entrepreneurial skills” and American companies for “an enormous growth of bureaucracy”,²³³ he proved unwilling to grant Olivetti USA the necessary autonomy to develop, in terms of managerial and entrepreneurial scope, as a creative subsidiary, actively trying to shape her destiny, developing new technologies/products, contributing to shape the group’s strategy and development path.

A second group of findings relate to the management and performance of foreign companies in the United States. In contrast with the findings of Jones and Gálvez-Muñoz (2001), Olivetti had no major problems controlling its US operations in a purposeful fashion. This probably reflects the much smaller scale of operations of the Italian firm relative to such European giants as Unilever and Nestlé, which were reluctant to become too closely involved in the affairs of U.S. affiliates through fears of anti-trust legislation. For the first decade, Olivetti made no attempt to hire top-notch local managers, preferring instead to post highly-competent Italian managers in the world’s most testing market. Some of them were so good that they rose to prominent positions in American business. Only later did the company start a deliberate effort to “indigenize” its management.

Finally, our paper makes a contribution to the history of the international expansion of Italian companies. Italy is a late-comer and Italian MNCs mostly ventured to geographies where the presence of an ethnic community guaranteed a huge reservoir of potential consumers (and this was also true for the United States). Until the recent past precious few of its firms had accumulated the necessary ownership advantages to expand internationally, *a fortiori* in distant markets such as the United States. Olivetti claimed to be different: since the very beginning, it targeted the core US market, not ethnic niche markets, relying on “the Olivetti Touch”, innovative and competitive products.²³⁴ To some extent its chequered history in the U.S. market hunted Italian executives for the next decades. In fact, it has only been since the 1980s, and more decisively in the 2000s, that the number of Italian-owned companies and plants in the United States has grown significantly, until the takeover of Chrysler by Fiat in spring 2009.²³⁵

²³³ “A Confident Capitalist Redesigns Olivetti,” *Fortune*, 22 October 1979.

²³⁴ In De Benedetti’s words, “we must be an American company in the US. You can remain Italian in America and be successful only if you are Gucci”. See “She Has Three Years to Turn Olivetti America Around”, cit.

²³⁵ Fiat itself in the 1950s was pinpointed by Adriano Olivetti, before the Underwood acquisition, as the “most American” of the Italian firms (ISTORETO, FUZ, b. C UZ 64, fasc. 151, “35 domande ad Adriano Olivetti,” *Il Tempo*, 27 June 1957).

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TABLE 1 - Olivetti S.p.A. Sales and Exports	Total sales in Italy (ITL billion)	Total exports (ITL billion) §	Total exports in % of total sales	Total sales in Italy (quality adjusted mechanical units)	Total exports (quality adjusted mechanical units)	Total exports in % of total sales (quality adjusted mechanical units)	Exports to US and Canada [^]	Exports to US and Canada in % of total export [^]	Exports to Europe [^]	Exports to Europe in % of total export [^]	Exports to Latin America [^]	Exports to Latin America in % of total export [^]
1954-55	11.2	7.2	39.3	138.266	164.944	54.4	27.934	16.9	87.090	52.3	29.589	17.9
1955-56	11.5	9.8	46.1	153.834	220.460	59.9	41.588	18.9	122.903	55.7	26.245	17.9
1956-57	14.4	15.3	51.5	171.995	291.555	62.9	61.633	21.1	142.910	49.0	49.832	27.7
1957-58	19.3	20.8	51.9	186.352	372.560	66.7	79.347	21.3	174.329	46.8	88.359	27.7
1958-59	22.4	22.6	50.2	208.851	429.712	67.3	89.149	20.7	209.658	48.8	93.962	21.9
1959*	19.1	20.9	52.2	167.026	363.798	69.5	101.187	27.8	171.040	47.0	58.456	16.1
1960	31.6	39.3	55.4	294.279	721.822	71.0	221.827	30.7	319.290	44.2	107.409	14.9
1961	44.0	49.0	52.7	390.265	959.242	71.1	261.403	27.3	381.020	39.7	219.231	22.9
1962	52.1	60.1	53.6	456.412	1.137.320	71.4	315.398	27.7	512.422	45.1	184.949	16.3
1963	61.7	60.0	49.3	529.994	1.193.046	69.2	337.399	28.3	563.758	47.3	171.611	14.4
1964	60.1	56.2	48.3	486.717	1.063.688	68.6	255.285	24.0	521.207	49.0	117.006	11.0
1965	57.4	64.5	52.9	470.293	1.222.860	73.2	313.912	25.7	580.243	47.4	152.354	12.5
1966	55.6	71.7	56.3	456.178	1.410.094	75.6	437.595	31.0	603.312	42.8	165.681	11.7
1967	63.7	80.9	56.0	506.452	1.475.027	74.4	427.719	29.0	695.608	47.2	135.655	9.2
1968	71.4	87.8	55.2	560.690	1.589.397	73.9	381.466	24.0	860.882	54.2	128.414	8.1
1969	72.2	89.0	55.2	567.321	1.535.472	73.0	392.006	25.6	836.076	54.5	88.233	5.7
1970	98.6	131.6	57.2	768.015	2.363.361	75.5	552.085	23.4	1.336.203	56.5	136.442	5.8
1971	114.4	125.7	52.4	909.210	2.185.590	70.6	466.881	21.4	1.258.952	57.6	122.951	5.6

§ The data on exports of Olivetti S.p.A. only include sales abroad and sales to foreign subsidiaries.
[^] Quality adjusted mechanical units.
* Nine months, 1 April - 31 December.

Sources: our calculations on "Notizie sulla Ing. C. Olivetti & C., Ivrea, luglio 1964"; "Informazioni sul Gruppo Olivetti e sulla Ing. C. Olivetti & C., Ivrea, giugno 1972"; "Relazione Olivetti S.p.A., Olivetti, Ivrea, anni vari" in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

TABLE 2 - Underwood*	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Revenues (US\$ mln)	76.0	82.4	85.2	82.7	71.8	75.4	94.6	96.8	113.8	117.9	110.1	120.3	145.6	156.8	167.3	162.7
Profits	1.2	1.5	-8.1	-0.6	-7.1	-14.1	-26.0	-8.9	-8.1	-6.4	0.2	1.2	3.7	3.4	3.0	1.1
Assets	55.0	55.6	59.1	57.0	63.4	56.9	72.8	88.8	95.8	81.1	68.3	69.5	76.2	94.8	107.7	111.4
Stockholders equity	10.0	13.0	30.5	28.9	27.5	18.1	16.2	8.1	0.0	-8.7	31.2	32.4	36.1	39.5	57.4	58.7
Employees (thousands)	9580	8879	8338	12.4	11.3	10.0	11.2	12.0	11.2	7.6	6.6	6.8	7.8	8.0	6.4	6.2

Source: Fortune 500. *Olivetti Underwood since 1963.

TAB. 3 - Olivetti Group Personnel																		
	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Olivetti S.p.A.	9.724	11.450	12.840	13.713	14.374	14.839	18.742	21.781	25.723	26.541		22.431	23.214	23.506	25.162	30.929	33.121	33.142
Italian subsidiaries												2.236	2.268	2.379	2.264	1.364	1.566	1.368
Italy Total	9.724	11.450	12.840	13.713	14.374	14.839	18.742	21.781	25.723	26.541		24.667	25.482	25.885	27.426	32.293	34.687	34.510
Foreign Subsidiaries	5.247	6.330	7.788	9.533	10.600	11.761	12.741	17.021	18.315	20.462								
Olivetti Underwood	10.000	13.000	13.500	12.400	11.300	10.000	12.000	12.000	12.000	7.556	6.582	6.782	7.815	7.950	6.400	6.200		
Abroad Total	5.247	6.330	7.788	9.533	10.600	11.761	25.440	28.616	29.552	28.020		29.046	29.678	32.340	33.255	36.078	38.596	39.288
Grand Total	14.971	17.780	20.628	23.246	24.974	26.600	44.182	50.397	55.275	54.561		53.713	55.160	58.225	60.681	68.371	73.283	73.798
Italy Total	33.749	33.413	33.495	33.213	32.732	32.204	31.112	28.773	28.180	27.207	26.385	25.965	27.111	27.641	28.425	29.519	28.897	28.169
Abroad Total	38.524	37.688	38.092	37.536	36.265	33.869	30.422	27.158	25.159	26.264	23.378	21.835	20.502	21.303	30.666	28.568	28.663	28.768
Grand Total	72.273	71.101	71.587	70.749	68.997	66.073	61.534	55.931	53.339	53.471	49.763	47.800	47.613	48.944	59.091	58.087	57.560	56.937
Italy Total	26.989	22.400	21.239	18.536	16.656	15.236	13.885	10.861	13.671									
Abroad Total	26.690	24.084	20.458	17.386	17.211	14.884	12.392	11.798	3.071									
Grand Total	53.679	46.484	41.697	35.922	33.867	30.120	26.277	22.659	16.742									

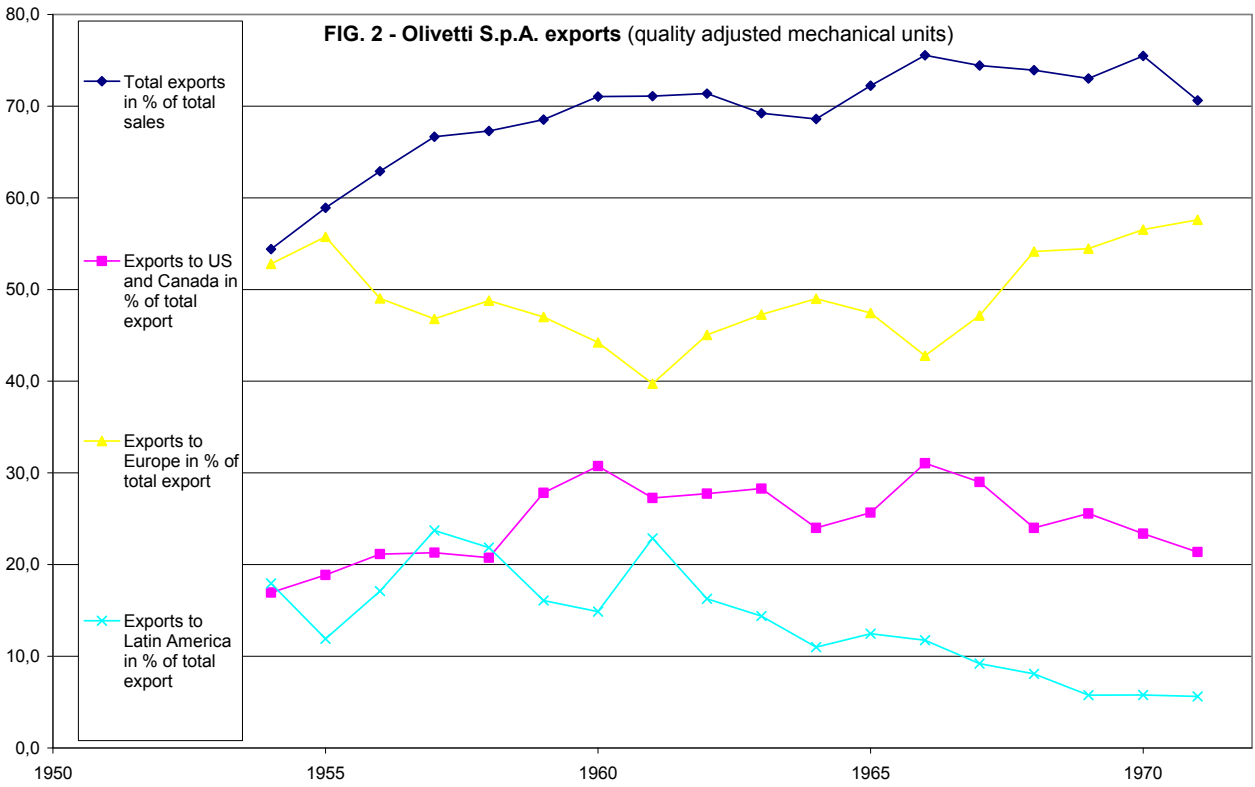
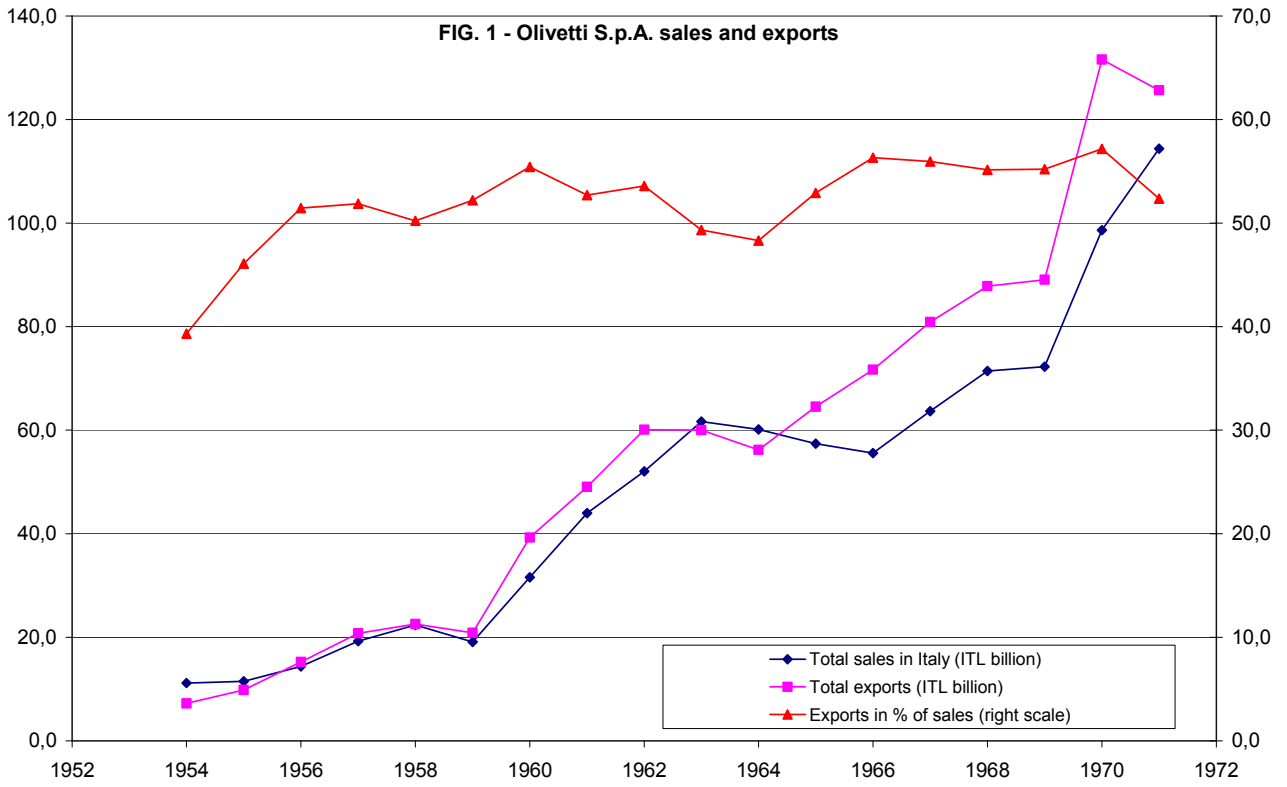
Sources: our calculations on "Notizie sulla Ing. C. Olivetti & C., Ivrea, luglio 1964"; "Informazioni sul Gruppo Olivetti e sulla Ing. C. Olivetti & C., Ivrea, giugno 1972";
Relazione Olivetti S.p.A., Olivetti, Ivrea, anni vari in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326; Fortune 500; since 1972, FOM CGIL - December 2008. Data at year's end.

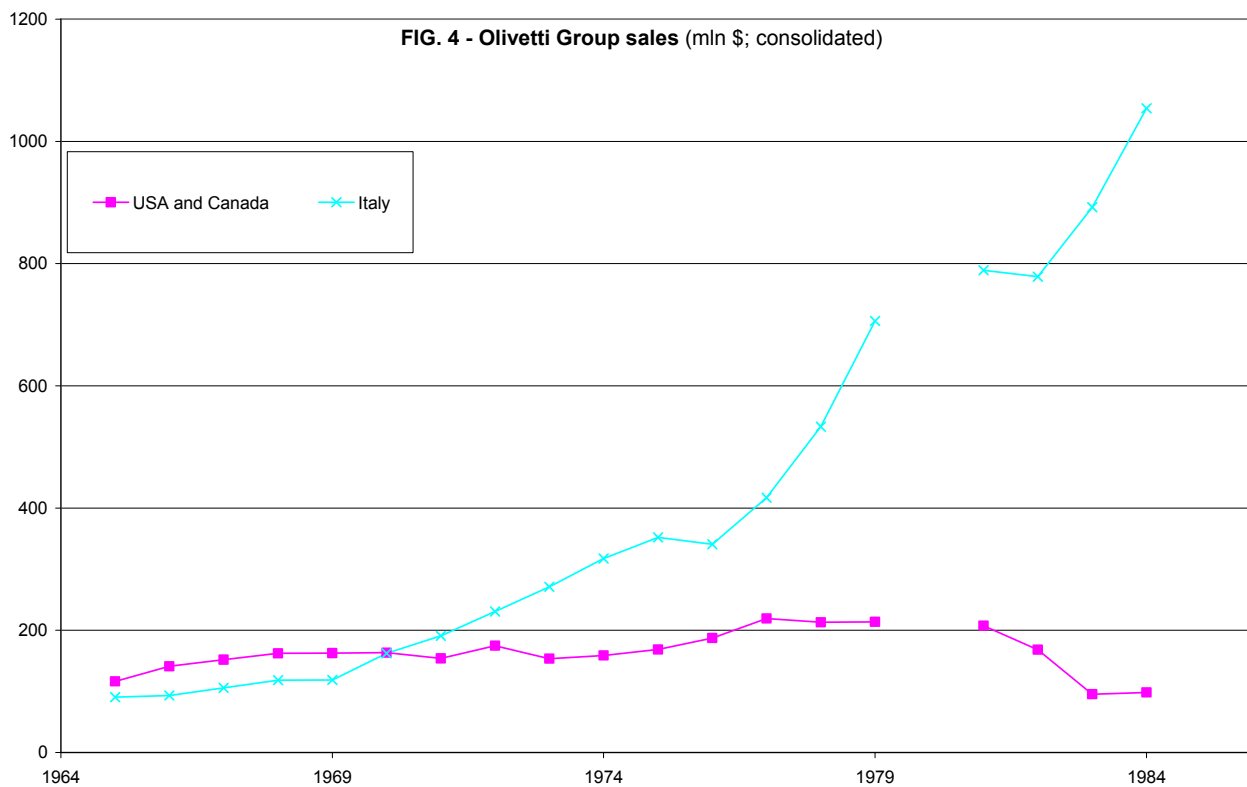
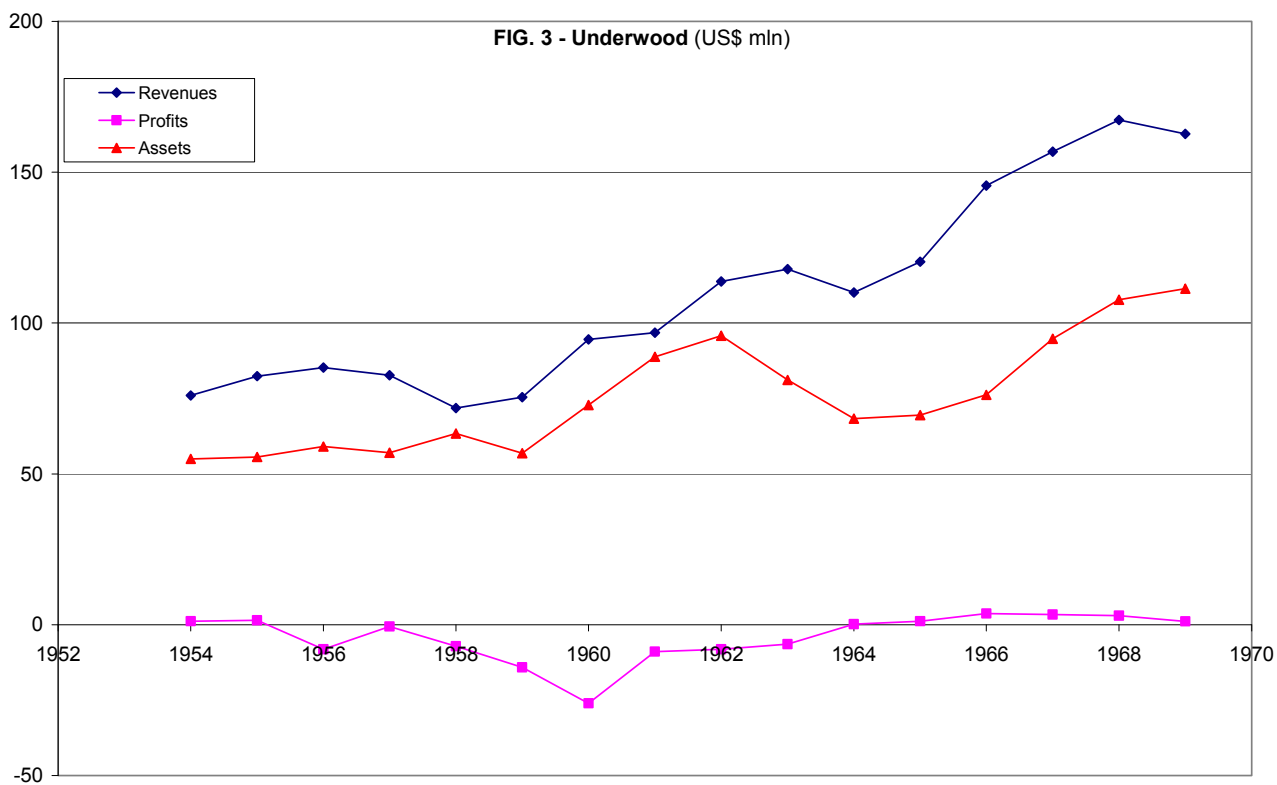
TAB. 4 - Olivetti S.p.A. participations																
(abroad and in Italy)	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1978
Olivetti International (US\$)	-	14.962.864	14.895.019	14.884.983	14.894.208	24.837.910	24.866.680	24.708.674	24.719.629	25.072.060	103.090.975	103.233.061	92.485.093	112.813.577	88.487.854	140.629.425
Olivetti Underwood* (US\$)	38.523.634	997.527	30.724.593	30.703.890	30.722.920	30.740.496	45.696.136	45.405.777	45.425.908	46.073.551	-	-	-	-	-	-
Total	61.272.780	41.213.686	72.749.704	80.439.038	79.430.427	84.880.788	98.326.223	101.265.756	106.492.802	106.239.742	113.785.460	115.994.494	103.788.840	124.020.858	98.543.766	160.033.026
Olivetti International %	-	36.3	20.5	18.5	18.8	29.3	25.0	24.4	23.2	23.6	90.6	89.0	89.1	91.0	89.8	87.9
Olivetti Underwood* %	62.9	2.4	42.2	38.2	38.7	36.2	46.0	44.8	42.7	43.4	-	-	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
* Underwood Corporation before 1963, OCA since 1970.																

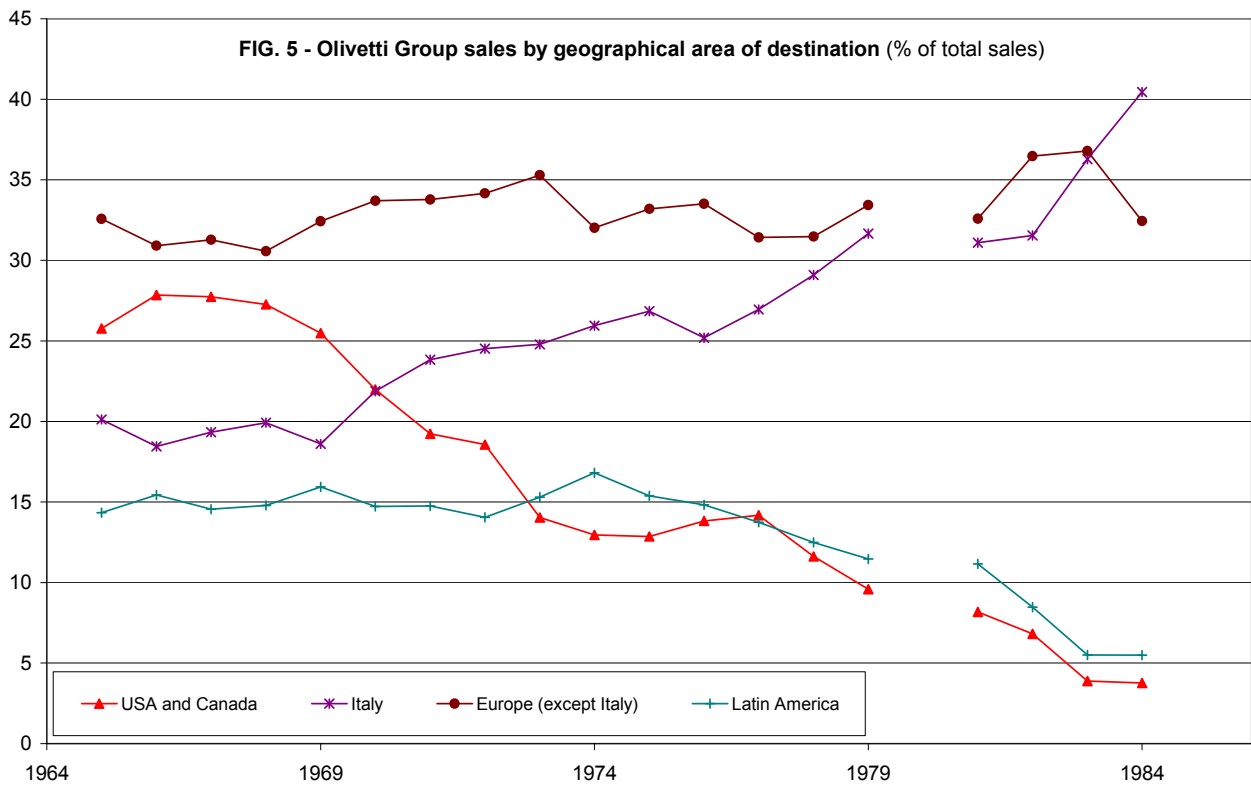
Sources: our calculations on "Notizie sulla Ing. C. Olivetti & C., Ivrea, luglio 1964"; "Informazioni sul Gruppo Olivetti e sulla Ing. C. Olivetti & C., Ivrea, giugno 1972"; "Relazione Olivetti S.p.A., Olivetti, Ivrea, anni vari" in ASBI, Raccolte diverse - Relazioni e Bilanci, cart. 1326.

TABLE 5 - Olivetti Group Sales	Olivetti Group total sales (mln \$; consolidated)	USA and Canada - total sales (mln \$)	USA and Canada - total sales in % of Olivetti Group total sales	Italy - total sales (mln \$)	Italy - total sales in % of Olivetti Group total sales	Europe (except Italy) - total sales (mln \$)	Europe (except Italy) - total sales in % of Olivetti Group total sales	Latin America - total sales (mln \$)	Latin America - total sales in % of Olivetti Group total sales
1965	450,3	116,1	25,8	90,6	20,1	146,7	32,6	64,6	14,3
1966	505,6	140,8	27,8	93,3	18,4	156,3	30,9	78,1	15,4
1967	546,5	151,6	27,7	105,6	19,3	170,9	31,3	79,5	14,6
1968	594,4	162,1	27,3	118,4	19,9	181,7	30,6	87,9	14,8
1969	638,0	162,6	25,5	118,7	18,6	206,9	32,4	101,7	15,9
1970	741,8	163,1	22,0	162,3	21,9	249,9	33,7	109,2	14,7
1971	799,7	153,8	19,2	190,6	23,8	270,1	33,8	118,0	14,7
1972	940,7	174,7	18,6	230,7	24,5	321,4	34,2	132,2	14,0
1973	1094,2	153,6	14,0	271,2	24,8	386,2	35,3	167,5	15,3
1974	1223,8	158,5	13,0	317,5	25,9	391,8	32,0	205,7	16,8
1975	1311,0	168,5	12,9	351,9	26,8	435,2	33,2	201,6	15,4
1976	1352,8	187,1	13,8	340,8	25,2	453,3	33,5	200,5	14,8
1977	1547,0	219,4	14,2	416,9	27,0	486,1	31,4	212,6	13,7
1978	1833,3	213,0	11,6	533,2	29,1	577,0	31,5	229,0	12,5
1979	2229,4	213,7	9,6	706,0	31,7	745,3	33,4	255,6	11,5
1980									
1981	2537,6	207,5	8,2	789,0	31,1	826,8	32,6	283,0	11,2
1982	2468,4	168,1	6,8	778,6	31,5	900,4	36,5	209,1	8,5
1983	2459,3	95,5	3,9	892,4	36,3	904,7	36,8	135,4	5,5
1984	2606,4	98,2	3,8	1054,3	40,4	845,5	32,4	143,2	5,5

Sources: our calculations on "Notizie sulla Ing. C. Olivetti & C., Ivrea, luglio 1964"; "Informazioni sul Gruppo Olivetti e sulla Ing. C. Olivetti & C., Ivrea, giugno 1972";
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